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FEDERAL COMMUNICATIONS COMMISSION

NATIONAL BROADBAND PLAN WORKSHOP
BUILDING THE FACT BASE: THE STATE OF BROADBAND
ADOPTION AND UTILIZATION

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1 P R O C E E D I N G S

2 MR. HERRIGAN: My name is John Herrigan.
3 I'm part of the National Broadband Task Force Team
4 here at the FCC, and this morning we're gathered
5 for the first of three workshops today on adoption
6 and utilization. Obviously, one of the big
7 challenges in developing a national broadband plan
8 is to benchmark who has broadband and who doesn't,
9 and also try to understand what people do with
10 broadband so that it might make a difference in
11 their lives in carrying out a range of
12 informational or other kinds of transactions.
13 Today we have for the first panel which is
14 entitled "Building the Fact Base," a group of
15 people who know a great deal about the data
16 pertaining to how people adopt and use broadband
17 Internet at home and in some cases away from home
18 on a mobile device.

19 Rather than introduce each of the
20 panelists, I'll let you look in the handout that's
21 been provided at people's biographies, but it is
22 truly an esteemed panel of experts on broadband

1 data and broadband adoption. What we're going to
2 do today in terms of proceeding is go around the
3 table here, let each speaker have about 5 minutes
4 to present his or her perspectives on broadband
5 data. Folks will have slides and we'll go through
6 those. We'll go through that sequentially and
7 then open things up to questions from people
8 assembled here and also from people in the
9 audience and people turning in on the World Wide
10 Web.

11 With that I'd like to get underway. In
12 a lot of these broadband panels that are held at
13 conferences in D.C. Or elsewhere, there is often
14 the opening salvo where we get a data download on
15 what's going on in the broadband world. More
16 often than not, that data comes from the Pew
17 Internet Project, and today is no exception in
18 adhering to what has become a tradition on
19 broadband panels which is hear from a Pew person
20 first to get a perspective on what's going on with
21 broadband adoption. So it's a privilege to kick
22 off this panel with a former colleague of mine,

1 Suzannah Fox, who's going to talk about Pew data
2 but other impacts that broadband have on people's
3 lives. Suzannah?

4 MS. FOX: Thank you very much. It is a
5 pleasure to be here. I would like to say that I'm
6 still a little bitter that you stole John, but I
7 will continue his work as best I can.

8 The first slide is going to show data
9 from our April 2009 survey. The report that we've
10 talking about is "Home Broadband Adoption 2009."
11 What we see in this data is that 63 percent of
12 American adults have broadband at home, and that's
13 a significant increase from 2008. This is based
14 on a telephone sample which did include a cell
15 phone sample which is essential to capturing an
16 accurate portrait of the American population.

17 I think this slide is the one that I
18 really wanted to focus on. There are a lot of
19 numbers on the slide, but one of the key points is
20 down at the bottom. Fifty-five percent of
21 broadband users site at least one of these reasons
22 as very important to them, and that is people

1 value being able to communicate with health care
2 and medical providers, finding out what's going on
3 in their community, contributing to economic
4 growth, communicating with government officials,
5 sharing their views with others about key issues.
6 Most of my research at the Pew Internet Project
7 looks at the impact of the Internet on health
8 care. What we find is that 80 percent of Internet
9 users have looked for health information online.
10 The Internet is essentially the de facto second
11 opinion in the United States and while that is
12 something that some people have decried for years,
13 evidence is emerging that it's not all bad, that
14 especially as people are able to connect not only
15 through search engines, to text, and frankly
16 Wikipedia is a major source of health information,
17 but also the video, the blogs, the personal
18 stories that people are finding so useful as
19 they're making health care decisions. It's the
20 ability to contribute to the Web as well as
21 access, the high-speed content that they need, to
22 make good health decisions. In our most recent

1 survey we found that 60 percent of Internet users
2 go online for health information say they or
3 someone they know have been helped by what they
4 found online, and that's up from 31 percent in
5 2006.

6 We also ask the converse question, Have
7 you or someone you know been harmed? It's a flat
8 line at 3 percent. So we're not seeing a lot of
9 harm from accessing health information. We're
10 seeing a lot of people who are helped. What I
11 would say is that if we're going to continue to
12 move forward in terms of the significant impact,
13 the positive impact that we see on the reasons
14 cited on this slide, but especially in health care
15 as we move forward with electronic medical
16 records, e-patients need broadband.

