Report on Rural Broadband Strategy   )   **GN Docket No. 09-29**

Comments of the Consumer Federation of America
and
Consumers Union

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The Consumer Federation of America and Consumers Union respectfully submit these comments in response to the Federal Communications Commission request for comments in the above captioned proceeding. We urge the Commission to adopt a least cost, technology neutral, no regrets approach to serving the un- and under-served in rural America and low-income inner city neighborhoods. This would be most effectively implemented by a strategy that pushes middle mile fiber down the major roads of rural America and to public housing "hubs" in urban areas and provisions first mile connectivity with wireless technologies. With standard set at leading edge wireless levels, this strategy would deliver both mobile computing and broadband service that meets the needs of rural and low-income urban America at prices they can afford. Simply put, this is the strategy that best accomplishes the primary goal of the Communications Act, stated in its opening sentence, "to make available, so far as possible, to all people of the United States, without discrimination on the basis of race, color, religion, national origin, or sex, a rapid efficient nationwide and world-wide wired and radio communication service with adequate facilities at reasonable charges."

In oral comments at the hearings National Telecommunications Information Administration (NTIA)/Rural Utility Service (RUS) hearings we made a simple point. We need to get the biggest bang for the buck with the stimulus money to serve the un- and under-served because the need is great. The most recent analysis prepared by the NTIA[1] showed that all low-income consumers and rural Americans are severely disadvantaged in broadband access. Penetration of the Internet in urban America was only 4 percentage points higher than in rural America, but penetration of broadband in urban America was 15 percentage points higher than in rural America, which reflects the lack of availability and high cost of provisioning broadband service in rural America. At the same time, the vast majority of households that do not take broadband service are not located in rural areas and low income households are much less likely to have broadband Internet or broadband service, as the following table shows

Internet and Broadband Penetration Rates:
Percent of Households with Service

	Income Greater Than $24,999		Income Less Than $25,000	
	Urban	Rural	Urban	Rural
Internet	70	68	33	28
Broadband	61	45	26	15

Source: National Telecommunications and Information Administration, *Netwrked Nation: Braodband in America* **(Washington, D.C. January 2008), Appendices**

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[1] National Telecommunications and Information Administration, *Netwrked Nation: Braodband in America* (Washington, D.C. January 2008),

The failure to achieve universal service in broadband is **both a low income and a rural problem.** Urban non-low income households are 2.5 times as likely to have broadband as urban low-income households and 4.7 times as likely as rural low-income households. In adopting a broadband policy for rural America these facts must be balanced and it is critical to establish basic principles to guide the expenditures of funds across all agencies charged with addressing the problem of the un-and under-served in both rural an urban America. The Commission has the ideal opportunity to do so in this proceeding. While this proceeding addresses the rural strategy, as described below the principles to accomplish the goal of promoting broadband apply across geographic areas.

PRINCIPLES FOR MEETING THE 21ST CENTURY COMMUNICATIONS NEEDS OF THE UN- AND UNDER-SERVED

With over 40 percent of households lacking broadband connectivity and as much as ten percent having no broadband service available, maximum coverage should be the goal, rather than chase a gold-platted network that will restrict the number of households that can be reached in the near future. We need to get people connected for basic communications that opens the door to economic and civic participation in cyberspace. Thus, it is critical to set a reasonable and adequate minimum standard of broadband service at a level that can meet the need of households for basic broadband connectivity and promote project that achieve that goal at the lowest possible cost so the largest number of households can be reached.

In achieving this goal in rural America, and possibly for the least-served urban consumers, we argue that the agencies should support "no regrets" projects. These are projects that provide basic functionalities that are certain to be used and useful in the 21st century communications ecology. Two types of projects fit the bill.

Middle mile fiber – essentially fiber down the road.

First mile wireless – mobile computing.

Without middle mile fiber there can be no broadband service, not matter which first mile technology is used. Middle mile is a necessary component of solving the problem of un- and under-served. Moreover, middle mile end-points can be major social institutions. We envision a community-wide fiber network linking all local government buildings, public housing, schools, and libraries. The service would be anchored by local government. The schools and libraries can also be "hot spots" in a WIFI/WIMAX network that would also be available to the community for broadband communications. Non-mobile communications flow over the fiber network, while mobile communications flow over the fiber network to a WIFI/WIMAX wireless network.

