



Celebrating 40 Years

Broadband Availability and Adoption: Are We There Yet?

Sherry Lichtenberg, Ph.D.
Principal Researcher
slichtenberg@nrri.org

National Regulatory Research Institute
8611 Second Avenue, Suite 2C
Silver Spring, MD 20910

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Broadband access is increasing, but there are still significant gaps

- 342 million internet connections as of June, 2015
 - 242 million wireless connections
 - 100 million wired connections

(FCC data, June 30, 2015; US Pop. 324M)
- Wired Access speeds increasing
 - 74% of connections are 10 mbps down and 1 mbps up
 - 25% of connections are 25 mbps down and 3 mbps up
- Mobile speeds also increasing, but data caps limit usefulness
- Highest access speeds in areas with fiber connectivity
- Rural availability continues to lag behind



State and federal programs currently focus on broadband availability

- Connect America Fund will increase availability in unserved areas
 - CenturyLink, Frontier, AT&T participating
 - New York has petitioned the FCC to direct unspent Verizon-NY funding to the state
- California, Colorado, Maine, and Nebraska have USF funds directed specifically to broadband
 - California Advanced Services Fund (CASF) is the largest at \$113.997M
 - Colorado directs USF funds in “effectively competitive” areas to broadband
- Delaware, Massachusetts, Minnesota, Vermont, Wisconsin fund broadband grants
- 2016 legislation in 8 states addressed broadband funding
- Commissioner Pai urges states to pre-empt laws slowing BB deployment



High speed broadband access still primarily urban-focused

- High speed access for urban America is growing
 - 96% of urban Americans have access to wired broadband speeds of 25 mbps down and 3 mbps up
- But rural and disadvantaged populations remain under or unserved
 - 39% of citizens in rural areas do not have broadband access
 - 41% of those on tribal lands don't have access
- 41% of schools don't meet FCC access speed goals
- Competition remains limited
 - 44% of urban consumers can choose from 2 or more competitors
 - 13% of rural consumers can choose from 2 or more competitors

Data source: FCC Broadband Progress Report, 2016



As more functions move to the web, adoption becomes increasingly important

- Americans have increased their use of broadband overall
 - 68% have wireless broadband (either standalone or in addition to wired service)
 - 67% have wireline access
- Wireless access increasing; wired adoption has plateaued
 - Current wireline adoption rate has dropped from 70% in 2013
 - Wireless access appears to be displacing wired access, particularly for low income consumers
- Price remains the key issue in limiting adoption
 - Wireless access cheaper
 - Provides access to video content – major driver of internet use
 - But data caps, inability to share devices limits usefulness



Will Broadband Lifeline Increase Adoption?

- Low cost broadband offers should lead to increased adoption
 - FCC Broadband experiments point to cost as the key driver of adoption
 - Other drivers include questions about the importance of Broadband, lack of computer equipment, or need for training
- Broadband Lifeline will increase user participation, but the focus on wireless may limit its usefulness
- Both existing and new providers propose enhanced service to increase adoption
 - Comcast Internet Essentials
 - Sprint 1 Million Project
 - Kajeet wireless education offer
 - Facebook Free Basics



Broadband “Lifeline” Offers

- Comcast Internet Essentials (2011)
 - Low cost wired internet, equipment (including in-home Wi-Fi), training
 - ✦ Initially students on school lunch program
 - ✦ Expanded in 2016 to include HUD-assisted households
 - 3M users to date
 - Planning to extend to low-income seniors and community college students
- Sprint “The 1 million project”
 - Wireless broadband and equipment for 1M high school students
 - Provide equipment (smartphone, hot spot, tablet, or laptop) and 3GB LTE data
 - Speed drops to 2G if users go over 3GB data cap
 - Partner with community groups to identify/support students



Non-traditional lifeline offers

- **Kajeet Wireless – Broadband Lifeline for Education**
 - Hot spot, internet access via other wireless providers
 - 6 GB of 4G LTE “education broadband” per month
 - Access limited to specific educational web sites
 - ✦ Schools determine what websites students may access
 - ✦ Customers must authorize Kajeet to define what sites students may visit
 - ✦ Kajeet tracks usage for reporting purposes
- **Facebook Free Basics**
 - International program not yet available in the US
 - Provides managed access to Facebook and participating websites
 - Potential US offering under discussion



Other drivers for broadband adoption

- The Internet of Things
 - Energy management
 - Home security
 - Connected appliances
- Telemedicine will provide a key reason for connectivity
- On-line access requirements for government-sponsored programs
- Video access



Lifeline Broadband will increase adoption but questions remain

- Lifeline voice has become primarily a mobile product
- Will BB Lifeline follow the same trajectory?
- Will this create two classes of users?
- Will having a single monthly subsidy drive users to a single device?
- And will that device be mobile?
- Will access to video drive BB adoption?
 - AT&T – Time Warner merger betting on mobile
 - Verizon mobile offers