17 Here are some of the reasons why people
18 who continue to maintain a dial-up connection or
19 do not have access to the Internet cite for not
20 having broadband at home. As you can see, the
21 relevance to their lives is the most cited reason.
22 Price and availability and usability are cited,

1 but less so than relevance. Again I would say
2 that health care is a possible leverage point,
3 that what we find is that questions about health
4 and health care, the options you have for
5 treatment, is something that all Americans care
6 about and people are more and more used to being
7 able to use the Internet as an information
8 utility, and are they able to access the best
9 content, are they able to contribute the best
10 content? That's a question.

11 I recently heard a presentation at the
12 CDC about how people are able to give low literacy
13 populations the opportunity. It's often a
14 caregiver who gives that information. So I'd like
15 to talk about the second degree access that comes
16 with people who are offline or on dial-up who may
17 have somebody in their personal network who have
18 broadband.

19 In conclusion, what we're seeing is that
20 Boomers are transforming the senior demographic.
21 We're seeing lower income families stretching to
22 attain or maintain connections to this information

1 utility. And we see that it's a utility that's
2 enabled by broadband and enabled by mobile access.
3 The relevance is going to be the most important
4 factor that we see, so highlighting stories where
5 we see that relevance. By the way, they're in the
6 paper every day about somebody reporting that it
7 really made a difference that they were able to
8 search online to get the right information at the
9 right time to the right person. Thank you.

10 MR. HORRIGAN: Thanks very much,
11 Suzannah. We're going to continue down the table
12 to Peter Stenberg from the United States
13 Department of Agriculture's Economic Research
14 Service. Peter has done some of the best work on
15 rural broadband issue. Peter?

16 MR. STENBERG: Thank you. I'd like to
17 talk to you about a report that is just coming out
18 and I'm just going to give you some highlights for
19 our meeting today.

20 On the first slide you'll see a couple
21 points here. As was already pointed out, there is
22 a gap between rural areas and urban areas with

1 regard to Internet access. What's not seen here
2 is that if you look at across incomes you'll find
3 that actually the difference disappears within
4 income groups. But when you look at broadband
5 within income groups for those who have Internet
6 you'll see that there is a gap between rural areas
7 and urban areas. It doesn't matter what your
8 income is, you're going to have some difficulty in
9 getting broadband.

10 In taking a look at FCC data, this is
11 taking a little different twist on how you present
12 it graphically, and that's looking at it more in
13 regard to how is it delivered compared to central
14 places or from more urbanized areas and looking at
15 the growth over time between 2000 and I believe
16 2006 I think I had on this particular graph or
17 map. You can see that the higher population
18 densities had much more provision of broadband,
19 but this concept uses the idea that as I said the
20 service radiates out of urban centers. In our
21 analysis we looked at a different idea and tried
22 to turn around this data asking what does it

1 really mean with regard to your likelihood of
2 actually having access? Here we're using some
3 additional information with regard to adjoining
4 areas or in this case Zip codes, do they have
5 access to it? If they don't, you're reduced. It
6 also uses population centroids, and once you go
7 beyond this population where does it spread? We
8 brought this back to a county on this particular
9 map just to show you what the average penetration
10 potentially is in these countries. It's just one
11 way of getting around and getting some other
12 different idea in regard to what is out there.

13 We have some additional data at the
14 Department of Agriculture. We have actual surveys
15 of what we call the June ag surveys for farms.
16 Farms as you know are traditionally outside of
17 urban centers. So we can say a several things
18 about these farms outside the urban centers. The
19 ones that have broadband have DSL. They do not
20 choose on average satellite. There is apparently
21 some hesitancy to use satellite for whatever
22 reason, it doesn't provide the service they need

1 or it's a higher cost or whatever, but there seem
2 to be some issues with regard to that. With this
3 data we could also look a change with regard to
4 where broadband access changed between 2005 and
5 2007. Excluding those who already had broadband
6 in 2005, this is where the changes occurred or a
7 higher degree of change occurred at farms, and the
8 darker the area the greater the change. On the
9 map what you'll see is Illinois and Arkansas are
10 excluded. It's because of issues with regard to
11 how we collected the data in that we were not able
12 to match up the data one to one that we were able
13 to do in the other states, so there was a change
14 in survey methodology.

15 We also know that farms buying over the
16 Internet, buying inputs or selling over the
17 Internet, were more likely to have changed during
18 this period. Again the convergence was nearly
19 nonexistent in areas where broadband was not
20 available outside of satellite. The ones that
21 were most likely to convert were the ones who
22 already had Internet. If you didn't have

1 Internet, it was not too likely that you were
2 going to broadband directly. There still is
3 conversion to Internet, but it has slowed down
4 greatly to around 60 percent of farms having
5 Internet.

