Before the
Federal Communications Commission
Washington, DC 20554

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

To: The Commission

COMMENTS OF THE TELECOMMUNICATIONS INDUSTRY ASSOCIATION

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SUMMARY

Government has an important role in ensuring that American citizens enjoy the most robust broadband services in the world. With broadband deployment on the rise, the Commission has a unique opportunity with the National Broadband Plan to further establish polices and incentives to encourage facilities-based entry into the broadband market and to help stimulate consumer demand. The Commission can pursue these goals by taking action to encourage investment in intelligent network infrastructure, foster competition in the broadband industry, promote consumer access to information and connectivity of devices, and allow the market, instead of government, to reflect consumer choice.

More fundamentally, however, the National Broadband Plan should be guided by one core precept: The broadband ecosystem is multifaceted, marked by diverse overlapping networks serving different users with broadly ranging needs that are themselves in constant flux. A balanced and thoughtful approach to broadband policy by the Commission must recognize this unique ecosystem and combine appropriate government action with the power of a competitive market. For example, government can and should promote broadband deployment through: (1) the stimulus of investment, innovation, and promotion of next-generation broadband networks and deployment; (2) the modernization of spectrum policy to ensure the highest value public interest use of spectrum; (3) the promotion of programs and initiatives that provide broadband communications to all Americans, particularly for our most vulnerable; (4) the adoption of policies favoring trade and liberalizing the cross-border flow of capital and labor; (5) the use of targeted, technology-neutral subsidies and tax breaks to favor research and deployment; and (6) the development of a broadband interoperable public safety network.

Similarly, the government should stimulate and aggregate demand for broadband services and sponsor educational outreach and computer ownership programs designed to drive adoption. The government also can play a key role in enhancing broadband deployment by exercising exclusive regulatory authority over the inherently interstate broadband market and taking specific preemptive action where appropriate. In each of these areas, government action can supplement the workings of the market, ensuring access to, and adoption of, broadband by *all* Americans on reasonable terms.

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In this proceeding, the goals of the Telecommunications Industry Association ("TIA") match those of the Commission: They both aim to facilitate the spread of information and communications technology ("ICT") and, in so doing, to improve American lives. TIA is the leading trade association for the ICT industry. Its 500 member companies manufacture or supply the products and services used in the provision of broadband and broadband-enabled applications. With roots dating back to 1924, TIA works to promote the deployment of fixed and mobile broadband, mobile wireless, information technology, networks, cable, satellite and unified communications systems. TIA members' products and services empower communications in every industry and market, including health care, education, security, public safety, transportation, government, the military, the environment and entertainment.

As President Obama, Congress and the Commission have recognized, ICT has come to play an integral role in American life. From health care to highway management, from electrical grids to e-commerce, from entertainment to education, ICT has become a fundamental cornerstone of our personal, social and economic experience. In the Commission's words:

> New, innovative broadband products and applications – whether provided by wireline, wireless, or satellite technology – are fundamentally changing not only the way Americans communicate

> and work, but also how they are educated and entertained, and care for themselves and each other. Individuals increasingly take advantage of broadband today for everyday communications with family and friends, sharing files with co-workers when away from the office, uploading videos and photos, collaborating on articles, blogging about local happenings and world events, creating new jobs and businesses, finding nearby restaurants, shopping, banking, interacting with government, getting news and information when on the go, communicating through relay services, and countless additional applications.[1]

But, of course, not all Americans have access to broadband offerings. And many of those who *do* have access to broadband often have not adopted the technology for one reason or another. Among those with access, many have yet to subscribe. Moreover, even those who do subscribe often lack the capacity needed to support today's most popular (and most bandwidth-intensive) applications – much less tomorrow's. TIA therefore believes that the effort to create a long-term National Broadband Plan is among the very most important endeavors the Commission will undertake in the coming years, and hopes to serve as a partner as the Commission pursues national goals regarding broadband deployment and adoption.[2]

TIA has set forth six key principles that should govern the Commission's approach to broadband policy. Specifically, it believes that the Commission should work to:

(1) enhance efforts to stimulate investment and innovation in next-generation broadband;

(2) pursue forward-looking spectrum management and the allocation of additional spectrum for advanced wireless services on a technology-neutral basis;

(3) provide communications to all Americans, ensuring access to consumers in low income and rural areas and those with disabilities;

(4) facilitate open and fair market access for U.S. companies by promoting full, fair and open trade and competition in international markets;

(5) increase the amount of federal funding towards efforts to deploy broadband in rural areas, communications network-specific basic research, tax credits and expensing provisions,

[1] *A National Broadband Plan for Our Future*, Notice of Inquiry, FCC 09-31 (rel. Apr. 8, 2009) ("Broadband NOI").
[2] *See* American Recovery and Reinvestment Act of 2009, Pub. L. No. 111-5, 123 Stat. 115 (2009) ("Recovery Act").

among other initiatives that foster investment and innovation; and

(6) promote the development of an interoperable public safety network capable of protecting all communities in the event of further domestic disasters.

Below, we address specific means by which the Commission can pursue each of these six goals.

More fundamentally, however, the Commission's National Broadband Plan should be guided by one core precept: The broadband ecosystem is wonderfully (and confoundingly) complex and marked by diverse overlapping networks with different capabilities. Moreover, these networks serve wildly different users with broadly ranging demands that are themselves in constant flux. "Broadband penetration" is not a binary "yes or no" trait, easily tracked in black and white. A user has varying broadband needs during the day – demands at work that will differ from needs at home, and "on the go." All three of these needs will differ from the requirements of parents, siblings, colleagues, and children. Moreover, questions regarding supply are as complex as those involving demand. Some areas of the country have high demand for broadband but no access, while other areas have access that is too slow for contemporary and emerging applications, and many have access to networks but have not adopted broadband due to a lack of computer ownership or digital literacy. Indeed some families might have sufficient broadband capacity but inadequate demand, or no access to the computer equipment needed to enjoy that capacity. And even in areas with high capacity *and* high demand, a single connection often will not suffice, as users may value the relative attributes of wired or fixed service, mobile wireless, and other platforms differently over the course of a single day.

In short, efforts to track and promote the use of affordable high-quality broadband must account for the heterogeneity of the American broadband experience. The ability to check a box proclaiming the availability of "broadband" in a given locale is not sufficient. The Commission's Plan must concern itself with ensuring a robust broadband ecosystem across all

fronts: We must serve the unserved; improve access to the underserved; stimulate adoption among the unserved and underserved; promote competition among different platforms offering different value propositions; and subsidize network construction, one time computer and device costs, and recurring subscription costs where necessary. We must ensure service to residential end users, schools, health care providers, community anchor institutions, public safety agencies, and all other members of the community. We must teach the unconnected to use ICT to improve their lives, and support programs that enable the underprivileged to acquire computers and other crucial hardware.

Below, TIA presents its proposals for achieving these goals, and offers a roadmap for the Commission to guide its important efforts. The "TIA Roadmap" is an initial list of recommended objectives for the Commission to consider as it develops a broadband plan as charged by the Recovery Act. Based on Comments filed in this proceeding, TIA will provide the Commission with a more detailed roadmap in its Reply Comments that sets forth specific action items with suggested timelines. Critical to the National Broadband Plan roadmap is that the government continues to provide grant programs to subsidize broadband deployment and adoption in unserved and underserved areas. TIA hopes that this outline for action will be a useful agenda-setting tool and looks forward to working with the Commission to transform the broadband future into a present-day reality.

I. CHARTING AMERICA'S COURSE

A. A National Broadband Plan Should Stimulate Investment, Innovation, and Promotion of Next-Generation Broadband Deployment and Adoption.

The ubiquitous deployment of next-generation broadband directly impacts the productivity of American industry and of our economy at large, and will have a profound effect on the development of technologies that will impact public safety, education, health care, and

countless other functions that touch our daily lives. The member companies of TIA seek to work with government to attain a modern communications infrastructure deployed for and adopted by all Americans, no matter where they live; what their economic status; what language they speak; and what special needs they might have. A modern communications infrastructure that can deliver broadband to all Americans can form the digital backbone of many of the Obama Administration's most important policy goals and objectives. The Commission therefore should implement policies that stimulate investment, innovation, and the deployment and adoption of new information and communications technologies.

1. The Commission's National Broadband Plan must ensure that regulation of broadband networks is modest and predictable.

Government has an important role in ensuring that American citizens enjoy the most robust communications services in the world, but it must take care to ensure that regulation is targeted, simple, and designed to meet clear and well-defined goals. With broadband deployment on the rise, the Commission must continue its efforts to remove barriers to, and provide incentives for, facilities-based entry into the broadband market. It can pursue these goals by adopting policies that encourage investment in intelligent network infrastructure, foster competition in the broadband industry, promote consumer access to information and connectivity of devices, and allow the market, instead of government, to reflect consumer choice.

