

MASSACHUSETTS
40 main st, suite 301
florence, ma 01062
tel 413.585.1533
fax 413.585.8904

WASHINGTON
501 third street nw, suite 875
washington, dc 20001
tel 202.265.1490
fax 202.265.1489



Testimony of

S. Derek Turner
Research Director
Free Press

before the

United States House of Representatives
Committee on Energy and Commerce
Subcommittee on Communications, Technology and the Internet

Regarding

The National Broadband Plan:
Deploying Quality Broadband Services To The Last Mile
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Free Press
Massachusetts Office
40 Main St., Suite 301
Florence, MA 01061
(413) 585-1533

Free Press
Washington Office
501 3rd St, NW, Suite 875
Washington, DC 20001
(202) 265-1490

SUMMARY OF TESTIMONY OF S. DEREK TURNER, RESEARCH DIRECTOR, FREE PRESS

The FCC is poised to transition the existing Universal Service High Cost Fund to a Connect America Fund. This massive policy shift is the cornerstone of the Commission's National Broadband Plan and is the FCC's response to the Congressional directive for the agency to produce a plan that ensures "that all people of the United States have access to broadband capability." We commend the Commission for taking this significant first step toward making universal broadband a reality, but have several concerns about the details of the proposal. First and foremost, we have concerns about the assumptions that underlie the analytical foundation of this transition plan.

Congress requested that the National Broadband Plan contain "an evaluation of the status of deployment of broadband service," and the Plan reported back that 95 percent of U.S. housing units have access to broadband facilities capable of delivering at least 4 megabits per second (Mbps) in actual downstream speeds, and 1 Mbps in actual upstream speeds. However, the assumptions that underlie this assessment are quite suspect, and the figure itself likely overstates the true nature of broadband deployment in rural America. The estimate has five major underlying flaws: incorrect assumptions of full Internet service deployment within the cable TV service footprint; incorrect assumptions about the type of cable modem technologies deployed; predictions of DSL deployment based on existing state deployment maps that are perhaps flawed themselves; incorrect assumptions about the capabilities of deployed DSL facilities; and ignorance of middle-mile data transport constraints that may lead to an overstatement in the available quality of deployed last-mile facilities. Combined, these assumptions serve to understate the true nature of the underserved broadband problem, and if relied upon for long-term policymaking, may confound efforts to bring true high-quality services to every corner of the Union.

The problems with this estimate only serve to highlight the fact that the FCC currently lacks adequate information on the actual state of broadband availability, despite years of public and Congressional pleas for better data. This need not be the case. The Commission has for nearly two years failed to act on its own proposal to collect broadband availability data. And now, despite the fact that the National Broadband Plan strongly recommends that the FCC finally gather this availability data, the Commission has signaled its intent to delay the matter even further.

Good data is requirement for good policy, as is a strong commitment to efficiency and good ideas in the face of entrenched interests. The National Broadband Plan does set out a plausible vision for modernizing the old USF to ensure universal access to current-generation quality broadband services. However, the transition plan still leaves in place many of the more problematic aspects of the existing subsidy system, including the lack of a determination of where subsidies are actually needed in order to keep rates and service quality reasonably comparable to rates and quality in urban areas. Further, the transition plan maintains the existing regulatory support structure, where carriers are reimbursed based on their total network cost minus any regulated revenues. This support structure fails to recognize that the high revenue earning potential of *existing* rural broadband networks may lessen the need for ongoing subsidy support. The transition plan also appears to adopt a path that brings unserved areas up to par with 2010-era technology, but not until 2020. This raises concerns whether these networks will be scalable to reach future universalization goals. If we follow such a path, we may ultimately end up just replacing one form of the rural-urban digital divide with another.

As Congress moves forward with oversight of the National Broadband Plan and with its own ideas on universal service reform, it must be aware that despite the efforts of the Omnibus Broadband Initiative, we still don't have all the facts in. It is now critical that the FCC act immediately to collect the data that it and other policymakers need to ensure our broadband infrastructure challenges are met in the most efficient manner possible.

Introduction:

Addressing Our Broadband Infrastructure Challenges Requires Good Data and Good Ideas

In the American Recovery and Reinvestment Act Congress asked the Federal Communications Commission (FCC) to produce a plan to “ensure that all people of the United States have access to broadband capability” with a strategy for achieving “affordability... and maximum utilization of broadband infrastructure” by the public. To this end, the FCC’s National Broadband Plan takes a first step toward a larger reshaping of the policy framework governing broadband networks by embracing the idea that broadband Internet access is no longer simply an entertainment service. Rather, it is rapidly becoming critical infrastructure for the 21st century, as the telephone network was to the 20th century.

The core of the National Broadband Plan is the proposal to transition the existing Universal Service High Cost Fund to a Connect America Fund. We commend the Commission for taking this significant first step toward bringing broadband service to all Americans, but have several concerns about the proposal. First and foremost, we have concerns about the assumptions that underlie the analytical foundation of this transition plan.

In asking for a national broadband plan, Congress emphasized the need for the resulting policy framework to be based on good data. Congress asked the FCC to deliver “an evaluation of the status of deployment of broadband service.” To meet this directive, the National Broadband Plan reports that 95 percent of U.S. housing units have access to broadband facilities capable of delivering at least 4 megabits per second (Mbps) in actual downstream speeds, and 1 Mbps in actual upstream speeds. If true, this would mean that our broadband infrastructure challenges are far more manageable than previously thought.

