

# Can The National Plan Expand Rural Broadband Inclusion

Background Brief Supporting Presentation by Bill Gillis<sup>1</sup>

## Historical Context

With Congressional passage and executive signature of the Telecommunications Act of 1996, the nation set forth on an intentional path to be a world leader in what was then a young emerging age of “dot com” entrepreneurship and consumer wonderland promised by a globally connected Internet. Central to that path was the removal of remaining regulatory barriers to competitive telecommunications entry into local markets and the establishment of industry ground-rules for competitive engagement.

There was widespread recognition even before 1996 that America had to remove the constraints of inefficient monopoly local telephone regulation if American consumers were to benefit from the emerging digital age and the nation was to remain economically strong and secure. However, for those living at the end of the farm, ranch, mineral extraction and timber roads, where memories of party telephone lines had not yet even faded, the reality of necessary change from the historic monopoly regulatory paradigm was accompanied by fear. Fear that local telecommunications deregulation was a slippery slope to abandoning a 60 year precedent of federal and state public policy designed to provide reasonably comparable telecommunications services in rural areas to that available in the cities.

In response to that fear, a majority of Senators and Representatives agreed to include in the 1996 legislation a set of core principles intended to guide national universal service going forward. Perhaps the boldest and most comprehensive of those principles was that of Section 254(b)(3):

“Consumers in all regions of the Nation, including low-income consumers and those in rural, insular and high cost areas, should have access to telecommunications and information services, including interexchange and advanced telecommunications and information services<sup>2</sup>, that are reasonably comparable to those services provided in urban areas and that are available at rates that are reasonably comparable to rates charged for similar services in urban areas.”

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<sup>1</sup>President and CEO of VisionTech360, a Spokane based company providing technology facilitated strategic planning solutions to government and business. Presented at Telecommunications Law, Law Seminars International, Seattle Washington, April 15, 2010.

<sup>2</sup> Underline added for emphasis.

## **The Policy Challenge**

Very few people back in 1996 could have predicted the level of global telecommunications and information technology innovation, nor the extent of consumer adoption that has emerged over the past 14 years. The World Wide Web, in 1996, had only recently emerged as the consensus Internet protocol that would quickly enable the Internet to become a digital resource linking hundreds of millions of ordinary people across the globe. Software entrepreneurs had only just begun to commercially develop the new applications that are mainstream today. Cell phones a novelty back in 1996, now are found in the pockets of people living in cosmopolitan cities, on farms and ranches, as well as in African villages. Music formats quickly moved from cassette tapes, to CD's to sources downloadable 24/7. The concept of data, video and voice being separate distinct services has quickly disappeared with entrepreneurs coming up with new mass consumer services such as Skype, Facebook, or Twitter make such distinctions less and less relevant. Broadband has become integrated as an essential component to the efficient delivery of core functions such as health care, education, business opportunity, public safety and the functions of democracy in news, information and correspondence.

Some would suggest this dramatic pace of global technological innovation and adoption has occurred in spite of, rather than because of intentional public policy and regulatory strategy. After an initial barrage of intense rule makings to align with the new competitive paradigm in the late 1990s, both federal and state telecommunications regulatory authorities have preferred a "light touch" with only incremental adjustments pursued. "First do no harm" has been a mantra for many engaged regulatory reform discussions over the past decade. Indeed much of the transformative change has been driven outside of the regulated sector by innovations born in the halls of places such as Microsoft, Google, Apple and hundreds of small entrepreneurial start-ups.

Data presented in the National Broadband Plan documents that the nation's commitment to providing reasonably comparable services at reasonably comparable prices to all Americans no matter where they live has thus far been relatively successful for most Americans. This statement in no way is intended to diminish the reality that approximately 100 million Americans have not yet subscribed to a broadband service (including about fifty percent of those living in rural America); or the reality that there are still approximately 7 million households living outside of areas where telecommunications infrastructure capable of providing broadband 4 Mbs data and video downloads. However, given there has been on limited innovation in universal service policy in the past decade, it is

remarkable that vast majority of Americans, including many in rural places, have access to, and adopt broadband communications services<sup>3</sup>.

A question has been posed to this panel asking if the National Plan will “provide a viable path forward to provide universal access to broadband especially in areas where the market has failed”. The observation that there remain substantial geography not presently served by broadband and more than one-third of Americans that have not yet benefited from broadband access is not by itself an indication of “market failure.” Markets are institutional structures designed to discover and respond to consumer choices, not mechanisms to guarantee universal delivery.