A balanced and thoughtful approach to broadband policy must combine appropriate government action with the power of a competitive market. For example, government can and should promote broadband deployment through the use of targeted, technology-neutral subsidies and tax breaks to favor research and deployment; the adoption of policies favoring trade and liberalizing the cross-border flow of capital and labor; the elimination of impediments to investment (including regulatory disparities that indirectly favor one technology over another);

the modernization of spectrum policy to ensure the highest value public interest use of spectrum; and the remedy of clear market failures. Likewise, government can stimulate demand for broadband services, and sponsor educational outreach and computer ownership programs designed to drive adoption. The government also can play a key role in enhancing broadband deployment by exercising exclusive regulatory authority over the inherently interstate broadband market. In each of these areas, government action can supplement the workings of the market, ensuring access to, and adoption of, broadband by *all* Americans on reasonable terms.

In contrast, government efforts to impose detailed regulatory regimes – whether at the state or federal level – have tended to inhibit deployment by prompting litigation and regulatory arbitrage, undermining investment incentives, and deterring entry. Like any other participants in a competitive market, network operators base business decisions on economic signals, which help them determine where there is an opportunity to receive a suitable return on economic investment. Market participants are reluctant to invest in new or upgraded infrastructure when their return on their investment is uncertain. In the face of such uncertainty, investors are likely to take their capital to other sectors offering better opportunities for gain. TIA thus urges the Commission to resist the impulse to impose detailed prescriptive regulation on the ways in which competing platform providers operate their next-generation networks.

2. The Commission's National Broadband Plan must address key barriers to broadband adoption.

While TIA applauds past Commission efforts to promote broadband deployment, it is also critical that the Commission expand its efforts to drive broadband adoption.[3] Demand-side efforts should include, at a minimum, grants for programs that support adoption by low-income users and subsidies for laptops and other broadband-capable devices, as well as funding for

[3] Below, TIA addresses specific ways in which the federal government can use its financial wherewithal to best promote broadband availability and adoption. *See infra* Sections I.A.2 and I.C.1.

computer and "digital literacy" projects, and funding for programs that bundle the purchase of a PC and broadband subscription at discounted rates for students, rural, low-income, and vulnerable populations.

Not only do community-focused entities like Connected Nation and One Economy endorse the critical need for such demand-side programs, but telephone companies, wireless providers, cable operators and other broadband providers support this important notion. For example, as Verizon stated in a recent press release, the government must "address[] demand-side factors that hamper growth of broadband subscriptions, such as the lack of a computer in many households."[4] The National Cable & Telecommunications Association similarly advocated, in the context of the broadband stimulus, that "adoption programs are so critical that NTIA should plan to allocate more than the [funds] required for such programs under the Recovery Act…. By way of example, programs that support an increase in computer ownership and training are very promising and should be supported extensively…. [S]uch grants will be one of the most effective and appropriate ways to stimulate broadband adoption and use."[5]

Empirical evaluations of broadband adoption indicate that take rates are particularly low where users do not have the access to computers and computer centers, have not been exposed to computer training, or do not understand the importance of broadband. Various studies demonstrate that the perceived lack of need for broadband and a lack of computer ownership are the top barriers to broadband adoption. For example, a study conducted by New York City found that virtually every household in the city is currently being passed by one service provider

[4] News Release: Broadband Stimulus Should Focus on Unserved Areas and Demand-Side Obstacles, Verizon Tells Agencies, http://newscenter.verizon.com/press-releases/verizon/2009/broadband-stimulus-should.html (last visited June 3, 2009).

[5] Comments of the National Cable & Telecommunications Association, In the Matter of American Recovery and Reinvestment Act of 2009 Broadband Initiatives, Docket No. 090309298-9299-1, at i, 2 (April 13, 2009).

and 89 percent of households are passed by at least two providers.[6] However, there is only a 52 percent adoption rate in the city, and the broadband adoption gap between low-income versus moderate- to high-income households was found to be approximately 28 percent.[7] The major reasons found by the study for the relatively lower adoption rate by low-income households were: (1) the cost of broadband service; (2) the lack of computer ownership; (3) the absence of computer literacy skills; and (4) a failure to perceive value in broadband adoption.[8] The National Broadband Plan needs to address these barriers to adoption for first time broadband users in these vulnerable urban populations.

Similarly, in rural areas, one might expect a lack of broadband availability – in other words, the supply or access side of the problem – to be the top barrier to broadband adoption. Yet, "[a]ccess to computers and the difficulty of using the technology are … barriers to widespread broadband use."[9] Even in rural areas, only 19 percent of residents who do not subscribe to broadband service attribute this fact to a lack of available service. In contrast, "[f]orty-two percent of rural residents without broadband at home say they don't subscribe because they don't need it, and 34 percent of these residents report lack of a computer as the reason they don't subscribe to broadband."[10]

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[6] *See* Comments of The City of New York, In the Matter of The American Recovery and Reinvestment Act of 2009 Broadband Initiatives, Docket No. 090309298-9299-1, at 3-4 (April 13, 2009).
[7] *Id*.
[8] *Id*.
[9] *See* Cecilia Kang, Broadband's Cost Gives Non-Subscribers Pause, Poll Finds, Wash. Post, at D3 (Jan. 22, 2009).
[10] Connected Nation, Consumer Insights to America's Broadband Challenge (Oct. 13, 2008), available at http://connectednation.com/research/publications/Consumer%20Insights%20Broadband%20Challenge_2008%2010%2013.pdf (last visited June 3, 2009).

The Pew Internet and American Life Project ("Pew") also found that 33 percent of non-users cite "Not interested in getting online" as the principal reason for non-use, whereas only 13 percent cite "Can't get access."[11]

Given these demand-side barriers to broadband adoption, the Commission's National Broadband Plan must address not only deployment but also the stimulation of demand, and its demand-oriented policies must ensure access to computers and similar equipment in addition to reducing the recurring costs of broadband use. As Verizon has noted,[12] in rural and non-rural areas alike, "the Commission should work with other policymakers and stakeholders to address demand-side factors that inhibit consumer subscription to broadband services, including computer literacy, computer ownership, or other factors that prevent people from recognizing the relevance of broadband to their lives."[13] As Intel has argued, "we must solve the broadband demand issue in unserved and underserved communities in order to fully address the ultimate goal — increasing broadband adoption in these digitally-deprived areas."[14]

TIA supports the extension of the existing Lifeline and Link-Up programs to subsidize broadband Internet access services for low-income Americans. These Americans are among the most likely to lack access to high-speed communications services. The Commission has before it two petitions seeking to extend these programs (which now subsidize low-income users' voice service subscription and set-up costs) to broadband service.[15] TIA supports these petitions, and

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[11] John B. Horrigan, *Obama's Online Opportunities: If you build it, will they log on?* available at http://www.pewinternet.org/Reports/2009/Stimulating-Broadband-If-Obama-builds-it-will-they-log-on.aspx (last visited June 3, 2009).

[12] *See* Comments of Verizon and Verizon Wireless on Report on Rural Broadband Strategy, GN Docket No. 09-29 (filed March 25, 2009).

[13] *Id*.

[14] *See* Comments of Intel Corporation, In the Matter of The American Recovery and Reinvestment Act of 2009 Broadband Initiatives, Docket No. 090309298-9299-1, at 11 (April 13, 2009).

[15] *See* Petition of Computer and Communications Industry Association for Rulemaking to Enable Low-Income Consumers to Access Broadband Through the Universal Service Lifeline and Link-Up Program (filed Oct. 7, 2008); Petition of TracFone Wireless, Inc. for Waiver, CC Docket No. 96-45 (filed May 4, 2009).

urges the Commission to act quickly to bring the benefits of broadband to this underserved community. The decision to open low-income support for broadband service can play a key role in stimulating demand, remediating the factors cited by Pew and others as most significant in a consumer's decision not to adopt broadband service.[16]

In order to achieve 100 percent broadband adoption in the U.S., the government must carefully calibrate its National Broadband Plan to ensure both ubiquitous broadband deployment *and* ubiquitous personal computer ownership for those in unserved and underserved areas. A failure to coordinate broadband deployment and adoption could result in the construction of broadband "networks to nowhere." As Connected Nation aptly stated, "the ultimate measure of success and accountability for [government broadband funding] will come down to whether or not people *use* broadband once the pipes and towers are built."[17]

3. Providers must remain free to employ reasonable network management techniques.

TIA supports an approach to nondiscrimination and interconnection that is competitive and encourages efficient use of broadband networks. To this end, TIA believes that the Commission should continue to abide by the principles set forth in its *Internet Policy Statement*.[18] TIA has supported those principles for years, both as a member of the High Tech Broadband Coalition ("HTBC") and on its own.[19] The *Policy Statement* has played a central role in the development of the broadband ecosystem over the past four years. Its general and flexible

[16] *See supra* at p. 8-9.

[17] Comments of Connected Nation, In the Matter of The American Recovery and Reinvestment Act of 2009 Broadband Initiatives, Docket No. 090309298-9299-1, at 7 (April 13, 2009) (emphasis added) ("Connected Nation Recovery Act Comments").

[18] *See Appropriate Framework for Broadband Access to the Internet over Wireline Facilities*, Policy Statement, 20 FCC Rcd 14986 (2005) ("*Internet Policy Statement*").