However, upon close examination, it is quite apparent that this determination of broadband deployment is built upon a house-of-cards of assumptions, each deeply flawed in its own right. The result is a certain overstatement of the level of broadband deployment. The simple fact is the FCC currently lacks adequate information on the actual state of broadband availability, something the Broadband Plan itself recognizes. This is rather unfortunate, because the Commission has for nearly two years failed to act on its own proposal to collect broadband availability data -- a proposal that has widespread industry and consumer group support. Unfortunately, despite the National Broadband Plan’s emphasis on the need for the FCC to gather better availability data, the Commission is now poised to delay the matter even further.

Good data is requirement for good policy. But so too is a commitment to efficiency and good ideas in the face of path dependence. The National Broadband Plan sets out a plausible vision for transitioning the old USF to a new broadband-centric universal service system. However, the transition plan still leaves in place many of the more problematic aspects of the existing subsidy system, including the lack of a determination of where subsidies are actually needed in order to keep rates and service quality reasonably comparable to rates and quality in urban areas.

Further, the transition plan maintains the existing regulatory support structure, where carriers are reimbursed based on their total network cost minus any regulated revenues. This support structure fails to recognize that the high revenue earning potential of *existing* rural broadband networks may lessen the need for ongoing subsidy support. The transition plan is also vague as to what quality of networks will be supported, but it appears the calculations are largely based on the cost to upgrade or extend existing infrastructure to offer the 4Mbps/1Mbps standard of service. While this option may require fewer expenditures in the short-term, it raises concerns whether these networks will be scalable to reach future universalization goals. We may ultimately end up just replacing one form of the rural-urban digital divide with another.

As Congress moves forward with oversight of the National Broadband Plan and with its own ideas on universal service reform, it must be aware that despite the efforts of the Omnibus Broadband Initiative, we still don’t have all the facts in. Though we may have had to put the subsidy cart before the data horse in the case of the BTOP and BIP stimulus programs, it is now critical that the FCC act immediately to collect the data that it and other policymakers need to ensure our broadband infrastructure challenges are met in the most efficient manner possible.

The National Broadband Plan's Assessment of The State of Broadband Deployment Appears to be Flawed, Overstating the Availability of Quality Broadband Services

The National Broadband Plan (“NBP” or “the Plan”) sets an initial “universalization target” of 4 Mbps of actual download speed and 1 Mbps of actual upload speed, which it describes a target representative of “a speed comparable to what the typical broadband subscriber receives today.”¹ In other words, the NBP sets a *floor* of 4 Mbps/1 Mbps, based on what the *median* actual speed of U.S. connections are today.² With this “universalization target” in mind, the Plan then proceeds to determine that infrastructure capable of delivering this target is currently available in 95 percent of U.S. housing units.³

Put mildly, this claim is astounding to many of those who have observed and studied the U.S. broadband market. Unfortunately this claim, which differs wildly from the conventional wisdom of the state of the broadband market, is not in any way backed up in the National Broadband Plan with the kind of exhaustive documentation needed to support such an estimate. Aside from some minor explanation in the footnotes, the NBP merely cites a “forthcoming” study that will supposedly provide support to this sweeping assertion. Yet, as of a month after the release of the National Broadband Plan, this study has yet to be made publicly available.

However, we do know enough about how the FCC calculated this 95 percent figure to cast serious doubt on its validity. The Plan’s availability estimate suffers from five major flaws:

Flaw #1 - The estimate assumes full deployment of broadband services within the cable television system footprint. The estimate is primarily based on the knowledge of where cable modem services are available, but the Commission lacks such specific knowledge. Instead, they appear to have information as to the geography of cable television franchise areas, then assume that wherever cable TV is available, so too is cable modem service. But the available evidence does not support this assumption of full deployment within the cable footprint.⁴

Flaw #2 - The estimate assumes the “DOCSIS 2.0” technology is fully deployed throughout the entire cable television system footprint. This is an important assumption, because it is required in order to meet the universalization target’s upload threshold of 1 Mbps.⁵ But contrary to the NBP’s assumption, there is no evidence that DOCSIS 2.0 has been universally deployed, and substantial anecdotal evidence to suggest that many cable systems still rely on the older technology standard.⁶

¹ See “Connecting America: The National Broadband Plan,” Federal Communications Commission, Omnibus Broadband Initiative (OBI), March 2010, at page 135 (*hereafter* “the Plan” or “NBP”).

² See NBP, at page 156. The 4 Mbps/1 Mbps target is based on what the NBP predicts will be the median U.S. actual speed at the end of 2010. It is not the median *deployed* speed.

³ See NBP, at p. 157, noting (quoting the Census Bureau), “Housing units are distinct from households. ‘A housing unit is a house, an apartment, a mobile home, a group of rooms, or a single room that is occupied (or if vacant, is intended for occupancy) as separate living quarters.’ In contrast, ‘A household includes all the persons who occupy a housing unit. . . . The occupants may be a single family, one person living alone, two or more families living together, or any other group of related or unrelated persons who share living arrangements.’ There are 130.1 million housing units and 118.0 million households in the United States.”

⁴ For example, the National Cable and Telecommunications Association (NCTA) reports that currently, cable modem services are available to 96.7 percent of homes in the cable footprint. See <http://www.ncta.com/Statistics.aspx> (showing that 121.9 million of the 126 million homes passed by cable are served with some form of cable modem service. Note that the NCTA reports cable modem is available to 92 percent of U.S. households, though this is not the same as “housing units”, the metric chosen by the NBP, and does not reflect the quality of cable modem service available to those households).

⁵ DOCSIS, or “Data Over Cable Service Interface Specification,” is a telecommunications standard that facilitates of high-speed two-way data transfer over the existing coaxial cable television system. The DOCSIS 1.1 standard enables a total of 38 Mbps downstream capacity and 9 Mbps upstream capacity (excluding overhead), shared amongst an entire neighborhood or system node. DOCSIS 2.0 enables greater upstream capacity (27 Mbps), and has permitted operators to offer advertised upstream speeds that are typically in the 2 to 10 Mbps range. Systems using the DOCSIS 1.x standards have very limited upstream capacity, and in practical deployment, offer upstream capacities in the 384 kilobits per second (kbps) to 896 kbps range.

