Broadband Adoption and Usage: What Has Four Years Taught Us?

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In September 2009, the FCC's Broadband Task Force, appointed by Chairman Genachowski and run by Blair Levin, made a lengthy presentation before the Commission to give an interim report on how development of the National Broadband Plan (NBP) was going. You can see all 168 slides here. I was privileged to be part of the FCC's team that assembled the NBP. To prepare for my participation in the FCC's February 2013 Broadband Summit, I went back and looked at the 2009 presentation which, at the time, represented the received wisdom about the state of broadband adoption. Below I discuss four lessons learned in light of what we thought we knew in 2009 and what we know today.

To summarize, we learned that:

1. The previous decade's fast growth rates in broadband adoption was not sustainable into this decade;
2. Barriers to adoption are more complex than we thought;
3. The non-adoption problem is solvable. The research showed that non-adopters aren't a hopeless group of (mostly old) people who dislike technology. The right kinds of programs can lure people to broadband;
4. Smartphones help close adoption gaps, but have limits as standalone access devices and are mostly used to add to users' access means, not as a substitute for wireline.

The future challenge is how to sustain progress. To do that, I recommend:

- Developing a "best practice" tool-kit on broadband planning to help states and localities better engage with stakeholders to improve their broadband environment, and;
- Using reform of the Lifeline/Link-Up program to direct a portion of Lifeline funds to state and local planning and program activities to support broadband.

That is, the existing Lifeline model, which essentially is a "carrier to consumer" flow of funds, should be amended so it is a "community to consumer" model. Doing this will require legislative action.

1. **The upward growth in home broadband adoption is not automatic**

In the September 2009 presentation, we presented data that placed the home broadband adoption rate at somewhere between 63% and 67%. Subsequent research from the Federal Communications Commission and the National Telecommunications and Information Administration put that rate at 65% and 68% (for the fall of 2009 and 2010). The 2009 slides say that "overall adoption will grow naturally over time." Yet broadband adoption has not changed much since 2009. The Pew Internet and American Life Project put home broadband adoption at 66% in April 2012. The recesssion has had a lot to do with the slowdown, proving to be a more powerful force than the Commerce Department's Broadband Technology Opportunities Program (BTOP), which has gotten hundreds of thousands online in the past few years. Rising prices for "economy" broadband plans probably hasn't helped either; according to Telogical, prices for slower (under 5 Mbps) broadband subscription plans have risen 13% in the past two years. As I will discuss below, Smartphone adoption has something to do with slowing home broadband adoption as well.

2. **Adoption problems are multiple in nature**

In 2009, we had a sense for what the barriers to adoption were, but we've advanced on that understanding considerably since then. In 2009, adoption barriers sorted into four buckets – lack of relevance (50%), usability (13%), price (19%), and availability (17%) – all these figures for the one-third of Americans without broadband at home.

Today, we have a more nuanced view of broadband adoption problems. We learned in the NBP workshops we conducted that there needs to be a "social infrastructure for adoption" to lure technology novices to broadband. Our research showed that, when asked to choose more than one reason for non-adoption, we found the typical non-adopter cites about three. And, after that, when asked about the main reason for non-adoption, we found that cost was cited most often (36%), followed by 22% citing digital literacy, and then 19% citing lack of relevance.

Out of the research and the workshops, the NBP recommended *comprehensive* approaches to non-adoption as a way to deal with multiple barriers and emulate a "social infrastructure for adoption." BTOP was already employing such comprehensive approaches, and initiatives since then, such as

Comcast's Internet Essentials and Connect to Compete, take similar comprehensive approaches to tackling non-adoption.

3. **Not all broadband non-adopters are the same and some can be brought online**

Around 2008 or 2009, it was not uncommon to hear that broadband adoption really wasn't a problem because non-adopters were either too old to use technology or just didn't care about broadband (and if they don't care, why should anyone else?). But, again, our analysis turned up a more nuanced view. We segmented non-adopters into different groups and found that half of non-adopters had a real interest in broadband. They were not all particularly old (the average age for the "Near Converts" group was 45 and they mainly could not afford broadband) and some (the "Digital Hopefuls") saw the Internet as a valuable thing, but lacked digital skills to get online. These two groups made up 18% of Americans (out of the 35% not online with broadband at home then). Of the remaining 17%, the Digitally Uncomfortable (7%) were not online because of lack of skills and worries about online safety and security, and the Digitally Distant (10%) were the most elderly and least likely to be able to afford the Internet or see it as useful.