[19] *See* Comments of the Telecommunications Industry Association, WC Docket No. 07-52 *et al.*, (filed Feb. 13, 2008). *See, also*, Letter from High Tech Broadband Coalition to Kevin J. Martin, Chairman, Federal Communications Commission, CS Docket No. 02-52 *et al.* (filed Aug. 2, 2005).

principles have promoted self-regulation by providers, enabled customers to make informed market decisions, and driven investment in next-generation broadband networks.

The *Policy Statement*'s flexible approach to network management has played a central role in ensuring the online interests of consumers. In recent years, consumer demand for bandwidth-intensive applications such as VoIP, audio and video streaming, and peer-to-peer ("P2P") file-sharing has revolutionized Internet usage patterns. Moreover, while demands on the network are increasing, usage is also shifting toward applications that are far less tolerant of "latency" and "jitter."[20] Modern network management techniques offer consumers a path to a high-quality broadband experience in light of these rising forces. Even under ideal circumstances, delivery of packets over the "best-efforts" Internet will often entail degrees of latency and jitter that are incompatible with the needs of contemporary users. Faced with sharply rising capacity demand, however, best-efforts service can stray far even from this flawed ideal.

By managing traffic, Internet access providers can ensure that jitter- and latency-sensitive traffic, as well as traffic designed to enhance essential services such as health care and public safety, is assured passage through the network in a manner consistent with user needs and expectations. Moreover, the tools used to effectuate such management are always evolving, because the relationship between capacity and demand is always fluctuating.[21] The *Policy Statement* has permitted broadband providers to experiment, modifying management techniques to best suit network and user needs at any given time while ensuring that market forces and regulatory oversight prevent abuse.

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[20] Generally, "latency" refers to the amount of time it takes a packetized communication to traverse the network, and "jitter" refers to a phenomenon whereby the degree of latency changes during the course of a communication, such that packets arrive out of (chronological) order.

[21] Increased network demand is not the only legitimate justification for reasonable network management. Subscribers also expect network operators to block an assortment of harmful or otherwise undesirable content, including spam, spyware, viruses, and (in the case of ISP-managed parental controls) indecent or violent materials.

Given the benefits consumers have enjoyed under the Internet Policy Statement, the Commission should exercise great care in modifying the legal requirements applicable to broadband Internet access. In particular, bright-line prescriptive rules permitting and/or prohibiting specific conduct would "lock in" current network management assumptions, and would likely diminish consumer welfare. Instead, TIA urges the Commission to continue to employ a flexible case-by-case approach that gives due consideration to the benefits of a particular management practice. In the *Comcast Order*, the Commission "decline[d] to adopt prophylactic rules," citing its intent "to adjudicate disputes regarding federal Internet policy on a case-by-case basis."[22] The Commission noted that the case-by-case approach was most consistent with "federal policy advocat[ing] the preservation of the 'vibrant and competitive free market' for Internet and interactive computer services."[23] Then-Commissioner Copps explained that he "ha[d] long advocated … a case-by-case analysis of the facts in particular cases," and Commissioner Jonathan Adelstein applauded the "flexibility" afforded by the FCC's "case-by-case approach."[24] TIA respectfully urges the Commission to maintain this commitment to case-by-case decision-making with regard to network management.

To the extent the Commission seeks to adopt rules respecting network management, it should consider the adoption of robust disclosure requirements. Broadband Internet access consumers must have meaningful information regarding aspects of their service plan, including upstream and downstream throughput speeds, bandwidth usage limitations, the use of technologies designed to block spam, viruses, or other content deemed to be harmful, and any other limitations associated with a particular service plan. The provision of such meaningful

[22] *Formal Complaint of Free Press and Public Knowledge Against Comcast Corporation for Secretly Degrading Peer-to-Peer Applications*, 23 FCC Rcd at13045-46 ¶¶ 29-30 (2008).
[23] *Id.* at 13046 ¶ 32.
[24] *Id.*, Statement of Commissioner Michael J. Copps; *id.*, Statement of Commissioner Jonathan S. Adelstein.

information regarding broadband service plans will allow consumers to make informed decisions among competing providers and will enable the Commission to rely principally on competition and consumer choice, rather than prescriptive regulation, to address claims of misconduct.[25]

4. Generally applicable laws and competition among providers best protect consumer interests.

The Commission should approach the adoption of special broadband "consumer protection" mandates with great care. The Commission is now considering the adoption of prophylactic rules imposing requirements relating to consumer privacy, slamming, truth-in-billing, network outage reporting, discontinuance, and rate averaging to broadband Internet access services.[26] There are compelling reasons to believe that such mandates are unnecessary at this time. Broadband Internet access networks are already subject to a broad array of generally applicable consumer-protection laws that likely obviate the need for Commission-administered regulation. Because the Commission has classified broadband Internet access services as "information services" rather than "telecommunications services," broadband providers are not "common carriers," and therefore *are* subject to the jurisdiction of the Federal Trade Commission ("FTC").[27] Federal law directs the FTC to prevent "unfair or deceptive acts or practices in or affecting commerce …."[28] Moreover, while federal law generally preempts state regulation of broadband, broadband consumers are also protected by state laws of general applicability prohibiting unfair or deceptive trade practices. These federal and state laws, in concert with the pressures of competition in an increasingly crowded broadband market, have ably safeguarded consumer interests, and will likely continue to do so.

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[25] *See, e.g.*, Reply Comments of the Telecommunications Industry Association, WC Docket No. 07-52 *et al.*, (filed Feb. 28, 2008).

[26] *See Appropriate Framework for Broadband Access to the Internet over Wireline Facilities*, Report and Order and Notice of Proposed Rulemaking, 20 FCC Rcd 14853 (2005).

[27] *See* 15 U.S.C. § 45(a) (describing extent of FTC jurisdiction).

[28] *Id.*

In short, TIA strongly cautions the Commission against imposing a broad panoply of Title II regulations on broadband services. Such regulations, imposed absent any compelling demonstration of need, will inhibit investment, innovation and competition among broadband platforms. Instead, the Commission should remain vigilant, and should act only in the face of demonstrable consumer harm that cannot be addressed by the market or by existing legal structures.

5. Sound policymaking must be based on detailed, granular data and maps tracking broadband deployment and adoption.

Expansion and enhancement of the Commission's data-collection and mapping efforts will critically advance its broadband policies. By collecting, aggregating and (consistent with confidentiality interests) publicizing detailed and granular information regarding the extent and nature of broadband availability and use, the Commission can inform private-sector decision-making, as well as state and federal policy-making efforts. The Recovery Act directs the National Telecommunications and Information Administration ("NTIA") to "develop and maintain a comprehensive nationwide inventory map of existing broadband service capability and availability in the United States" over two years.[29] TIA strongly urges the Commission – whether alone or in concert with NTIA – to pursue a more aggressive schedule with respect to mapping.[30] A timely mapping tool can significantly inform and help accelerate the efforts of Commission, NTIA, and RUS to drive broadband deployment and adoption in rural and underserved areas.[31]

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[29] Recovery Act at § 6001(l).

[30] *See* Comments of the Telecommunications Industry Association, GN Docket No. 09-29 (filed March 25, 2009).

[31] Of course, broadband data collection is not the duty of the FCC alone. The Broadband Data Improvement Act ("BDIA") also tasks several other federal agencies with related responsibilities. For instance, the Commission will assist the Census Bureau with the formulation of a question for the American Community Survey regarding Internet subscription and computer ownership. *See* Broadband Data Improvement Act of 2008, Pub. L. No. 110-385, 122 Stat. 4096 (2008). Implementation of these new census questions regarding Internet subscription and computer ownership is essential to any targeted broadband policy.

However it is collected, detailed information regarding broadband availability and use in America that must complement the Commission's policies going forward. TIA urges the Commission to establish specific subscribership and other objective measurements to meet the goal of ensuring that all Americans have access to affordable high-quality broadband. As stated above, "the ultimate measure of success and accountability for [government broadband funding] will come down to whether or not people *use* broadband once the pipes and towers are built." [32] Increasing consumer use – *i.e.,* broadband penetration – is reflected in subscribership numbers.

Therefore, the Commission should use the data it collects on a regular basis to create and maintain a detailed broadband inventory map denoting not only broadband penetration but also available speeds, access to mobile service, applicable broadband subscribership rates and, where applicable, the reasons cited for lack of adoption. The FCC's map should also differentiate between different types of users – for example, it should distinguish among enterprises, governmental users, residential consumers, health care providers, schools, and so forth.

Given the central importance of collecting data that accurately depicts distinctions in the broadband access available to Americans, TIA also recommends that the Commission not limit itself to one narrow and relatively arbitrary definition of "advanced telecommunications capability," nor limit the other components of its review to considerations based on such a definition. Instead, the Commission should recognize the important role that all technologies play in our broadband market, and the capabilities they promote, by collecting and considering data across this broad range of offerings. As Congress recognized when it enacted the 1996 Act, the definition of "advanced telecommunications capability" must evolve over time.[33]

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[32] Connected Nation Recovery Act Comments at 7 (emphasis added).