⁶ See “Better Returns from the Return Path: Implementing an Economical Migration Plan for Increasing Upstream Capacity,” Motorola (2008).

Flaw #3 - The NBP's estimate of 95 percent 4 Mbps/1 Mbps availability is also based on where DSL services are available outside the cable footprint (since the estimate assumes 100 percent deployment of 4 Mbps/1 Mbps minimum cable modem services within the cable footprint). But the estimates of DSL deployment are even more speculative than the cable modem estimates. The OBI created an econometric tool to estimate where DSL services are likely to be available based on input from prior state-based broadband mapping efforts. But many of these maps come with their own sets of assumptions and limitations, and have been roundly criticized.⁷ To use these state-based maps as the sole input to estimating where DSL services are nationwide is an acceptable predictive method absent other data, but it is one that should come with adequate warnings about the degree of uncertainty and appropriateness of interpretation. As the old saying goes, "garbage in, garbage out."

Flaw #4 - The NBP's estimate of 95 percent 4 Mbps/1 Mbps availability vastly overstates the availability of DSL services available outside of the cable footprint that are capable of achieving these speed thresholds. Notably, the vast majority of residential DSL service deployments in the U.S. are not capable of delivering upload speeds that exceed 1 Mbps, as these services typically max out at 896 kbps.⁸ Further, while DSL infrastructure capable of maximum 7.1 Mbps theoretical downstream speeds are commonly available in many urban areas, DSL of the 1.5-3.0 Mbps maximum download variety is still common throughout rural service areas, due to the distance limitations of the technology.⁹

Flaw #5 - The NBP's estimate of 95 percent 4 Mbps/1 Mbps availability assumes the universal availability of "middle-mile" backhaul capacity needed to enable last-mile ISPs to offer services at this quality level. This assumption frankly contradicts other findings in the NBP itself, as well as the large record on this issue.¹⁰ This assumption is critical to the overall finding, because much of the availability in rural America assumed in the NBP is dependent on cable modem services. Cable modem is certainly a robust technology that is capable of delivering speeds well in excess of the NBP's universalization target, but only in the last mile. If there is not adequate middle mile capacity, the assumptions made about cable modem deployment in the NBP are inherently suspect. Indeed, the American Cable Association, which represents small cable operators, has stated that "many [cable companies] have sufficiently funded 'last mile' projects on their own, but are unable to provide faster broadband speeds because they lack access to high capacity 'middle mile' facilities."¹¹

⁷ See e.g. Further Comments and Further Reply Comments of Consumers Union, Consumer Federation of America, Free Press and Public Knowledge, *In the Matter of 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*, WC Docket No. 07-38, filed June and September 2008.

⁸ The NBP estimates do appear to account for DSL distance limitations, inferring that housing units less than 12,000 feet from a DSLAM can achieve the universalization target, while homes between 12,000 and 16,000 feet from the DSLAM can achieve less than the target, but more than 768 kbps downstream (the theoretical limit for 2 Mbps ADSL is 16,000 feet, while the limit for 8 Mbps is 9,000 feet). But these estimates *ignore* the fact that ADSL's theoretical upstream capabilities top out just above 1Mbps, under ideal short loop situations, ignoring any data overhead. This is true for the more advanced standard of DSL (ADSL2+) used in deployments by AT&T, CenturyLink and others that enable much higher download speeds. Thus it is unlikely that *any* of the DSL lines identified as lying outside the cable footprint are capable of actually delivering 1 Mbps upstream capacity. See <http://www.dslreports.com/distance>, <http://www.itu.int/rec/T-REC-G.992.1/en> and <http://www.itu.int/rec/T-REC-G.993.1-200406-1/en>.

⁹ According to the National Telecommunications Cooperative Associations' latest annual survey of members, "forty-six percent [of respondents] indicated that the average distance from the digital loop carrier (DLC) to the end user was between 15 and 18 thousand feet (kft), 24% between 9 and 15 kft, 22% greater than 18 kft and 8% 9 kft or less." See "NTCA 2009 Broadband/Internet Availability Survey Report," National Telecommunications Cooperative Association, October 2009.

¹⁰ See generally comments filed *In the Matter of Impact of Middle and Second Mile Access on Broadband Availability and Development*, NBP Public Notice #11, GN Docket Nos. 09-47, 09-51, 09-13, Public Notice, 24 FCC Red 12470 (2009).

¹¹ See Comments of The American Cable Association, *In the Matter of the American Recovery and Reinvestment Act of 2009 Broadband Initiatives*, Docket No. 090309298-9299-01, April 13, 2009 (*ACA NTLA Comments*). Available at <http://www.ntia.doc.gov/broadbandgrants/comments/7DB6.pdf>.

Though the FCC Claims it is Now A “Data-Driven” Agency, It Continues to Ignore the Need to Collect Critical Data Essential to Formulating Sound Universal Service Policies

The flaws in the National Broadband Plan’s estimates of the scope of the un- and underserved broadband problem is just one more example of the agency’s failings when it comes to data collection and analysis. Though the Commission has made improvements in recent years, and though the NBP charts a path for further improvement, we have yet to see the FCC take the steps necessary to improve its data collection and analysis practices. This is unacceptable, especially given that these issues have been well-known to the Commission for many years.