Mobile computing is certain to be an important part of the 21st century communication ecology. The only question is, should it be the first thing we do to provision broadband in un- and under-served areas. We think the answer is an emphatic yes for the following reason. When we seek to serve the un- and under-served in rural America and in urban public housing and adjacent neighborhoods with mobile computing, we get a "two-fer." We not only deliver mobile computing, but given a meaningful threshold for broadband speed, we also dramatically improve the quality of Internet connectivity available to the community. If we set the broadband threshold at the leading edge of currently available mobile commuting, we deliver good mobile and good broadband service with one investment.

We believe that the standard should be set at a 4 mbs system, reasonable balanced between downloading and uploading, at least 3/1. The reason we have chosen this level is that we are confident that the vast majority of uses critical to economic and social

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participation in cyberspace can be supported by such a system. For example, a recent report

in UK found that the following services it finds that are supported by a 2 mbs system include

the following

Broadband Speeds And The Services They Deliver To Users

Basic Internet Functionalities

      e-mail
      IM
      Fast Internet Browsing
      VOIP
      Network Storage/Backup
      P2P File Sharing
      Telehealth

Audio

      Online Radio
      iPlayer
      Fast Music Download

Video

      Basic video streaming
      Near VHS Conf. Call
      Long-Form Video (MPEG-4)
      Video Conferencing via TV

Department for Business Enterprise & Regulatory Reform, Department for Culture, Media and Sport,
Digital Britain: The Interim Report, **January 2009, p. 56.**

      The most recent estimates of both fixed and mobile broadband penetration across the

globe suggest that broadband and mobile are different services, as the following figure shows.

If the service were substitutes, we would expect to see a negative correlation. If they were

complements, we would expect to see a positive correlation. The fact that the penetration of

these two services is almost identical for the top nations (fixed broadband per 100 Pop. =

25.1; mobile broadband per 100 Pop. = 23.3) and yet there is virtually no correlation (r=. 16,

t= =. 84) suggests they are distinct products.
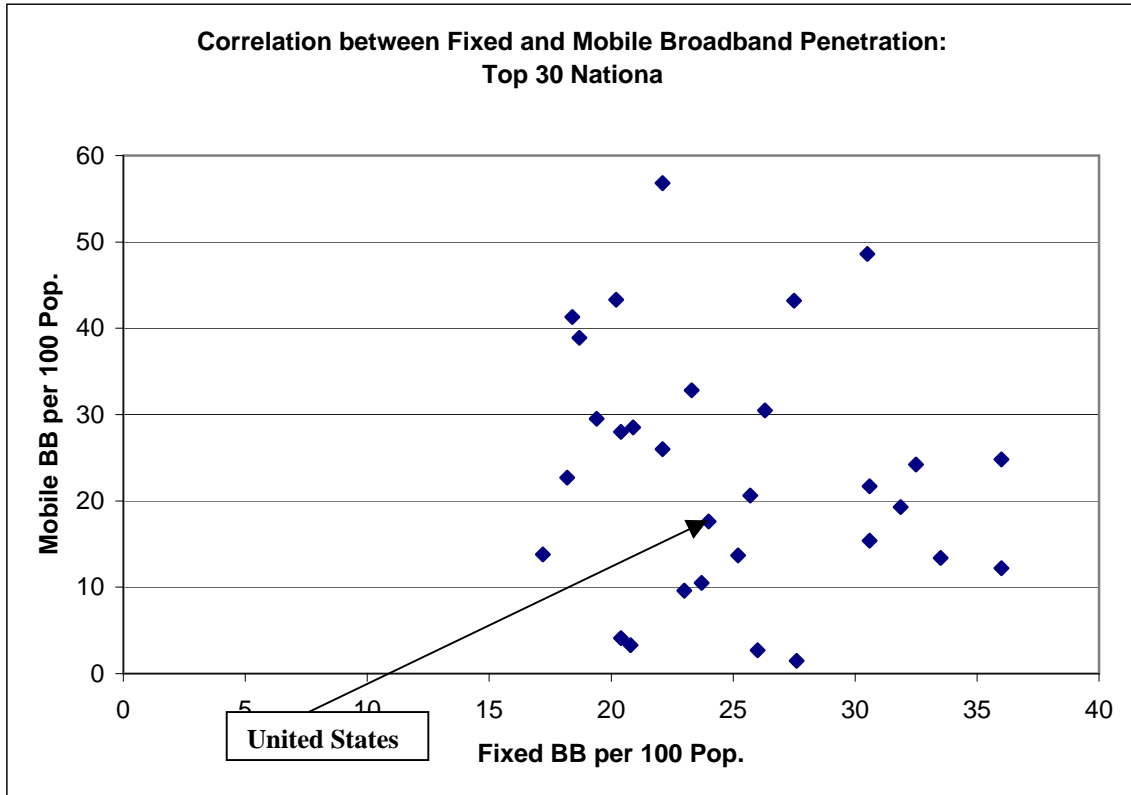
**Correlation between Fixed and Mobile Broadband Penetration:
Top 30 Nationa**