[33] *See* 47 U.S.C. § 157 nt. ("The term 'advanced telecommunications capability' is defined, without regard to any transmission media or technology, as high-speed, switched, broadband telecommunications capability that enables

The terms "advanced telecommunications," "broadband," and "high-speed Internet" should not be unified and should be applied based on their broadest respective definitions.[34] For example, while broadband may be applied to enable high-speed Internet, broadband may also provide access to telemedicine, homeland security, video systems, etc. The Commission should, of course, continue to encourage the deployment of all tiers of broadband, and should especially promote the deployment of faster services. As speeds increase, the Commission should continually reassess these tiers and revise them as necessary with changes in broadband applications. The Commission also should recognize that the applications and bandwidth required with mobile solutions may be different than those that are fixed and business- and home-based. But even as it adjusts its sights higher, the Commission should maintain its commitment to the tiered approach to data-collection adopted in its *Form 477 Order*,[35] and should continue to collect data concerning high-speed offerings of all types.[36] Additionally, broadband "speeds" evolve continually with the needs of the American people. For example, in the 1990's, text based e-mail and static-picture based web surfing were considered "high end" broadband applications; however, today, many American households are now pushing the

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users to originate and receive high-quality voice, data, graphics, and video telecommunications using any technology.").

[34] *See* Broadband NOI at ¶ 16.

[35] *See Development of Nationwide Broadband Data to Evaluate Reasonable and Timely Deployment of Advanced Services to All Americans, Improvement of Wireless Broadband Subscribership Data, and Development of Data on Interconnected Voice over Internet Protocol (VoIP) Subscribership*, Report and Order and Further Notice of Proposed Rulemaking, 23 FCC Rcd 9691 (2008) ("*Form 477 Order*").

[36] Any effort to define broadband by speed for purposes of broadband reporting should be done with considerable forethought. The definition of "speed" is crucial and should not be based solely on the maximum potential data rate of the last mile technology. Instead, speed should be defined by measuring the overall network infrastructure performance from last mile to the service termination point or the internet access peering point. The middle mile and long haul infrastructures are critical to a successful broadband deployment.

broadband limits through HD video applications, making older definitions of broadband obsolete.[37]

Finally, the Commission should ensure that its efforts to track broadband availability and use are not structured in a way that directly or indirectly values one aspect of service (*i.e.*, speed or mobility) without considering all aspects of the service in concert. Technologies should be distinguished by capability (*e.g.*, mobility), capacity and ability to address geographies. The direct comparison of wireline and wireless may prove quite difficult. Different broadband networks offer different capabilities, and the expectations of users will vary depending on the context. To truly address the broadband needs across the country, *both* mobile and fixed technologies play a critical role. The Commission's policies should reflect the variations in customer demand and should seek to ensure that users have access to the services they need at any given time.

6. Investment and adoption can best be achieved through an exclusively federal regulatory regime.

Finally, the Commission can also stimulate broadband investment, innovation, and deployment of next-generation networks by ensuring that providers of broadand offerings and IP-enabled services are subject to an exclusively federal regulatory regime. As the Commission has recognized on numerous occasions, broadband Internet access offerings are inherently interstate in nature.[38] So too are IP-based offerings such as interconnected voice over Internet

[37] Other countries also are constantly updating their definitions of speed as technology improves. The Australian government recently redefined broadband to be 20 Mbps for mobile and 100 Mbps for fixed broadband in an effort to improve their country's broadband capabilities as these technologies are deployed throughout Australia. Australian Government, Ministry of Broadband, Communications, and the Digital Economy, "National Broadband Network Policy," http://www.dbcde.gov.au/__data/assets/pdf_file/0005/110012/National_Broadband_Network_policy_brochure.pdf

[38] *See Appropriate Regulatory Treatment for Broadband Access to the Internet Over Wireless Networks*, Declaratory Ruling, 22 FCC Rcd 5901, 5905 (2007).

protocol, which cannot feasibly be partitioned into intra- and inter-state traffic streams.[39] Consequently, the Commission is lawfully entitled to bring these services within an exclusively federal regulatory framework.

The Commission should exercise this authority. Investment in and deployment of next-generation offerings is severely hampered by the threat of overlapping and often inconsistent regulation by multiple state jurisdictions. These problems are often especially severe for wireless and satellite offerings, which are frequently offered on a regional or national basis. By employing its authority to foreclose patchwork state regulation, the Commission can ensure that providers are subject to a single, consistent regime that will protect American consumers while fostering certainty and promoting deployment. The more regulatory certainty vis à vis investment and deployment, the more likely it is that providers can offer their services at affordable rates that will enable increased broadband adoption by consumers.

B. The Commission Should Continue To Adopt Forward-Looking Spectrum Management Polices and Allocate Additional Spectrum for Advanced Wireless Services on a Technology-Neutral Basis.

The U.S. must be a world leader in spectrum policy in order to ensure that all Americans have access to the most advanced mobile broadband services. The FCC's spectrum management policies over the last decade have resulted in an American wireless market that is the envy of the world.[40] As it develops a National Broadband Plan, the Commission (and all of government) should continue to adopt forward-looking spectrum management polices that promote and encourage this highly competitive wireless marketplace.

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[39] *See Vonage Holdings Corporation Petition for Declaratory Ruling Concerning an Order of the Minnesota Public Utilities Commission*, Memorandum Opinion and Order, 19 FCC Rcd 22404 (2004).

[40] *See Annual Report and Analysis of Competitive Market Conditions With Respect to Commercial Mobile Services*, Thirteenth Report, DA No. 09-54 (rel. Jan. 16, 2009).

1. The Commission must work with NTIA and others to identify additional spectrum resources and to harmonize spectrum allocations.

New mobile broadband carriers and services cannot emerge without additional spectrum resources. Thus, it is vital that the Commission assess, through a spectrum inventory, what non-government spectrum bands are particularly suitable for deployment of commercial broadband services.[41] While the Commission should be mindful of existing operations, particularly in those bands below 3 GHz that are used intensively for Commercial Mobile Radio Service ("CMRS") operations,[42] it should also balance these existing services against the public interest benefits that would result from the deployment of enhanced broadband services flowing from the availability of new spectrum. Concurrently, the Commission should work with federal agencies to identify government spectrum that can be made available for commercial broadband services. A true "spectrum census" should cover both government and non-government spectrum and should have the broad goal of accurately assessing the level of spectrum utilization across all bands and services.

The Commission should also work with the State Department, NTIA and others in government to globally harmonize spectrum allocation at the International Telecommunications Union ("ITU"). This goal is particularly appropriate as the Commission has convened the Informal Working Groups of the Advisory Committee for the 2011 World Radiocommunication Conference ("WRC-11") in advance of the 2011 conference. Globally harmonized spectrum allocations dramatically increase the reach of broadband services, facilitate roaming, reduce manufacturing and end-user costs, and provide a greater degree of regulatory certainty as to the future value of investments in wireless broadband technology.

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[41] Broadband NOI at ¶ 44.

[42] *See* discussion of growth of wireless broadband services in CMRS industry, *infra* at p. 20-21.

2. A market-based regulatory approach to wireless services should be the cornerstone of the National Broadband Plan.

Over the past three Presidential administrations, the Commission has created a regulatory framework for commercial wireless services which recognizes that competition thrives in a market-driven environment. The Commission's shift to a competition-based regulatory structure has resulted in the development of a variety of wireless technologies, platforms, service, applications, and devices available to American consumers. For example, it is forecast that, as consumers increase demand for new wireless broadband applications, annual revenues in the United States from wireless devices will increase by $4 billion in 2011, compared to 2007.[43] Sales of smartphones in the United States, most of which provide wireless broadband Internet access, should comprise over 30 percent of the mobile device sales in 2011 – more than a 100 percent increase over 2007.[44]

Additionally, current FCC policies have encouraged the wireless industry to invest tens of billions of dollars in their networks, and carriers every day are expanding their wireless broadband footprints to new areas of the country. Consumers have increased their use of broadband wireless devices to search the Internet by 68 percent over the past year.[45] Consistently, industry revenues from wireless broadband data application services in the United States are forecast to grow by over 30 percent from 2008 to 2011.[46] Further, the growing consumer demand for wireless broadband will drive the need for wireless infrastructure

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[43] *See* 2008 TIA Market Review & Forecast ("TIA Market Review") at 172, Figure IV-1.5; available at: http://www.tiaonline.org/business/research/mrf/.

[44] *See id*. at 173.

[45] *See* Press Release, comScore, "comScore M:Metrics Reports Mobile Search Grew 68 Percent in the U.S. and 38 Percent in Western Europe During Past Year," Sept. 18, 2008, available at: http://www.comscore.com/press/release.asp?press=2469 (last visited June 3, 2009).