The ARRA asked the FCC to deliver “an evaluation of the status of deployment of broadband service” and tasked the NTIA with developing “a comprehensive nationwide inventory map of existing broadband service capability and availability in the United States that depicts the geographic extent to which broadband service capability is deployed and available from a commercial provider or public provider throughout each State.” Congress clearly recognized the need to understand the scope of broadband availability, and given the passage of the Broadband Data Improvement Act the year prior, was perhaps a bit frustrated that such knowledge did not exist at the FCC and Department of Commerce.

This frustration is well placed. Though the FCC has been collecting broadband data from ISPs for over a decade, it has yet to ask providers to submit information about the availability and capacities of their services. In 2007 the FCC began a process to correct this deficiency, and issued long-awaited changes to the *subscriber* information collected from ISPs. In 2008, following from this effort, the FCC reached a tentative conclusion on the issue of broadband availability data, with a commitment to a rule by the end of that year. Free Press worked with other stakeholders to reach agreement on some of the issues with the FCC’s tentative conclusions that caused concern among certain ISPs. We along with AT&T reached consensus on a census-block based methodology for collecting availability data, one that would provide very granular deployment information without placing too heavy of a reporting burden on ISPs. Unfortunately, the FCC failed to act on this issue prior to the departure of Chairman Kevin Martin.

However, we once again raised this issue before the Commission, bringing to the attention of the staff of acting Chairman Capps on multiple occasions in early 2009.¹² We noted how quick action on the issue of availability data would help guarantee the efficiency and likely success of the pending broadband stimulus efforts at the NTIA and RUS. The Commission did not act.

In July of 2009, we once again raised the issue before the staff of newly sworn in Chairman Genachowski.¹³ In a detailed presentation, we noted how swift FCC action could enable the NTIA to save potentially hundreds of millions of dollars that it was poised to spend on state-based mapping efforts. The FCC again failed to act, though NTIA did ultimately implement our recommendation to move to a census-block unit of reporting, which was agreed to by most of the major U.S. ISPs and their trade associations.¹⁴ Having failed to convince the Commission to act on the availability data issue in time to influence the NTIA’s own efforts, Free Press along with five other public interest organizations sent Chairman Genachowski a letter in August of 2009, expressing the pressing need to collect such information as soon as possible in order to put the National Broadband Plan on sound analytical footing.

These past pleas for the Commission to bring its broadband availability data collection proceeding to a resolution have gone ignored. However, the National Broadband Plan itself does recognize the need to collect this information, recommending that the FCC “collect broadband availability data at the census block level, by provider, technology and offered speed.” By reading the NBP, one can infer that the Omnibus Broadband Initiative (OBI) team felt that the lack of such information would be an impediment to successful policymaking, and that collecting such information should be a Commission priority. Unfortunately, the FCC doesn’t appear to agree. In its proposed 2010 schedule for Broadband Plan Implementation, the Commission

¹² See ex parte letters filed by Free Press in 07-38 on February 3, February 6, and March 6 2009.

¹³ See ex parte letter filed by Free Press in 07-38 on July 7, February 6, and March 6 2009.

¹⁴ See Fawn Johnson, “Commerce Dept Drops Request for Sensitive Telecom Data”, *Dow Jones Newswires*, August 7, 2009.

proposes to *begin* a new proceeding on the issue of broadband data -- in the forth quarter of this year. Given past history, this likely means that any broadband availability data will not be collected and analyzed until perhaps the first few months of 2014.¹⁵

Thus, even though there is widespread agreement among consumer groups, state regulators and industry on what types of availability data should be collected, and even though the Commission has already conducted a proceeding on this issue and come to a reasonable tentative conclusion that is endorsed by the National Broadband Plan itself, the FCC proposes to *start over* on this issue, *at the end of this year* no less. This, to put it mildly, is simply stunning, and it raises serious questions about the FCC's commitment to sound, fact-based, data-driven policy making, despite numerous assurances by the Chairman to the contrary.¹⁶

But the fact that the FCC is poised to move forward with its universal service transition plan absent adequate data is perhaps just more of the same for this subsidy program. As the GAO has noted,¹⁷ the FCC has yet to ask and answer the critical question: what subsidies are needed to ensure the desired outcomes are met? The USF simply lacks a mechanism to determine what level of subsidy is needed to ensure that voice services are available at reasonable comparable price and quality. In this light, the NBP's estimate that 95 percent of the country's housing units can receive 4 Mbps/1 Mbps quality broadband services, most likely made available by completely unsubsidized cable companies raises a very interesting question about the need for the existing telephony USF. If only 7 million housing units lack access to this capacity, what is the exact need for the existing USF, which provides support for over 20 million lines operated by small LECs alone, and support for the loop cost of another 10-million plus lines operated by larger non-rural ILECs?¹⁸

In other words if cable companies are operating unsubsidized in areas of subsidized ILECs and CETCs, and able to offer reasonably priced voice services, why do we continue to subsidize those ILECs and CETCs? Yes, it is true that the LECs have Carrier of Last Resort (COLR) obligations, but there is no reason why those obligations could not be placed on the cable carrier. The point of universal service as established in Section 254 of the Act is not to ensure universal availability of LEC-offered voice services, but to just ensure such services are available at reasonable quality and rates. In many respects, the Act's goal of a competitive voice services market has been reached, but the FCC's USF program simply fails to account for this. Thus, in addition to the need to collect better broadband deployment data, the FCC needs to gather better information that will enable it to more wisely spend ratepayer funds as it conducts the slow transition of the USF from a voice-centric to data-centric fund.

¹⁵ The Commission last began a proceeding to make changes to Form 477 in the summer of 2007. The first report containing information from that effort was just released this March. Thus, it took nearly 3 years from the time the proceeding began, to the time the first analysis was released.