The graph also makes it clear that the U.S. is not doing very well on broadband

adoption for with fixed or mobile. The U.S. ranks 15th on fixed broadband and 19th on mobile

broadband. We need the "two-fer" of mobile computing.

Moreover, the mobile computing is not fixed. It will evolve and the physical

infrastructure we deploy – towers, some network equipment as well as back office operations

– can adapt to high speeds as LTE technology evolves. Moreover, the FCC could take a

major step toward expanding the availability of affordability of mobile broadband by making

the 700 megahertz and white spaces spectrum more available for, especially in rural America, where the propagation characteristics of this spectrum would dramatically expand coverage and lower the cost.
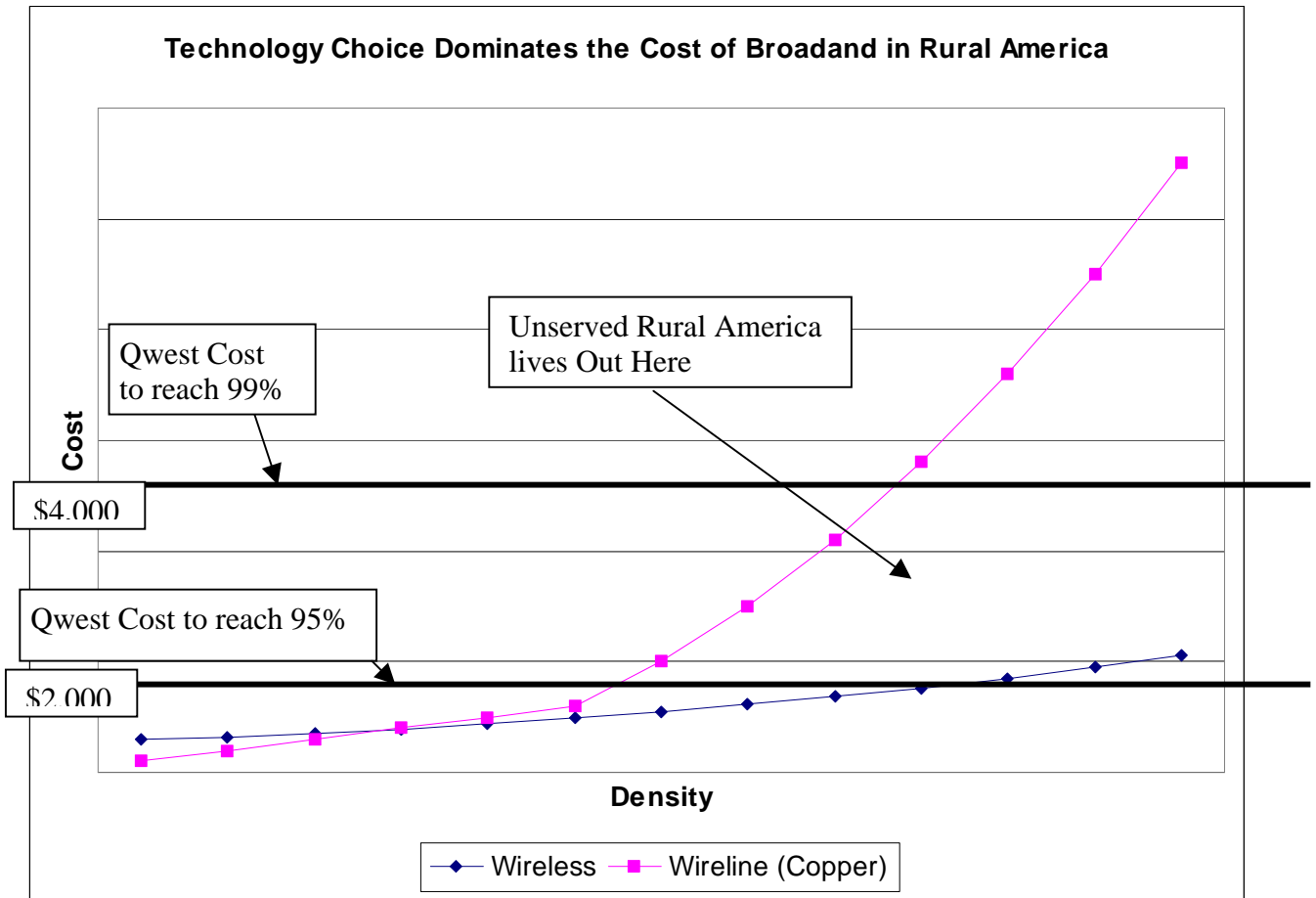
A LEAST COST APPROACH ACHIEVES MAXIMUM COVERAGE