[46] *See* TIA Market Review at 168, Table IV-1.2.

development; the number of wireless base stations is predicted to grow from 3.6 million in 2007 to 5.2 million in 2013.[47]

In a broadband age, the Commission should continue to implement flexible policies that encourage wireless carriers to invest in broadband networks. In particular, TIA urges the Commission to be cautious in straying from its successful wireless regulatory approach.[48] Continued growth in the supply and demand for wireless broadband services could turn on a stable regulatory environment during these difficult economic times. Such stability will be critical to promoting continued rapid growth in the wireless device market. Given the track record and expected growth in the wireless sector documented above and the unpredictability of the current economic environment, the Commission should be reluctant to impose significant new requirements on wireless providers. Additional obligations could potentially limit carrier flexibility to respond to technical evolutions and to maximize the utility of existing allocations for consumer demand.[49] Neither of these outcomes would serve the public interest.

Moreover, the public and economic benefits of the growth outlined above could be significantly impaired by an uncertain regulatory environment. For example, if local governments continue to prevent the efficient siting of wireless facilities or collocation on an existing facility – core elements of the delivery of wireless broadband services – the growing market demand for these services will not be met; the ICT industry's deployment of wireless broadband products will slow; and the FCC's goal of swift broadband deployment could be

[47] *See* Press Release, ABI Research, "Network Infrastructure Spending Positions Carriers for 4G Services But Proves Competitive for Vendors," Sept. 15, 2008, available at: http://www.abiresearch.com/press/1235-Network+Infrastructure+Spending+Positions+Carriers+for+4G+Services+But+Proves+Competitive+for+Vendors (last visited June 3, 2009).

[48] *See* Broadband NOI at ¶ 43.

[49] *See* Letter from Danielle Coffey, Vice President, Telecommunications Industry Association, to Marlene H. Dortch, Secretary, Federal Communications Commission, RM-11498, at 1 (filed Dec. 1, 2008).

frustrated.[50] The Commission should ensure that the important federal goal of ubiquitous broadband deployment is not affected by unnecessary delays or restrictive local policies.

C. A National Broadband Plan Should Provide Broadband Communications to All Americans, Including Consumers in Low Income and Rural Areas and Those with Disabilities.

It is critical that a National Broadband Plan focus on extending broadband services to all Americans no matter where they live, how much money they make, what language they speak, or what challenges they may face in life. For example, the recently released Report on a Rural Broadband Strategy ("Rural Broadband Report") rightly noted that the Internet has become "less and less a novelty and more and more of a necessity" and emphasized how important broadband is to improving the quality of education, health care and public safety in our daily lives.[51] Similarly, the report underscored the views – shared by TIA – that "ensuring that all Americans, including those in rural areas, have access to [ubiquitous and affordable broadband] services will help to improve America's economy, its ability to compete internationally, and its unity as a nation."[52]

The Rural Broadband Report highlighted the many challenges in driving broadband deployment and adoption in rural America[53] and offered a number of thoughtful suggestions to improve broadband deployment and adoption efforts in these areas. Recommended actions ranged from (1) taking steps in several Universal Service Fund proceedings to re-focus on broadband and (2) looking carefully at the availability and subscribership of broadband at typical

[50] *See* Comments of the Telecommunications Industry Association, WT Docket No. 08-165 (filed Sept. 26, 2008).
[51] Bringing Broadband to Rural America; Report on a Rural Broadband Strategy, Michael J. Copps, Acting Chairman, Federal Communications Commission at ¶ 15 (May 22, 2009).
[52] *Id.*
[53] *See id.* at ¶¶ 77-87. Discussing the technological considerations in deploying broadband to rural America including factors such as latency; scalability; weather and environmental conditions; survivability, redundancy, and security; distance and topography; maintenance and repair; and resource contention and micro congestion.

"anchor institutions," such as schools, libraries and health institutions.[54] In issuing the Rural Broadband Report, Acting Chairman Copps rightly highlighted the important role of the private sector in developing a successful National Broadband Plan: "We must marry the dynamic innovations and flexibility of the private sector with the policy vision of the public sector to create a model of how government and industry can partner to ensure ubiquitous broadband access."[55] In this spirit, TIA below discusses ways to extend broadband's reach, not only to rural Americans but also to those who lack access for a host of other reasons.

1. Reform of the Universal Service Fund and additional government subsidies should play a key role in the National Broadband Plan.

The Commission's Broadband Plan must address necessary and fundamental shifts in the structure of the universal service fund ("USF"). TIA proposes modifications to three of the four existing universal service mechanisms to promote broadband deployment and adoption, as well as additional investment along the lines envisioned by the Recovery Act.

High-Cost Fund. TIA continues to urge the Commission to transition high-cost USF support toward next-generation broadband networks, to ensure that the benefits of such networks reach all Americans regardless of where they live and work. Consistent with the recommendation of the Federal-State Joint Board on Universal Service,[56] the development of a fund aimed at subsidizing the build-out of next-generation wireless and wireline broadband networks (the "Broadband Fund") will promote investment in and deployment of next-generation networks, applications, and devices across the United States, particularly in rural America. The Broadband Fund should be technologically and competitively neutral, and should ensure that existing support for narrowband service does not decrease providers' incentives to deploy next-

[54] *See id.* at ¶¶ 126-138 and 89.
[55] *Id*. at ¶ 7
[56] *See High-Cost Universal Support*, Recommended Decision, 22 FCC Rcd 20477 (2007).

generation broadband offerings. The Broadband Fund should grow over time, targeting support to providers seeking to deploy and operate next-generation broadband networks in unserved or underserved areas.

Moreover, high-cost Broadband support should extend beyond initial facilities-based deployment in unserved areas, covering deployment in areas with little or no broadband service and the continued operation of existing broadband service. As the Commission recognized in the *Form 477 Order*, the range of speeds referred to as "broadband" is very wide, from the 200 Kbps speeds referred to in that Order as "First Generation Data," to the more aspirational "greater than 100 Mbps" speeds now classified as "Broadband Tier 7."[57] A regime that withdraws support as soon as an area is served at 200 Kbps – or at any pre-determined static level – deprives rural consumers of the "evolving level of telecommunications service" that Congress viewed as the very definition of "universal service."[58] Congress declared in section 254 of the Act that consumers in high-cost locales should receive service "reasonably comparable to those services provided in urban areas," at rates "that are reasonably comparable to rates charged for similar services in urban areas." The Commission should fulfill this statutory obligation by using the universal service fund to ensure that residents in rural, insular, or other high-cost locales enjoy broadband access and adoption rates comparable to service available elsewhere.

Rural Health Care Fund. TIA reiterates its call for the Commission to expand and make permanent the Rural Health Care Pilot Program ("Pilot Program").[59] The Pilot Program promotes deployment of broadband infrastructure to rural health providers, brings critical health care opportunities to long-underserved communities and helps the long-underused rural health

[57] *See Form 477 Order*.
[58] 47 U.S.C. § 254 (c)(1).
[59] *See* Letter from Grant Seiffert, President, Telecommunications Industry Association, to Michael J. Copps, Chairman, Federal Communication Commission (Jan. 27, 2009).

care mechanism (the "Rural Health Care Program") to reach its full potential. But substantial sums of the fund are still left unused.

The Commission should take three specific actions for the Pilot Program. First, the Commission should immediately raise the current cap on funding available. At present, funding for the Pilot Program is capped at $139 million annually, which is well below the $400 million-dollar annual cap applicable to the Rural Health Care Program. Even accounting for the Pilot Program, the Rural Health Care Program remains underutilized, meaning that monies allocated to the program continue to go unused. As TIA previously has documented, the Pilot Program is starting to show progress with a number of successful programs in states throughout the country, including West Virginia, California, Minnesota, South Dakota, North Dakota, Iowa, Minnesota, Nebraska, Wyoming, and Michigan. Expanding the program to the full $400 million will allow for additional funding to benefit rural health care efforts nationwide.

Second, TIA urges the Commission to expand the Pilot Program to include remote health care monitoring that will extend services to, and enable independence at home for, those living with chronic disease, the elderly, people living with disabilities, and homebound patients. The metrics of patient satisfaction, comfort, and quality rise while costs are significantly lowered by patients who have adopted remote monitoring, as evidenced by a recent study of Veterans Administration patients.[60] The possibilities for expanding care to unserved and underserved populations through mobile phones, laptops, and sensory devices are limitless once the market is developed for these innovations and they are available to mobile health care workers, such as visiting nurses, who are a vital part of the health care system in rural America. For this reason, TIA believes that Commission should allow health care providers to use Pilot Program funds to

[60] *See* Care Coordination/Home Telehealth: the systematic implementation of health informatics, home telehealth, and disease management to support the care of veteran patients with chronic conditions, Journal of Telemedicine and eHealth (December 2008).

purchase broadband-connected devices that improve productivity and service quality to homebound patients.

Third, TIA asks the Commission to adopt the Pilot Program (subject to the expansion described above) on a permanent basis. A permanent program can be an important component of a rural broadband strategy, as it will target an important constituency in rural America and serve as an important catalyst for future broadband developments. This action will direct funding in the near term to critical infrastructure deployment projects; improve our nation's broadband communications network; reduce health care costs while improving care; and even mitigate reliance on fossil fuels by those who must now travel substantial distances for adequate medical care.