¹⁶ See e.g. Statement of Julius Genachowski, Nominee to Serve as Chairman of the Federal Communications Commission, Before the U.S. Senate Committee on Commerce, Science, and Transportation, June 16, 2009. ("My career inside and outside government has convinced me that the FCC can be a model for excellence in government, fighting for consumers and families, fostering investment and innovation, through open, fair, and data-driven processes -- a 21st century agency for the information age."); Remarks of Chairman Julius Genachowski to the Staff of the Federal Communications Commission, June 30, 2009. ("Our policy decisions will be fact-based and data-driven."); Chairman Julius Genachowski, Prepared Remarks on National Broadband Plan Process, FCC Open Meeting, July 2, 2009. ("I am pleased that we have a plan that will be data-driven. That means not starting with conclusions, but using data to develop analysis. It also means not just accepting data, but digging into data, to find concrete solutions that supersede ideology -- and that can make a difference in the lives of real Americans.")

¹⁷ See "FCC Needs to Improve Performance Management and Strengthen Oversight of the High-Cost Program," United States Government Accountability Office, GAO-08-633, June 2008. "[P]rior GAO reports indicate that best practices include developing goals and measures that address important dimensions of program performance, developing intermediate goals and measures, and developing goals to address mission-critical management problems. Yet, FCC has not established long-term or intermediate performance goals and measures. Additionally, OMB noted that performance measures should reflect desired outcomes, which describe the intended results of the program. Yet, FCC data collection efforts focus on program outputs, such as the number of requests for support payments, which describe the level of activity. In the absence of program goals, measures, and data about the program's performance, the Congress and FCC may be limited in their ability to make informed decisions about the program's future."

¹⁸ Carriers classified as "rural" for the purpose of the USF receive support for approximately 20 million lines through the various rural support programs (HCL, SNA, SVS, LSS, ICLS). The High Cost Model provides support for loops of another 11 million lines owned by "non-rural" ILECs.

The National Broadband Plan’s “Universalization Target” Ignores the Standard for Broadband That Congress Set out in the Telecommunications Act of 1996, and Re-affirmed in the 2008 Farm Bill

The National Broadband Plan picked the 4 Mbps/1 Mbps universalization target based on what the typical U.S. consumer receives today. But it isn’t clear on why the FCC decided to settle for the status quo in setting its universalization target, nor is it clear why the Commission chose an asymmetrical threshold which runs counter to the standard for broadband that Congress has previously enumerated.

Though the term “broadband” is used 48 times in the American Recovery and Reinvestment Act the legislation did not explicitly define “broadband.” There are only two explicit examples of a legal definition of the term broadband in the law.¹⁹ The first is found within the Telecommunications Act of 1996. In defining the term “advanced telecommunications capability” in Section 706 of the Act, Congress stated that:

“The term ‘advanced telecommunications capability’ is defined, without regard to any transmission media or technology, as high-speed, switched, *broadband* telecommunications capability that enables users to *originate and receive high-quality voice, data, graphics, and video* telecommunications using any technology” (*emphasis added*).²⁰

The second example is found within the Food, Conservation, and Energy Act of 2008, which amended the Rural Electrification Act of 1936.²¹ This law defined the term “broadband service” by stating:

“The term ‘broadband service’ means any technology identified by the Secretary as having the capacity to transmit data to enable a subscriber to the service to *originate and receive high-quality voice, data, graphics, and video*” (*emphasis added*).²²

The above two definitions were written a dozen years apart, but are virtually identical. From these legal definitions, we see Congress clearly views broadband as a technology that is characterized by the ability to allow users (or “subscribers”) to engage in high-quality multi-media *two-way* communications. Therefore, for the purposes of implementing the National Broadband Plan, the Commission should have established thresholds that at a minimum adhere to the definitional standards set in 1996 Telecom Act and the 2008 Farm Bill.

In other words, if the Commission chooses to formalize a definition of broadband, it must look at the applications that a particular technology enables end-users to utilize. Based on the legislative language of “originate and receive” and “high-quality video”, we feel that at a *minimum*, the floor of the FCC’s broadband universalization target should be defined as a symmetrical telecommunications service that can reasonably deliver 5 Mbps of bandwidth, in both the down and upstream directions, at latencies low enough to enable high-quality real time voice and video two-way communications.²³ The NBP’s 1 Mbps upstream standard cannot be defended based on faithful interpretation of the law, because this is simply not enough capacity to originate high quality video.

¹⁹ Only 29 enrolled bills enacted by the House and the Senate contains the term “broadband.” Of these 29, only the 1996 Telecom Act and the 2008 Farm Bill deals directly with the broadband definitional issue.

²⁰ Public Law 104-104, Section 706(c).

²¹ Public Law 110-246, commonly known as the “2008 Farm Bill”. Congress passed H.R. 2419 by overriding a Presidential veto, but had inadvertently excluded a title from the enrolled bill. To account for this error, both chambers re-passed the farm bill conference agreement as H.R. 6124.

²² 7 U.S.C. 950bb. Public Law 110-246 amended Section 601 of the Rural Electrification Act of 1936 to reflect this definition of broadband service.

²³ This standard reflects the bandwidth and latencies currently required to engage in a two-way video communications with a vertical resolution of 720 non-interlaced pixels and a scan rate of 24 frames per second, utilizing the current most-efficient compression technology -- the MPEG-4 codec. However, we must emphasize that the FCC’s goals and targets, especially those dealing with “reasonably comparable service” definitions in the context of USF need to be symmetrical. What we are suggesting is the *floor* must be 5 Mbps downstream, 5 Mbps upstream in order to be in line with the definitions in the 1996 Act and the 2008 Farm Bill. But if the FCC finds that the typical downstream speed available in urban areas is say, 10 Mbps, then a “reasonably comparable” standard for the purposes of USF could have a 10 Mbps downstream, 5 Mbps upstream definition. *See* Comments of Free Press in NBP Public Notice #1, August 31, 2009.