However the concept of “market failure” must be considered in the context of Congress’ intent delivered as the Federal Telecommunications Act of 1996 and the more recent directive to the FCC, that the nation should have a plan to ensure that all Americans have access to broadband. The market delivery of broadband communications is different from that associated with the market provision and delivery of wheat or automobiles. The ubiquitous access to communications is essential national infrastructure that is vested with a public interest. When entire populations segments are excluded from the benefits of broadband communications, the nation faces prospects of lost productivity, impaired ability to lead innovation, and dramatically higher costs required to achieve national purpose objectives in health care, education, energy independence, environmental quality, economic development, public safety and security. These costs of U.S. digital exclusion are estimated by one independent analysis to be as high as 55 billion dollars per year.<sup>4</sup>

The national policy directive is clear that broadband communications has become so essential that the national interest is best served when all Americans have access to, and are able to afford reasonably comparable broadband telecommunications services. In this sense, markets do fail when there remain American’s unable to access and benefit from broadband communications. Those left behind in the current market driven regime often live in isolated rural communities, but they also live in cities and suburbs. Judgment of the extent of “market failure” only can be quantified when measured against standards such as desired minimum upload speeds, percentage adoption targets, or access to comparable services.

Within the United States, there appears to be widespread agreement that the goal of universal broadband access (no matter how it is defined) is best achieved through private innovation and delivery of competitive services to all regions. The National Plan emphasizes this fundamental role of competitive telecommunications markets

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<sup>3</sup> The decade of course has not been completely absent of USF reforms. Examples include implementation of RTF recommendations, Bishop-Perry making e-rate more accessible, the RUS broadband loan program and the FCC telehealth pilot.

<sup>4</sup> Digital Impact Group, The Economic Impact of Digital Exclusion. March 5, 2010

with recommendations of new actions the nation should undertake to maximize incentives and capability for private innovation and investment to deliver broadband access to all Americans. Where private providers of telecommunications services continues to fail to provide comparable communications to all consumers, additional measures may be required such as the direct provision of services or additional targeted subsidies.

A 360 plus page data filled document, the National Plan is the most comprehensive in its scope and consideration of broadband access by the nation's population ever developed. There is far too much to discuss in a single presentation. I will focus my remaining comments on the narrow set of topics within the plan pertaining to governmental regulatory reforms as well as policy actions including targeted universal service subsidies intended to spur broadband investment to high cost rural communities that are presently unserved or underserved by broadband providers.

### **Spectrum Reform**

Spectrum reform recommendations included within the National Plan are important for the entire nation, but are particularly critical to the goal of ensuring presently unserved and underserved high cost rural households have at least one broadband service access option. There is no one technological bullet to bring affordable broadband services to all underserved and unserved areas. However, recent advances in LTE and WIMAX technologies already are creating a rapidly changing broadband service landscape in much of rural America.

- For many people living in low-population density areas of the country, wireless may be the only realistic competitive broadband service option and in some cases the only cost effective option to bring broadband service to outlying homes.
- For older and low-income populations that have not yet adopted broadband, mobile solutions may be the most comfortable first option as a significant portion of these individuals do have experience with cell phones, even though they may not own a computer.

As noted in the National Plan, the freeing up of additional spectrum over the next ten years will be important to the further development of 3G and 4G wireless broadband access as well as the availability of wireless backbone infrastructure.

### **Middle-Mile Solutions**

A lack of affordable access to middle mile connections to an Internet point-of-presence can be a significant constraint to the expansion of broadband options, especially in geographically isolated rural regions. Federal loan programs such as those provided through RUS and Federal universal service funds have enabled rural

cooperatives and rural telephone companies across the country to construct local broadband networks serving their customer base. However, traffic patterns over those networks are rapidly shifting onto the Internet as more customers use VoIP, music and video downloads, and other internet based services. For example one rural cooperative in Wisconsin reports their Internet sourced traffic increased more than 1000 percent over the last three years. Similarly, the opportunity to expand wireless broadband into unserved and underserved rural areas will also depend in part on providers being able to identify and purchase affordable middle-mile connections.

Solutions to the rural middle-mile challenge (not all of which are directly found within the National Plan) are multi-dimensional and include:

- Better publicly available data on middle-mile infrastructure availability to determine the size the extent of problem facing rural areas.
- The development of public middle mile network options such as NoaNet in Washington State where private investment has failed to provide affordable solutions.
- Refinement and enforcement of current FCC authority to address anti-competitive practices and ensure fair, just and reasonable pricing of middle mile connections.
- Consideration of new authority for public and private partnerships with entrepreneurial rural local broadband networks able to leverage fiber connections to anchor institutions should be considered.
- The freeing up of additional spectrum can provide a resource to expand middle-mile connections to isolated rural areas.

The National Broadband Plan recognizes the FCC has already begun related dockets including a look at “Special Access Rates” and enforcement of interconnection requirements.