Low-Income Fund. As noted above, TIA also supports the extension of the existing Lifeline and Link-Up programs to subsidize broadband Internet access services and equipment for low-income Americans.[61] This extension should include subsidization for low-income Americans of the recurring costs of broadband subscriptions and the fixed cost of a laptop, computer equipment, or other broadband devices. Indeed, the creation of a compelling value proposition for first time users is critical, as they are less likely to have the resources to buy adequate hardware to connect to the Internet or to purchase a subscription for broadband service from a provider. Our National Broadband Policy needs to address barriers like these which are still preventing too many Americans from embracing broadband in their lives.

Additional Federal Subsidies. Government policies in a wide array of areas should consider how best to promote broadband deployment and adoption. TIA has long called for the allocation of federal funds to drive broadband communications and to promote the development

[61] *See supra* Section 1.A.2.

of pro-competitive communications network technologies. The broadband grant programs included in the Recovery Act have been a major step in advancing these two important goals. Since the passage of the Recovery Act, policy makers have wisely observed that the Recovery Act broadband grants actually represent only a "down-payment" on President Obama's communications agenda and that there will be a continued effort to ensure that all Americans have access to broadband and the skills to use it.[62] TIA applauds this commitment and urges the Commission to push for the government to continue to play a substantial role in funding initiatives that will drive innovation and investment in the communications marketplace.[63] The Commission should also call for federal funding of an interoperable broadband public safety network in the event the Commission decides not to pursue a public private partnership through an auction.[64] Direct grant programs are critical to increase broadband use in all parts of the nation without creating the need for an ongoing service subsidy.

[62] *See, e.g.*, Joint Press Release: Vilsack, Copps and Wade Kick Off American Recovery and Reinvestment Act's Broadband Initiative (rel. Mar. 10, 2009). "We have to view the $7.2 billion broadband investment in the stimulus package as a down payment on a national strategy to deliver broadband to rural Americans who can't access it and urban Americans who can't afford it," Senator John Kerry (D-MA) (April 1, 2009) available at http://www.stimulatingbroadband.com/2009/04/kerry-on-broadband-stimulus-down.html (last visited June 3, 2009). "Congress recognized that this funding initiative, though substantial, was still just a down payment on the broadband needs of the country, and that even after this money has been invested, many Americans, including those residing in rural areas, will continue to lack access to critical broadband services." Rural Broadband Report at ¶ 4.

[63] *See* remarks of Susan Crawford, Special Assistant to President Barack Obama at http://www.mediaaccess.org/mapping-change/susan-crawford (April 29, 2009). "As a very first step, a down-payment, towards this goal, the American Recovery Act calls for $7.2 billion to be given out in grants and loans …. This will not fill the broadband gap in this country, and so the FCC has been tasked with developing a national broadband plan over the coming year. We have needed a broadband plan for years, and now we are finally going to get one. We see the broadband stimulus program as part of a continuum, a seamless single silver thread … that will make forward-looking investments, that will provide metrics and proofs of concept that will be useful to the eventual FCC-led plan."

[64] *See, infra* discussion at Section I.F.

2. A voluntary Industry-Government partnership will best bring broadband to hard-to-reach Americans, including those with disabilities.

Among their numerous lines of business, TIA member companies design, produce, and deploy a wide variety of devices with the goal of making technology accessible to all Americans – an objective that is shared by the Commission.[65] TIA and others in industry have worked voluntarily and proactively with the disability community on a number of accessibility initiatives, outlined below, to achieve this goal. TIA looks forward to making continued progress on broadband accessibility issues and in working with the Commission to ensure that all consumers can be connected in the broadband age.

TIA supports the development of industry equipment standards through collaboration with the disability community.[66] Government has an important role in facilitating these important collaborative efforts and functioning as a convener of public-private discussions as appropriate. Voluntary standards allow industry to work with engineers and the disability community to address the complex technical issues associated with the development of standards without hampering innovation that benefits all consumers. As TIA highlighted earlier this year in a letter to then President-Elect Obama,[67] TIA members have engaged in a number of initiatives to promote accessibility, particularly by those living with disabilities:

- TIA-1083: As part of a collaborative effort with Gallaudet University, Etymotic Research and the Hearing Loss Association of America ("HLAA"), TIA organized and supported research to determine the cause of interference on digital cordless phones experienced by users with hearing aids. The result was TIA-1083, a standard that significantly reduces interference problems on digital cordless phones. All major cordless phone manufacturers have voluntarily committed to making their products 100 percent TIA-1083 compliant by 2010.

[65] *See* Public Notice, Consumer Advisory Committee - Announcement of Rechartering and Re-Appointment of Members and Chairperson, DA 08-2817 (rel. Dec. 30, 2008).

[66] Broadband NOI at ¶ 28.

[67] *See* Letter from Grant Seiffert, President, Telecommunications Industry Association, to The Honorable Barack Obama, President-Elect of the United States of America (Jan. 16, 2009).

Further, TIA-1083 is in the process of being updated so that it can be used with newer technologies, such as Wi-Fi® and Bluetooth®.

- C63.19: In 2009, TIA will continue to serve as an organizational member of the American National Standards Institute's Accredited Standards Committee 63 Committee that develops standards related to electromagnetic compatibility. This Committee developed and published C63.19, a standard that specifies hearing aid compatibility requirements for cell phones.

These standards are examples of how open, consensus-driven standards processes will contribute significantly to ensuring that new products and services are accessible to people with disabilities. Requiring industry approval of applicable publicly available technical standards will ensure that standards are developed and established by persons with the requisite technical expertise. TIA urges the Commission to follow this model as it considers how best to promote access to broadband services by persons living with disabilities.

3. Interagency, public-private symposia on accessibility issues will promote broadband solutions for all Americans.

TIA continually explores ways to collaborate with those in the public and private sectors on how to improve accessibility by all Americans. For example, TIA is working with other high-tech associations and the disability community to explore the possibility of developing an information clearinghouse of currently available accessibility technologies, to be maintained on an accessible website. The clearinghouse would act as a tool for consumers to assess which devices and features can be used to facilitate communications based on an individual's particular needs. Further, the clearinghouse would be a communications bridge between the disability community and industry. TIA urges the Commission to leverage collaborative efforts like this by establishing a series of meetings to discuss accessibility issues. Possibly under the auspices of the Consumer Advisory Committee, the Commission should bring together experts from all interested stakeholders – including government, academia, the public interest community, and

the private sector – to begin to tackle the important questions highlighted by the Commission in the Broadband NOI.

4. The National Broadband Plan should promote the continued expansion of broadband services to schools, libraries, universities, and health care providers.

While the U.S. has seen a successful push for broadband services in schools, libraries, universities, and health care providers over the last several years, it is paramount that a National Broadband Plan advocates for continued deployment efforts. For example, broadband services in schools and universities allow faculty and administration to communicate more effectively and efficiently with students and parents. At the same time, broadband enables a level of collaboration with other schools and universities on lesson plans and teaching techniques that can result in students who are better prepared for their next learning experience or entry into the work force. Greater emphasis on the deployment and adoption of broadband services in learning institutions also will help ensure that institutions in unserved and underserved areas receive at least the same subsidies as residents in these areas. By ensuring schools are funded, the community will benefit as broadband will enhance the learning experience for students in a way that they may not get at home.

Additionally, the continued focus on broadband expansion in schools, libraries and universities is a critical component for enabling students in rural communities to have opportunities to participate in higher education. According to Secretary of Agriculture Tom Vilsack, "Providing broadband access to rural communities will not only enhance farmers and ranchers' ability to market goods and enhance production, it will help residents in rural communities obtain needed medical care, gain access to higher education, and benefit from

resulting economic activity and job growth."[68] Further, the value of broadband service to health care providers, global health care, home health care, and critical access facilities that serve the most distressed of patients, is vital to savings lives through cutting-edge technologies. Broadband deployment in health care facilities has recently led to revolutionary developments in the medical field. Telemedicine can, if properly deployed and supported, enable doctors, clinicians, and first responders to view and send medical images and data from any location securely and quickly. This is of particular importance in rural and other areas that do not have access to cutting-edge health care. TIA urges that the Commission's National Broadband Plan plot a course for increased broadband access to educational institutions and health care providers that serve rural and urban patients.

D. The Commission Should Look at Foreign Markets to Inform its National Broadband Plan and Should Promote Open and Fair Market Access for Broadband Companies.

We live in a global economy, and the members of TIA are actively engaged in the development and distribution of broadband products throughout the world. The Commission rightly recognizes that it should look abroad as it considers developing a National Broadband Plan.[69] But as the Commission looks to promote broadband deployment and adoption domestically, it should also work with others in government to ensure that the U.S. not only has a National Broadband Plan to bring connectivity to all of its citizens but also an international broadband plan to advance the position of the U.S. broadband industry as the world's leader.

[68] W. David Gardner, FCC To Examine Rural Broadband Needs, InformationWeek, May 29, 2009, http://www.informationweek.com/news/services/data/showArticle.jhtml?articleID=217700852 (emphasis added).
[69] Broadband NOI at ¶ 31.