The National Broadband Plan's USF Transition Proposal: A Good Start, But There is Much More Work to Do

The communications industry is characterized by economies of density, scale, and scope. Communications networks infrastructure often is more expensive to deploy and maintain in geographically sparse rural areas, but such deployments will reap greater returns if they are carried out on a larger scale and if the networks are capable of offering multiple types of services. In the Telecommunications Act of 1996, Congress directed the FCC to establish a subsidy system to ensure that consumers in all regions of the nation have access to basic telephone service and also directed the Commission to modernize the program to account for advances in communications technologies.

While the Universal Service High Cost Fund has been very successful in promoting the universal availability of basic telephone service, the Commission has yet to follow through on calls to modernize the fund by expanding support to rural broadband networks. Also, critics note that the current High Cost Fund is structured in a manner that has led to explosive growth in the overall size of the fund (tripling over the last decade) without any corresponding accountability regarding the actual need and impact of existing subsidies. Simply modernizing the fund by adding broadband to the existing fund will add further weight to an already strained and potentially unsustainable subsidy system.

In the ARRA, Congress requested that the FCC produce a plan that ensured that “all people of the United States have access to broadband capability.” To this end, the National Broadband Plan proposes to transition the existing Universal Service High Cost Fund to a Connect America Fund. We are very encouraged that the Commission recognized the need to not merely add broadband to the list of supported services, but the need to modernize the Fund by transitioning the Fund. The proposal outlined in the NBP is the first significant step toward bringing broadband service to all Americans, but there is a tough road ahead, and the Commission’s work -- particularly their analytical and planning work has only just begun. The general transition framework discussed in the NBP is a start, but going forward the Commission must focus on two areas overlooked in the proposal: the need to reform the inefficiencies of the old system during the transition, and the need to plan for future-proof deployment.

The Plan indicates that there are seven million U.S. housing units that have yet to see broadband deployment, and calculates that providing access to 6.75 million of these units will require approximately \$11 billion in subsidies over a 10-year period. The Plan concludes that about half of the unserved housing units will only require initial capital deployment cost subsidies, while the remaining areas will require both capital and ongoing cost support.²⁴ To fund the extension of broadband to these areas, the Plan establishes the Connect America Fund (CAF), and establishes a transition plan to move the legacy telephony subsidy system to an all-broadband support system over a 10-year period. During this 10-year period, the CAF will fund deployment and ongoing support to unserved areas, funded via a reallocation of USF monies away from mobile wireless telephony carriers,²⁵ as well as by reducing certain payments to small rural phone companies²⁶

²⁴ While we are deeply skeptical of the NBP's assessment of the availability of 4 Mbps/1 Mbps services, we do concur that the number of completely unserved occupied households (as opposed to un- and underserved) is likely in the 7 to 9 million range. Where we are skeptical is the NBP's assessment that *all* the remaining homes have access to broadband at the 4 Mbps/1 Mbps level. While we have no precise information, due to middle-mile limitations and the continued reliance on DOCSIS 1.1 technology, it is likely that the size of this “underserved” problem is as big as the unserved problem. But again, until the FCC moves to collect better data, we simply cannot define the scope of the underserved problem with any degree of certainty.

²⁵ The Plan envisions freeing up \$3.9 billion by 2020 from zeroing out High Cost Fund payments to Sprint and Verizon Wireless (pursuant to prior commitments) and freeing up an additional \$5.8 billion by 2020 by phasing out all support for Competitive Eligible Telecommunications Carriers, who are for the most part wireless providers offering services in areas also served by a wireline telephone company.

²⁶ The Plan envisions capping payments to rural rate of return carriers from the Interstate Common Line Support fund, which is designed to ensure these carriers earn their 11.25 percent rate of return. This effectively makes these carriers move to price cap regulation, and is estimated to free up an additional \$1.8 billion by 2020.

and larger phone companies.²⁷ Through this reallocation process, the Plan estimates it will free up \$15.5 billion, \$4 billion of which will be used to fund deployment of 3G mobile networks in the few states that lag the national deployment level, with the remaining \$11.5 billion allocated to the CAF.

The Plan sets out a plausible vision for transitioning the old USF to a new broadband-centric universal service system. However, the transition plan still leaves in place many of the more problematic aspects of the existing subsidy system, including the lack of a determination of where subsidies are actually needed in order to keep rates and service quality reasonably comparable to rates and quality in urban areas.

Notably, during the transition, the plan maintains the existing regulatory support structure, where carriers are reimbursed based on their total network cost minus any regulated revenues. This support structure fails to recognize that the high revenue earning potential of existing rural broadband networks may lessen the need for ongoing subsidy support. The transition plan is also vague as to what quality of networks will be supported, but it appears the calculations are largely based on the cost to upgrade or extend existing infrastructure to offer the 4Mbps/1Mbps standard of service. While this option may require fewer expenditures in the short-term, it raises concerns whether these networks will be scalable to reach future universalization goals.

But at this stage, the transition plan is little more than a concept, one that will be fully fleshed out as the Commission moves forward with the Notice of Proposed Rulemaking (NPRM) process, which the FCC is slated to launch on April 22nd. We look forward to offering detailed analysis during the USF transition NPRM process. We hope the NPRM will confront the unanswered questions and contemplate alternate transition paths, such as those offered to the Commission during the 2006-2008 proceedings on this issue.