In order to ensure maximum coverage and take-up, it is necessary to necessary to be technology neutral and emphasize least cost projects. With the diverse geography of a continental economy, one-size fits none and forcing a technology to serve all locations can result in huge costs that limit the number of households that can be served with these funds and price those households that are served out of the market in the long term.

The individual projects that will be proposed will provide specific costs for specific projects, but several recent analyses of the lowest density regions of the country suggest that choosing the technology wisely will have a major impact on the ability to reach the un and under-served.

Based on a CostQuest study –"Costs and Benefits of Universal Broadband Access in Wyoming" – and Qwest's recent claim that it would cost more than $2,000 per line to serve 10 percent of its customers who do not have broadband, we believe the following cost/density graph depicts the situation in rural America. This graph makes it clear that the reason incumbent have failed to serve such a large part of, primarily, rural America is not simply that it costs telecommunications companies too much, but that the technology and business models preferred by the incumbent companies do not fit rural America. This is also true for innercity low-income populations, particularly for consumers who live in public housing units. There are lower cost, more consumer-friendly approaches that can better serve rural America and

innercity low-income neighborhoods, but the incumbents have not been interested in deploying these technology/business model combinations.

Technology Choice Dominates the Cost of Broadand in Rural America

Qwest Cost to reach 99%

Unserved Rural America lives Out Here

Cost

$4,000

Qwest Cost to reach 95%

$2,000

Density

◆ Wireless ■ Wireline (Copper)

Making least cost the cornerstone of selecting projects, not only ensures that broadband will be provisioned efficiently; it also helps to ensure that the service will be affordable. Indeed, the FCC and other agencies should give priority to projects that are willing to make commitments on target levels of consumer prices that are affordable.

HUMAN AND SOCIAL CAPITAL ARE EQUAL PARTNERS IN ACHIEVING BROADBAND ADOPTION AND SHOULD BE FUNDED AS SUCH

The principles should also recognize that the majority of households who have not taken service have found the options offered to them to be too expensive, or do not find the compelling content and applications that would convince them to spend their scarce resources on service, or lack the skills to make the service useful. Thus, the sustainable adoption, training and institutional networking and demand stimulation aspects of the stimulus bill should receive a full measure of support.

While the largest problems in adoption of broadband have been availability and cost, there are also skill and attitudinal barriers to adoption. A community-based initiative addresses all the major obstacles to the adoption of broadband. The stimulus package can be used to create a team -- an "E-Corp" -- to train community members in digital communications and digital skills. They can retrain unemployed workers with digital skills to become local tech support. These activities foster the skills for a more competitive work force.

A community network should develop and deploy social networking tools working with members of the community. The implementation of existing social networking tools in the community is based in the schools, local civic organizations and local Chambers of Commerce. Software and training are the activities that need to be funded. Community projects can also produce content and activities that are relevant to and attract the interest of local people. Funds can flow through four categories of non-profit entities – local governments (including public housing authorities), cooperatives, non-profit community

groups, and public/private partnerships. The public entity can fund public private

partnerships and local government.

The funding agencies should be encouraged to give priority to projects that coordinate

the physical and human capital sides of the adoption equation. Moreover, community-based

approaches should seek to coordinate with other source of funding such as health IT and

education funds. The goal should be to "light up" whole communities with a range of

coordinated activities tailored to the needs of the local communities. Marrying physical

infrastructure with human capital, social networking, and civic participation raises the value

proposition of subscribing to broadband and is a powerful way to overcome the hesitance to

adopt the technology among the un and under-served.