1. Lessons can be learned from international broadband strategies.

TIA encourages the Commission to take an expansive view of the broadband market, looking at various public policies that have not yet have been implemented in the United States, but that have been embraced in other nations.[70] The U.S. often lags behind the broadband penetration of other developed nations; governments of nations currently surpassing the United States in the OECD rankings are far more proactive in encouraging broadband adoption by stimulating demand for broadband services.[71] Further, these foreign governments have at times been more proactive in support of *private sector* innovation.

This is true in both mature and emerging markets. For example, under Australia's education tax rebate program, parents can claim a tax refund of up to $375 for each primary school child and $750 for each secondary school to cover school expenses such as laptops, home computers, printers, Internet access, and educational software.[72] Similarly, the Singapore government subsidizes the NEU PC Plus program, which offers new computers to students from low-income households and people with disabilities for less than 30 cents day, bundled with 3-years free broadband access and software.[73] Governments in emerging markets are supporting similar programs. For example, China – in conjunction with its plan to connect rural communities with affordable, high-quality broadband by 2010 – is offering a 13 percent rebate to subsidize the purchase of PCs in rural markets.[74] Under China's subsidy program, Lenovo "is

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[70] *See* Comments of the Telecommunications Industry Association, GN Docket No. 0745 (filed May 16, 2007).
[71] *See* TIA Industry Policy Playbook (2009) at 14.
[72] *See* "Investing in the future" *Penrith Press*, Apr. 15, 2009; "Education tax refund," *Centralian Advocate (Australia)*, Feb. 17, 2009.
[73] *See* NEU PC Plus Programme – Ensure Needy Students Have Equal Access to Infocomm, iDA Singapore available at http://www.ida.gov.sg/Programmes/20060419155649.aspx?getPagetype=34 (last visited June 3, 2009).
[74] *See* China's Rural Communities Present Opportunity for PC Vendors, Gartner, Feb. 6 2009, available at http://www.gartner.com/resources/165400/165448/chinas_rural_communities_pre_165448.pdf (last visited June 3, 2009).

aiming to … reach to 320,000 villages, benefiting 5 million rural households over the next three years. Lenovo will offer 15 customized personal computer models, including five laptops and an all-in-one desktop system. These will be priced between 2,500 yuan [approx. U.S. $366 USD] and 3,500 yuan [approx. U.S. $512] and come with various entertainment, educational and agri-business software programmes already installed."[75] These are just a handful of examples of countries that are far more proactive in encouraging broadband adoption by stimulating demand for broadband services.

The South Korean government also has been a leader in encouraging broadband infrastructure deployment through government initiatives, and has been equally focused on driving consumer demand (public and private sector) for broadband capabilities. For example, the government set and achieved the goal of educating 10 million South Koreans via the Internet.[76] Social policies such as online education can spur demand for next-generation broadband and lead to additional infrastructure investment necessary in response to such demand. The South Korean government also has established Information Education Centers at post offices and schools and operates mobile educational facilities that include PCs and instructors.[77] South Korea's government has invested in the private sector by promoting public sector use of broadband, supporting R&D, making infrastructure loans available, monitoring deployment and competitive offerings and making such information available to consumers.[78]

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[75] Bien Perez, "Lenovo leads push to tap countryside; PC giant jumps on subsidy scheme to boost sales South China," *South China Morning Post*, at Business p. 10, March 7, 2009.

[76] *See* Korea Ministry of Information and Communications, Broadband IT Korea, "Broadband Internet Service: Korea's Experience," NaeChan Lee, Ph.D, February 2002 ("Lee") at 8, found at http://eng.mic.go.kr/eng/index.jsp; See Asia/Pacific Research Center, Stanford University, "The Growth of Broadband Internet Connections in South Korea: Contributing Factors," by Kyounglim Yun, Heejin Lee, and SoHye Lim, September 2002 ("Yun") at 16, available at http://ksp.stanford.edu/publications/growth_of_broadband_internet_connections _in_south_korea_contributing_facto rs_the/.

[77] Yun at 8.

[78] Lee at 8; Yun at 10, 15-17. e-Japan included a host of programs intended to drive broadband deployment through government encouragement of broadband demand, including e-learning and digital arts and entertainment initiatives,

Similarly, the Japanese government has implemented national broadband policies, such as e-Japan and u-Japan, both of which have been instrumental in the deployment of next generation broadband networks in Japan. e-Japan was a national broadband strategy intended to strengthen Japan's role in the IT sector, which was determined to be lacking when broadband first emerged as a consumer service. Following the successful implementation of e-Japan, the Japanese government began to focus on ensuring the Japanese could access IT anywhere at anytime, in its new u-Japan (universal) initiative. This new policy focuses on encouraging wireline-wireless convergence through continued efforts to spur demand, such as e-government and e-commerce programs, making consumers more comfortable with broadband technology by promoting e-security, and promoting broadband as a solution to societal challenges (*e.g.*, aging, learning, and health care).[79]

Sweden was one of the first countries in Europe to develop a broadband policy. Its goal was to foster "an information society for all," and Sweden has largely succeeded in this goal. Today, 98 percent of Swedes have access to broadband at home.[80] The Swedish government achieved this level of penetration by providing generous subsidies for broadband infrastructure. Yet, nearly every dollar invested by the government was matched by other financiers like municipalities, operators, and EU funds.[81] In addition to funding infrastructure, the Swedish government addressed demand via digital literacy programs for small and medium-sized businesses, libraries, and schools. The government also provided a generous tax benefit for employees who use employer-supplied computers at home**.** The Commission and other governmental stakeholders should consider these international examples in contemplating

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with a particular focus on encouraging ecommerce and e-government as a means of driving broadband deployment. eJapan Strategy at http://www.kantei.go.jp/foreign/it/network/0122full_e.html.

[79] *See* u-Japan Strategy at http://www.soumu.go.jp/menu_02/ict/u-japan_en/index.html.

[80] *See* PTS at http://www.regeringen.se/content/1/c6/10/33/76/9da654ad.pdf.

[81] *Id*. Summary at 20.

American policy. With the passage of the Recovery Act and the requirement for a National Broadband Plan, our nation now has the chance to apply successful policies from around the world in developing a comprehensive national broadband policy that focuses on the social and economic elements of broadband deployment and adoption for all Americans.

2. The Government has an important role in promoting the American broadband business overseas.

The United States must not be outpaced by major trading partners in the deployment of cutting edge technologies. Our government must ensure that international trade in the ICT sector is liberalized. TIA has been and will continue to be an active partner in that effort – working with its member companies and with government to eliminate or reduce traditional market access barriers and technical barriers to trade. TIA's trade mission specifically seeks to promote bilateral free trade agreements that include substantive telecom chapters. On a regular basis, TIA has urged the U.S. government to ensure that overseas broadband markets are liberalized.[82]

In developing a National Broadband Plan, the Commission should urge Congress to recognize the value of promoting full, fair and open trade and competition in international markets. U.S. government-negotiated trade agreements benefit the U.S. broadband industry by establishing greater market access, assuring a rules-based and predictable business climate, and encouraging further bilateral investment, which in turn contributes to economic growth and stability both in the U.S. and around the world. Moreover, just as the Commission should embrace technological neutrality in developing a National Broadband Plan, the U.S. government

[82] *See* Letter from Nick Fetchko, Director for International and Government Affairs, Telecommunications Industry Association, to Peter Cowhey, Senior Advisor, USTR *et al*., regarding Republic of Korea's project to upgrade a governmental telecommunications network to Voice over Internet Protocol, and the concern that the project requires that the new network contain a domestic encryption standard that would advantage local Korean suppliers (March 3, 2009).

should also push for technical neutrality internationally to provide for full opportunity for TIA member companies in foreign markets.[83]

E. The Commission Should Support Policies Promoting Research and Development in the Communications Space.

The Commission should support other efforts to craft economic policies that favor deployment of ICT. In particular, TIA members believe that additional government-funded research needs to be directed towards network-focused research and development to solve some of the problems at the core of next generation networks.[84] Traditionally, the United States has been an international leader in communications research. However, there is growing competition worldwide. For instance, the European Union has, through its 7th Framework Programme ("FP7"), committed to spending 50.5 billion Euros for the period of 2007-2013 on research and development in a whole host of technology areas.[85] That amount dwarfs the current level of U.S. government investment. TIA's members were pleased that the recently enacted Recovery Act included $3.6 billion for research activities at the National Science Foundation ("NSF") and the National Institutes of Science & Technology ("NIST"), and that this funding meets and in some cases surpass the authorization levels for these agencies provided under the America COMPETES Act, which sought to double the funding for these agencies within ten years.[86]

Although NSF and NIST will be funded at record levels, more attention is warranted. The government should expand its efforts to receive input from industry as these agencies determine the research priorities for these funds, so that the limited funding available focuses on

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[83] *See* Letter from Grant Seiffert, President, Telecommunications Industry Association, to Robin Layton, Director, Office of Technology and E-Commerce, International Trade Administration, U.S. Department of Commerce, regarding the International Trade Administration's leadership in engaging with the government of Vietnam in regards to their draft telecommunications law (March 27, 2009).