There is little doubt that the benefits of transitioning the USF to a broadband infrastructure-based system far outweigh the costs. Nor is there any doubt that ensuring universal access to advanced communications technologies will improve the lives of all Americans. The goal of the USF Transition NPRM must be the replacement of the existing subsidy system with one that is efficient, rational, and consistent with the law. This will be no easy task; less ambitious plans offered during the last Commission created a political firestorm and failed to garner widespread support. Turning this vision of USF modernization into reality will require both analytical rigor and political courage.

Increasing The Availability, Capacity and Competitiveness of Middle Mile Infrastructure May Be the Key to Long-Term Rural-Urban Broadband Equity, But More Data is Needed to Determine the Scope and Nature of This Problem

As discussed above, even if an ISP deploys robust last-mile infrastructure, it won't matter if the middle-mile backhaul capacity to the wider Internet is lacking -- an Internet connection is only as robust as its weakest link. Many small rural cable, wireless, and telco carriers cite the lack of adequate and affordable middle mile capacity as a major impediment to service deployment or advancement. In many areas, the former Bell companies dominate the market for wired middle-mile lines, a legacy from the monopoly telephone era. The FCC maintains some limited pricing discipline on a subset of these middle mile lines, but evidence suggests that prices and profits are far too high even among the middle mile "special access" lines that remain under price caps.

The National Broadband Plan recognizes the middle mile pricing issue, but offers little in the way of policy proposals to solve this problem. Instead, the Plan simply recommends that the Commission complete the pending special access proceeding, and suggests that more spectrum be allocated for wireless middle-mile service. While special access reform is long overdue, it is important to note that special access circuits compose just a small subset of the middle-mile market, and are circuits optimized for voice transmissions. The NBP mentions the FCC's past deregulation of the other non-special access high-capacity middle-mile

²⁷ The Plan predicts freeing up \$4 billion by 2020 through the elimination of the Interstate Access Support program, which was originally designed to offset the impact to price cap carriers stemming from the Commission's mandated phasing down of the per minute interstate access rates paid to these carriers for terminating interstate long-distance calls.

broadband services, like Ethernet, but makes no assessment of the health of this market, fails to note what the extent of deployment of these services is, and does not discuss whether or not pricing in this market is competitive.

This lack of knowledge is a problem, particularly for long-term public policy planning. The NBP sets a goal of affordable 100 Mbps downstream /50 Mbps upstream service by 2020, but makes no mention at all how such services will come to rural America. Advances in cable modem capabilities brought by the DOCSIS 3.0 technology will make this goal a certain reality in many parts of the country, but only on those systems that have access to adequate middle-mile backhaul capacity. The FCC can modernize the USF to ensure that every American home is served either by a DOCSIS 3.0 cable or a fiber-to-the-home telco provider, but unless those lines are connected to robust fiber-level quality backhaul, we will merely find that our job is still not finished.

Thus, in addition to the need to collect useful data on the state of last mile broadband deployment, the Commission needs similar data on middle-mile infrastructure. In the fall of 2008 the Commission initiated a Further Notice of Proposed Rulemaking on the issue of middle mile data, tentatively concluding that this type of data (similar to some of the data that used to be collected in the ARMIS reporting system from price-cap carriers) should likely be collected from *all* broadband providers.²⁸ However, as was the case with last-mile data, the FCC has failed to move on this wise and overdue conclusion. We hope this issue will be taken up when the Commission finally moves forward on the data collection issues identified in the NBP.

A Brief Word on Jurisdiction: Trust in The Law and the Deliberative Wisdom of Congress

In the wake of the *Comcast v. FCC* decision, the Commission's authority to act in the broadband arena has been called into question. But in the debate of what the FCC's next step should be, it seems that many have lost the thread of history, placing adjectives like "radical" onto the framework for innovation and competition that Congress established for our nation's two-way communications networks.

Our nation's laws are not made in a vacuum, nor are they made with haste. The lawmaking process is one that is designed to produce laws that are flexible and withstand the test of time. This is achieved in practice through the deliberative wisdom of the Congressional process, which often bases our laws around basic bedrock principles -- principles that transport the law through changing times. Our Communications Act is guided by the principles of universal service, non-discrimination, interconnection, competition and reasoned deregulation.

These principles, through the framework of the 1996 Act, were intended to foster the development of a robust, advanced and competitive two-way communications market. And in many ways they have. But in other ways they have not, due not to flaws in the law, but flaws in implementation of the law. This is why the current heated debate over broadband's place in Title I or Title II seem so odd when viewed in context with the Communications Act itself.

Of course two-way broadband transmission networks belong in Title II, because that's where Congress put them, and intended them to stay. But that does not mean that Congress intended for a permanent heavy hand of regulation to apply to these advanced networks. Again, Congress recognized that as competition develops, reasoned deregulation is an appropriate response.

Section 10 of the Act was the path of reasoned deregulation chosen for our nation's two-way communications networks. FCC Chairman Michael Powell chose a different path to deregulation, a path that involved sometimes metaphysical-like definitional interpretations of legal classifications. Mr. Powell, and later Chairman Martin felt that they could follow this path to deregulation, while preserving the Commission's ability to uphold the principles of universal service, non-discrimination, interconnection and competition. But

²⁸ *Service Quality, Customer Satisfaction, Infrastructure and Operating Data Gathering*, WC Docket No. 08-190, Memorandum Opinion and Order and Notice of Proposed Rulemaking, 23 FCC Rcd 1364, 1382 para. 34, 35 (2008).

the legal theory they based this assumption on has now, through the DC Circuit's decision, been proven to be unworkable. Powell and Martin made errors that are now proving to inhibit the Commission's activities in areas such as universal service for advanced networks that Congress clearly placed under the FCC's authority. This outcome, and its unworkability was predicted by Justice Scalia in his dissent in the *Brand-X* case:

“The main source of the Commission’s regulatory authority over common carriers is Title II, but the Commission has rendered that inapplicable in this instance by concluding that the definition of “telecommunications service” is ambiguous and does not (in its current view) apply to cable modem service. It contemplates, however, altering that (unnecessary) outcome, not by changing the law (*i.e.*, its construction of the Title II definitions), but by reserving the right to change the facts... [by asserting] its undefined and sparingly used “ancillary” powers... Such Mobius-strip reasoning mocks the principle that the statute constrains the agency in any meaningful way.”²⁹

In other words, Powell and Martin’s legal interpretations physically “broke” the law, making it unworkable except through their ancillary authority theory. In pursuing the principle of reasoned deregulation in a manner not laid out by Congress, as Justice Scalia put it, “the Commission has attempted to establish a whole new regime of *non*-regulation... The important fact, however, is that the Commission has chosen to achieve this through an implausible reading of the statute, and has thus exceeded the authority given it by Congress.”

So the FCC is now placed at a crossroads, where it finds one legal framework called into question, and the framework established by Congress waiting to be re-embraced. The notion now promoted by some, that “reclassification” would be a return to “century-old rules made for railroads and Ma Bell phone monopolies” is simply incorrect. Reclassification would simply return the framework that Congress adopted for all two-way communications networks in 1996, a framework that today still applies to all of the high-capacity data lines in the very competitive enterprise broadband market. Reclassification, followed by Section 10-based forbearance will preserve the status quo deregulatory approach, but will put the Commission’s plans for universal service and consumer protection back on proper legal ground. Reclassification simply puts the Commission’s rules back in harmony with the law, and is justified by current realities of the marketplace that make the original 2002 decision inappropriate for today.

But make no mistake, the Commission’s universal service reform plans are in legal limbo as a result of the consequences of the past FCC classification decisions. Free Press is a strong supporter of an efficient and modernized USF, and we have for years argued that the Commission could carry out this task through the use of Title I authority. But this was always a supposition rested upon the untested strength of the Powell/Martin Title I legal theory. In 2008, Verizon, told the Commission that its “authority to use federal high cost subsidies to promote universal service is limited to ‘telecommunications services.’ As the Commission has found, and the courts affirmed, broadband Internet access service is an information service, not a telecommunications service. Thus broadband does not qualify under section 254 as a supported service eligible for high cost subsidies.”³⁰ In 2002, the Federal State Joint Board on Universal Service wrote that because of the information service designation, “broadband Internet access services could not be included within the definition of supported services, because section 254(c) limits the definition of supported services to telecommunications services.”³¹ Though there may have been room for rebutting these assertions in the past, the recent court decision has now essentially closed any avenue to reach a sound advanced USF policy through ancillary authority.

A quirk in interpretation of the law does leave one solid path to extend USF support to broadband, but it is one that brings the baggage of the old USF along with it. Because some small rural LECs chose to retain the classification status of their DSL transmission services as Title II telecommunications services (an option left to them by the FCC’s 2005 *Wireline Order*, so that these carriers could participate in NECA tariff pools), the Commission could technically extended broadband subsidies to these carriers. But this excludes

²⁹ *National Cable & Telecommunications Ass’n v. Brand X Internet Services*, 125 S. Ct. 2688 (2005) (*NCTA v. Brand X*).

³⁰ See Comments of Verizon, *In the Matter of Federal-State Joint Board on Universal Service*, WC Docket No. 05-337, April 17, 2008.

³¹ See *Federal-State Joint Board on Universal Service*, Recommended Decision, 18 FCC Rcd 2943 (2002).

other carriers offering perhaps superior and less expensive technologies, such as cable modem or fixed and mobile wireless. Given that much of the NBP's proposed framework relies on lowest-cost technologies chosen through competitive bidding, it would be unfortunate if only existing subsidy recipients were able to take advantage of the modernized USF. This potential outcome just serves to highlight how far the Commission's interpretation of the statute has strayed from the plain intent of the statute itself.

Though some may feel that the Communications Act is outdated, the fact is Congress overhauled the law in 1996 with an eye towards competition and technological convergence. Title II is not a framework for monopolies offering telephone service, but a framework for competition in two-way communications networks, including advanced broadband networks. Furthermore, the notion that the universal service, non-discrimination, interconnection, competition and reasoned deregulation principles that are at the heart of basic title-II common carriage is somehow outdated ignores the plain fact that many of our law's basic principles are hundreds of years old. From the ideas embodied in the Constitution to the ideas embodied in common law, basic principles often withstand the test of time. In enacting the 1996 Act, Congress certainly understood that non-discrimination and interconnection are the keys to having a robust two-way communications infrastructure, regardless of changes in technologies.

We trust in the law, and are certain that the deliberative wisdom of Congress, if once again properly implemented, will bring the right outcomes that we all agree are desirable.

Conclusion

As consumer advocates with a strong desire to see the goals of Universal Service as articulated in the Communications Act reached in a manner that is fair and efficient to all ratepayers, we welcome the National Broadband Plan's constructive ideas on how to better allocate the scarce resources of the High Cost Fund. This plan reflects the reality that USF reform and the policy framework for achieving universal deployment and adoption of affordable broadband Internet access services are inextricably linked.

But we are concerned about some of the underlying data that informed this analysis, and will work with the Commission in the future to ensure that it collects good data that it must have to inform good policies. Though we have concerns about some of the proposed program design, we expect the Commission will proceed in an open, transparent and fair manner with an open mind to all alternative ideas. Going forward, we hope that the Commission keeps the long-term picture in mind, and ensures that as we close the existing current-generation technology digital divide, that we don't replace it with a next-generation technology digital divide.