### **Targeted USF Reform**

As already noted, the evidence suggests that federal universal service policies and programs (supported in some cases by state programs) have worked remarkably well in keeping infrastructure investment in much of rural American reasonably comparable to what is available in urban areas. This in spite of the reality that these programs were designed for a land-line public switched voice telephone era with limited competition rather than Internet Protocol, integrated service, mobile and competitive realities of today. However, this set of complex subsidy programs is living on borrowed time as the realities of how efficient networks are engineered

and the way consumers are using those networks has changed. Failures of the current Federal universal service system include, but are not limited to:

- The present set of rural USF programs creates a two-tier system with independent rural telephone companies offering some of the best land-line services in the nation but non-rural companies operating under a different set of policies have little or no incentive to invest in their rural properties.
- As the network traffic rapidly shifts onto the Internet, the required federal contribution rate and intercarrier compensation policies are unsustainable.
- Eligible uses for the federal universal service fund are not well aligned with today's network reality and do not provide market incentives to build the most cost effective infrastructure, accelerating concerns of waste.
- The rapid growth of mobile telecommunication carrier use of the federal program has created unintended consequences including pressure on fund size, more misalignment of payments and cost of providing service and the subsidizing of multiple lines to the same household.
- The federal USF program is not explicitly designed to incent the deployment of the most cost effective broadband technology in high cost areas.
- The present federal universal service structure does not adequately incent states to take actions such as realigning local rates and intrastate access rates with market realities.

And this is only a partial list of current challenges. The National Plan includes recommendations of a long list of reforms to Universal Service, most of which are not the introduction of new ideas, but there is reason to believe that necessary reforms may have more momentum towards action in the context of a broader strategy to position the nation for the broadband Internet and mobile communications era. Perhaps most important is that the reforms are intended to be directed to providing incentives needed to invest in network engineered to use the most efficient available technologies to deliver traffic that is increasing Internet supported rather than that provided through a traditional public switched network. The recommended subsidy structure is intended to be targeted, specific and technologically neutral. The estimated amount of subsidy considers opportunities to recover a reasonable amount of infrastructure investments through servicing multi-dimensional consumer demands (voice, data and video) over broadband.

The National Plan is careful to not cross-jurisdictional lines into recommendations that would preempt state authority. However, without state actions, some aspects of federal universal service reform as proposed may be difficult to implement. An example is the recommendation of moving all rural carriers away from rate of return regulation. This recommendation, if implemented, will be one of several that

are likely to trigger a round of universal service reforms overdue in a number of “rate-of-return” states; including state reforms such as examining rate rebalancing and the aligning of intrastate access with costs.

In developing the national plan, the FCC led team has helped along the chances of successful advancement of critical reforms to federal universal service policies by providing data to size the immediate challenge of making sure all Americans have access to “broadband services supporting a basic set of applications that include sending and receiving e-mail, downloading Web pages, photos and video, and using simple video conferencing.” It has also helped chances by providing a detailed plan of how these reforms can be accomplished without raising the size of the current universal service fund.

At the same time, the National Plan foreshadows potential future challenges that could cause national policy leaders to be forced to ultimately make a choice between abandoning the core principle of providing comparable communications service to all Americans or being prepared to implement a full fiber network to every corner of the nation. Specifically, the national plan sets a goal that the vast majority of the nation shall have access to a 100 Mbs broadband connection. Unless saved by technological advancements, fulfilling the comparability standard for all Americans in 2020 could become significantly more expensive. However, much of the future is unknown including technological change and new consumer products and services that could increase the market feasibility of deploying fiber to high cost area. The National Plan wisely has chosen not to engage in speculation, but rather relies on known data.

### **Broadband Adoption Support**

Among the most significant advancement of broadband policy within the National Plan is the recognition of a meaningful public sector role in promoting digital inclusion through systematic adoption measures. Of critical importance to expanding broadband adoption in rural regions of the nation is the plans focus on local capacity building initiatives and the recommended digital literacy initiative.

Expanded broadband subscription, adoption and use is not just (or not even primarily) a social equity issue. As already noted, expanded broadband adoption has concrete governmental and private sector economic implications both in terms of avoided taxpayer costs associated with accomplishing “national purposes” and in expanding economic returns to providers who serve high cost rural areas.