[84] *See* Broadband NOI at ¶ 97.

[85] MAP-IT!: What is FP7?, http://www.map-it-med.eu/spip.php?article20 (last visited June 4, 2009).

[86] America COMPETES Act, Pub. L. No. 110-69 , 121 Stat. 572 (2007).

the basic research that will help drive U.S. efforts and improve U.S. competitiveness. TIA believes that increased collaboration with and participation by industry will help ensure that these funds are focused on the existing knowledge gaps so that the dollars invested in basic research will help further ongoing private research efforts. Finally, especially in light of the current economic climate, a sustained commitment to long-term research on the federal level is necessary to bolster the limited dollars currently being invested in research in the private sector. The Commission should acknowledge this challenge, and include in its National Broadband Plan a discussion of how the federal government should remain steadfast in its commitment to meeting the goals as set out by the America COMPETES Act.

F. The National Broadband Plan Should Promote the Development of a Broadband Interoperable Public Safety Network Capable of Protecting All Communities.

Understanding that broadband enables a universe of valuable services that enhance the standard of living and communications capabilities of Americans, the National Broadband Plan should recognize the potentially life-saving applications that broadband can bring to public safety. Every day, the men and women who comprise the public safety community provide a public good, often at risk to their own lives. The National Broadband Plan should prioritize the deployment of an advanced, interoperable public safety broadband network supporting converged communications services that offer federal, state and local public safety agencies state-of-the-art broadband voice, video, and data applications.

The National Broadband Plan should continue the Commission's ongoing efforts to facilitate interoperable wireless broadband solutions for the public safety community. Broadband technologies will enable first responders to utilize broadband technologies for critical applications such as exchanging health information with medical personnel at hospitals and mobile trauma units or monitoring high risk areas through real-time video surveillance. In turn,

broadband technologies that are *interoperable* will allow first responders and other public safety personnel to communicate seamlessly with each other using the most advanced wireless broadband voice, video, and data communications technologies. Just as importantly, the development and use of broadband technology to support public safety workers is essential in light of manmade and natural disasters that may strike our nation.[87]

An interoperable public safety network is within the country's grasp, and can be realized through effective spectrum policy and federal funding. To best promote interoperability, public safety agencies should (1) be encouraged to use widely-available, standardized commercial wireless technologies (within spectrum allocated for public safety services) even for mission-critical needs, (2) consider the benefits of including federal government users on the network, and (3) pursue operational rules that support the use of widely-available commercial technologies to the extent that they meet those needs.

Finally, the National Broadband Plan must also confront several outstanding issues involved in the open 700 MHz D Block proceeding. TIA has been an active participant in this proceeding and shares the Commission's overarching goal to expand and improve the communications capabilities of the public safety community.[88] TIA believes that creating a public private partnership to operate a broadband interoperable public safety network in the D Block is possible, once the interrelated technical needs of public safety and commercial carriers can be addressed.

The National Broadband Plan should, in the event the Commission determines that a shared network is not viable, provide alternative proposals, such as regional approaches, to

[87] *See* National Commission on Terrorist Attacks Upon the United States, 9/11 Commission Report, 300, 307, 315, 319 (2004); Independent Panel Reviewing the Impact of Hurricane Katrina on Communications Networks, *Report and Recommendations to the Federal Communications Commission* (June 12, 2006).
[88] *See* Comments of the Telecommunications Industry Association on Third Further Notice of Proposed Rulemaking, WT Docket No. 06-150 *et al*. (filed Oct. 31, 2008).

ensure that an interoperable broadband public safety network is deployed in the immediate future. For example, the Commission should call for federal funding of a nationwide interoperable public safety broadband communications network using spectrum in the 700 MHz band. A federally funded, nationwide, interoperable public safety broadband network will provide significant benefit to our Nation's first responders, while simultaneously investing in critical infrastructure as we rebuild the country's 21st Century economy. Nearly eight years after the terrorist attacks of September 11, 2001, and nearly four years after the devastation of Hurricanes Katrina and Rita, the Nation is no closer to realizing its vision. Put simply, the public interest is disserved each day that passes in which this spectrum is not put to use.

II. PLOTTING THE BROADBAND ROADMAP

The Commission has a unique chance to establish a transparent strategic National Broadband Plan to ensure that *all* Americans have access to affordable high-quality broadband. Commissioner Adelstein has wisely spoken of the need to "incorporate benchmarks, deployment timetables, and measureable thresholds" to help guide a national broadband strategy.[89] TIA urges the Commission to use the National Broadband Plan to put in place specific measurements by which to track the progress of the government's broadband efforts. The Commission should also commit to initiating and/or completing specific proceedings and convening key stakeholders to help move forward with many of the important initiatives outlined herein. For the plan to be most effective, it is critical that the Commission put in place an agenda that very clearly lays out steps for moving forward over the next three years. A detailed broadband roadmap will ensure

[89] Commissioner Jonathan S. Adelstein, Testimony before the US Senate Committee on Small Business and Entrepreneurship (Sept. 26, 2007).

that the private sector can begin developing data, planning for investments, and preparing for proceedings, meetings, and other initiatives outlined in the National Broadband Plan.[90]

TIA takes very seriously the Commission's charge to develop a National Broadband Plan. In this regard, attached is a preliminary roadmap for the Commission to consider as it implements the National Broadband Plan. This "TIA Roadmap" identifies initial steps the Commission can take to effectuate many of the important policy goals that TIA has outlined in these Comments. From resolving the D Block proceeding to extending and making permanent the RHCPP to convening a committee on broadband access by the disability community, TIA has outlined a number of objectives for the Commission to use as guideposts in moving forward with the National Broadband Plan.[91] Based on Comments filed in this proceeding, TIA will submit a detailed roadmap with its Reply Comments that will propose more specific action items for the Commission to consider along with suggested timelines for execution.

In conclusion, TIA's members are committed to working with the Commission to deploy high-quality broadband services and enable consumer adoption of such services that "can help to restore America's economic well-being and open the doors of opportunity for more Americans, no matter who they are, where they live, or the particular circumstances of their lives."[92]

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[90] *See, e.g.*, Phil J. Weiser, FCC Reform and the Future of Telecommunications Policy at 13 (2009). "Going forward, the FCC has the opportunity to set a strategic agenda and commit to procedures that ensure a high level of transparency. On the strategic level, the FCC needs to establish a pre-set agenda and begin to undertake overarching evaluations of broad policy such as maximizing the use of spectrum, the impact of market structure (on prices, innovation, and, in the media sector, the availability of local and diverse content), and the use of advanced technology by public safety agencies."

[91] Importantly, any commitment to specific actions should be tied to the development of timely broadband mapping tools that are sufficiently detailed and granular to facilitate informed policy-making. *See* discussion on broadband mapping, *supra* at Section 1.A.5.

[92] Broadband NOI at ¶ 1.

III. CONCLUSION

For the foregoing reasons, TIA encourages the Commission to adopt a Broadband Plan consistent with the recommendations set out above.

Respectfully submitted,

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TIA ROADMAP

I. TIA Vision for a Roadmap
   a. Economic and societal benefits of broadband
   b. Set forth roadmap: goals, action items, timeline

II. Plotting the Roadmap
   a. *Enhancing efforts to stimulate investment, innovation, and promotion of next-generation broadband deployment*
      1. Deliberate regulatory approach
      2. Facilitate broadband adoption
      3. Reasonable network management principles
      4. Data collection: broadband mapping, definitions, and capabilities
      5. Stable regulatory environment: Federal preemption
   b. *Advocating for forward-looking spectrum management and the allocation of additional spectrum for advanced wireless services on a technology-neutral basis*
      1. Additional spectrum resources for wireless broadband
      2. Globally harmonized spectrum allocations
      3. Market-based regulatory approach
   c. *Providing communications to all Americans, ensuring access to consumers in low income and rural areas and those with disabilities*
      1. USF reform to include broadband distribution
      2. Extend and make permanent the Rural Health Care Pilot Program
      3. Continue Recovery Act funding efforts through additional grants
      4. Voluntary industry standards to assist those with disabilities
      5. Interagency, accessibility symposium with public/private participation
   d. *Facilitating open and fair market access for U.S. companies by promoting full, fair and open trade and competition in international markets*
      1. Learn from international broadband strategies
      2. Liberalization of ICT on a technology-neutral basis
   e. *Increasing the amount of federal funding towards efforts to deploy broadband in rural areas, communications network-specific basic research, tax credits and expensing provisions, among other initiatives that foster investment and innovation*
      1. Direct research towards next generation network issues
      2. Additional funding for long-term, pro-competitive, basic research
   f. *Promoting the development of an interoperable public safety network capable of protecting all communities in the event of further domestic disasters*
      1. Need for interoperable broadband and LMRS system
      2. Interoperability of public safety systems and devices
      3. Prompt determination of shared network viability

III. Timeline
   a. Ensure transparency through clear agenda and benchmarks
   b. Target specific action items over next three years

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