The key takeaway from really studying non-adopters was that the problem is solvable. Those without broadband are not an unreachable group of old people indifferent to modern technology. Rather, at least half – with the right mix of training and cost relief – might get online at home with broadband.

4. **Smartphones help in closing the adoption gap, but they are not a panacea**

In the 2009 FCC presentation, one slide showed projections of Smartphone penetration, forecasting that it would be 25% in 2012 and roughly 33% in 2013. That was way off! By the end of 2012, 45% of Americans had Smartphones. These devices have clearly impacted the access landscape, as they do narrow the digital divide. Looking at data from Illinois, when you add Smartphone access to home broadband access, there are only modest differences across racial categories: some 75% of whites in Illinois have either home broadband or a Smartphone, 70% of African Americans do, and 74% of Hispanics do. Some 7% of Americans are "Smartphone only" in that this (and not a home broadband subscription) is their means of getting online, which suggests a small slice of Americans who might have chosen home broadband have opted for Smartphones instead. However, most – 83% – of those with Smartphones ***also*** have broadband at home. This means these devices tend to

be *complements* to people's access assets, not *substitutes*. Moreover, those with "Smartphone only" online access do a narrower range of online activities than those with wireline access.

The Cost of Digital Exclusion Revisited

The role of Smartphones in online access highlights an important dimension of the 2009 presentation whose relevance has grown since then: ***the cost of digital exclusion***. The adoption portion of the 2009 presentation was explicitly framed in that way and the concept refers to how, as more people have gotten broadband and as more functions are carried out online, the costs of *not* having broadband at home rise. The example repeated many times since 2009 pertains to job searching. Most employers *only* accept job applications online, meaning the penalty to not having access is greater in a broadband-connected era than it was when offline options for job applications still existed.

If pervasive broadband connectivity first prompted policymakers to become *somewhat* worried worry about the cost of digital exclusion, mobile wireless access in combination with home wireline access should cause policymakers to become *very* worried about the cost of digital exclusion. Mobile wireless is the secret sauce in shaping people's attitudes about the Internet's conveniences and capacity to enhance their productiveness. When people have a Smartphone, they are far more likely than if they have broadband alone (or just wireless access alone) to think that the Internet can enhance their personal productivity, improve access to government services, or save money.

It is important, therefore, to think of highly portable wireless devices as leverage points for society to deliver services (education, government, health care) more effectively and efficiently. This also means that the debate about whether wireless is a substitute for wireline broadband is misplaced. Mobile wireless is a game changer not because it might supplant wireline, but because it profoundly shapes how people view the Internet's benefits. This, in turn, opens the door to far cheaper and effective ways for government and the private sector to deliver services. All this crucially depends on two things: a) individuals having adequate skills to use new applications, and; b) people being comfortable sharing the necessary personal information online that make Internet-enabled service deliver possible.

The path forward

The exciting future of productivity-enhancing innovations will unfold faster with more effective partnerships at all levels of government – as well as cooperation with the private sector. The good news is that a broadband policy infrastructure has evolved over the past several years in the country, much of it supported or buttressed by stimulus funds. Sustaining that infrastructure should be one of the chief priorities for policymakers. However, the planning capacities of states and localities vary when it comes to broadband. At a minimum, a mechanism should be developed to share best practices with respect to the planning process among all states. The federal government can play a lead role here.

Doing this doesn't have to be expensive, but it can't be free either. Sustaining and cultivating the capacities of state and local broadband efforts cannot happen without resources. The most obvious source of funds is the Universal Service Fund, which supports broadband deployment (in the newly designated Connect America Fund) and is in the process of transitioning the Lifeline/Link-Up program to support subsidies for qualifying individuals for broadband at home. At $1.2 billion in 2010, the Lifeline program essentially uses a "carrier to consumer" model to channel subsidies to qualifying low-income individuals through eligible telecommunications carriers (ETCs). The programs that BTOP has funded, as well as other non-profit-led efforts to promote broadband, have a very different model, namely a "community to consumer" approach. These institutions are trusted within the communities they serve, which make them ideal delivery mechanisms for promoting broadband adoption. Retrofitting the Lifeline program to direct resource to entities other than telecommunications carriers may require not just creativity, but Congressional action to authorize the FCC try new things. Unless all stakeholders think creatively, the lessons learned and investments made over the past four years may be wasted.