Philadelphia based Digital Impact Group and Econsult Corporation evaluated the economic cost of the current non-adoption of broadband by 100 million Americans living in 40 million households<sup>5</sup>. This research group estimates that if all these individuals were to subscribe and adopt broadband, the nation would save

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<sup>5</sup> The Economic Impact of Digital Exclusion. March 5, 2010

approximately 55 billion dollars per year in the achievement of national purposes included within the plan. Avoided costs come in many forms including:

- *From the perspective of individuals and families*, non-adoption increases their cost of accessing goods and services; reduces income earning potential because of inability to take advantage of on-line education, health and job search options; imposes additional costs through having to take off from work and pay for transportation to obtain medical care; and lost income due to inefficient management of household finances.
- *From the perspective of governmental organizations*, a large segment of non-adopters means there are additional costs of having to maintain both paper-based and on-line communication processes; a necessity to maintain more local offices; and increased costs of promoting inclusive civic engagement.
- *From the perspective of the environment*, digital exclusion translates into more cars on the road and a reduced ability to efficiently manage carbon based fuel usage in homes and businesses.
- *From the standpoint of business and economic development in rural America*, digital exclusion means higher costs in recruiting and retaining employees; higher costs of providing continuing workforce education; higher tax rates to provide essential public services such as water, sewer, energy and education; as well as higher costs and reduced opportunities to market locally produced goods and services to global markets.

Added to these real costs are the implications for public universal service subsidies in high cost rural areas. With a higher broadband take rate, providers of broadband are able to gain a larger return from the “marketplace” (with the option to sell more value-added services) and should therefore require less public subsidy to meet business goals in high cost rural areas.

Implementation of the National Plan could be supported through a more refined analysis of the cost of non-adoption, especially in unserved and underserved areas. By quantifying the potential economic benefit of expanded broadband access, the costs associated with universal service programs and broadband adoption initiatives will have a more solid justification and grounding.

### **Special Attention to Indian Country**

A final point important to recognize within the National Plan, is the special attention devoted to the provision of comparable broadband services and adoption in Indian Country. No plan for broadband inclusion in the rural west or mid-west can be complete without considering this important population. Native Americans have long been underrepresented in access and adoption of comparable telecommunications services, even prior to broadband. Solutions are complex

involving consideration of cultural, economic and jurisdictional dimensions. The commitment within the National Plan to giving special attention to addressing the broadband development needs in Indian Country is a good step forward in building a digitally inclusive nation.

### **Concluding Comment**

The National Broadband Plan represents a bold step forward in creating what in my opinion is the right conversation the nation needs to be having at this time. The FCC led team that led the writing of the National Plan deserves credit for being bold in their recommendations. Congress' directive to the FCC that it consider how the provision of broadband is related to the achievement of core national purposes is arguably the most groundbreaking aspect of the National Plan. Making the connection between broadband and national purposes closes the loop and makes clear the vested public interest the nation has in the ubiquitous provision of comparable infrastructure and the ability of all populations to afford and use the services delivered through that infrastructure.

There is plenty of data and information in the National Plan to document that the nation will be better prepared for the future if most recommendations contained in the plan can be implemented. There is also plenty of data to demonstrate what is at stake if we fail.

While the plan gives first priority to engage the private market to achieve the necessary provision of broadband infrastructure and services, it appropriately does not suggest the abandonment of a regulatory role in ensuring the conditions for competitive market provision are in place and recognizes that the goals indeed will not likely be achieved in all regions of the nation without some level of direct public investment in the forms such as limited freely available spectrum and direct subsidies.

The boldness of the recommendations represents strength within the National Plan. The same bold vision also points the greatest challenge before the FCC, the industry and the nation. Implementation will require an unprecedented number of rule-makings. It will require policy and regulatory changes not only at the national level, but also at the state level. It will require that consumers in privileged positions recognize the nation's collective interest in consumers not yet connected to broadband services being able to do so. Most difficult, it will require businesses that compete with one another, being willing to accept reforms that may reduce competitive advantage for some and improve the competitive position of others.

While most stakeholders have thus far applauded the plan, history demonstrates that even ideas that make a great deal of sense and are a clear win-win face hurdles when formal rulemakings are initiated. What is however different in 2010, that provides some reason to hope for success is the transformative implications of ubiquitous comparable broadband services for the achievement of national

purposes. There is more than ever before a practical economic self-interest that can drive progress forward and cement unusual new alliances. Specifically, on the stage, are huge new market demands in every region of the country driven by needs in health, education, energy efficiency environmental quality, economic development, and security. Most, if not all of these opportunities, converge at the communication network that serves the home. When all potential demands are aggregated at the household level, even customers in isolate rural regions begin to look more attractive to serve. Without agreement to advance recommendations such as spectrum reform, middle mile enhancements, universal service reforms, or adoption and literacy interventions, much of these market opportunities cannot be realized.

In summary, broadband reform in 2010 stands at a unique juncture where it is entirely possible that the interests of historically competing service providers and the public interest may reasonably align in new and innovative ways that can overcome the structural institutional rigidities that have been a barrier to progress in the past.