6 In conclusion since I'm running out of
7 time, the data shows some sharp differences across
8 the country also considering changes over time
9 giving some credence to the common hypothesis that
10 people do choose to use broadband if given the
11 option. Conversions actually were nearly
12 nonexistent in areas where broadband was generally
13 not available outside of satellite provision.
14 Farms were unlikely to make the direct jump to no
15 Internet use to Internet use. Approximately 24
16 percent of farms that already had Internet
17 broadband in 2005, there was an additional
18 conversion. DSL service has been the most common
19 broadband Internet service, although some do have
20 cable, but very small percentages have satellite
21 or wireless. While broadband access has been
22 available to take up Internet access, there are

1 other factors that are also limiting broadband
2 Internet use such as price of access, age of user,
3 household income and educational attainment.
4 Thank you.

5 MR. HERRIGAN: Thank you very much,
6 Peter. We will turn now to Christopher
7 Guttman-McCabe from the Wireless Association which
8 also reminds me to remind you to make sure your
9 cell phones are off during the rest of these
10 presentations.

11 MR. GUTTMAN-MCCABE: Thank you, John,
12 and thanks for the invitation.

13 It's a pleasure to be here to talk a
14 little bit about where the wireless industry is
15 today and from a broadband perspective where the
16 industry is evolving. Today there are over 271
17 million wireless customers in the U.S. many of
18 whom take advantage of broadband networks, devices
19 and applications. They used over 2 trillion
20 minutes of use last year alone and sent over 1
21 trillion text messages, pretty staggering numbers.

22 Regarding the question that we were

1 posed about what is the current data and what are
2 the trends on adoption and utilization, I think
3 it's important to understand where the wireless
4 ecosystem is in terms of its evolution. In order
5 to better understand where we're going, I think we
6 need to have a sense of where we are now and how
7 customers are going to respond. In addition to
8 working with third parties like John and Suzannah
9 and Pew and others, CTIA has conducted a
10 semiannual survey since 1985 and the carriers to
11 that survey represent 96 percent of all wireless
12 customers. The survey obviously has evolved over
13 time to match the wireless industry moving from as
14 you see on the left side of that chart the early
15 cellular side of the business to digital and now
16 to broadband.

17 Data from CTIA's surveys show that more
18 than 89 percent of the devices on carriers'
19 networks are data capable, 88 percent are SMS
20 capable, and 84 percent are Web capable. Those
21 numbers I would say are pretty extraordinary when
22 you think that just 14 years ago there were less

1 than half a million wireless customers who had
2 digital handsets alone.

3 When you look at this side and it talks
4 a little bit about capital expenditures, you get a
5 sense of the incredible growth in the industry and
6 that broadband has been driven by the continuing
7 investment in wireless networks. According to the
8 U.S. Census, wireless carriers invested an average
9 of \$22.8 billion each year over the last 10 years.
10 As a result, you'll see that 96 percent of all
11 Americans live in areas with at least three
12 wireless providers, 90.5 percent have four or
13 more, and about 65 percent have five or more
14 providers. So in the past when we've talked about
15 a third pipe to the home, I think that concept has
16 been overtaken by reality in that we now are
17 talking about Internet or broadband to the person,
18 not necessarily to the home. With the ongoing
19 build-out of third generation or 3G networks,
20 EVDO, HSPA, and then what we're seeing with regard
21 to the fourth generation with Wi- MAX deployments
22 now and Links Company and others pushing for LTE

1 deployment, I think we're going to see an
2 explosion of the availability of broadband. The
3 U.S. has 23 percent of the world's high-speed GSM
4 subscribers, and 59 percent of the world's
5 high-speed CDMA subscribers, which are impressive
6 numbers when you realize that we have 5 percent of
7 the world's population.

8 This incredible level of investment has
9 led to what we're calling a virtuous cycle in
10 innovation that is flowing from the improvements
11 and the evolution of the networks. So you're
12 seeing expansion of what used to be a brick phone
13 to now what is, for lack of a better term, a
14 personal portable computer. Thirty-three
15 companies now manufacture over 600 distinct
16 devices and handsets into the U.S. market, and 7
17 million devices now include wireless enabled
18 laptops, netbooks and other types of aircards.

19 We're also seeing an explosion in the
20 area of data and data applications. We have over
21 85,000 applications launched just in the last 14
22 months since the iTunes App Store opened in May of

1 last year. And according to Cisco, you're going
2 to see a significant explosion in wireless data
3 use expected to actually double every year for the
4 next 4 years. A great illustration of this is
5 what we've seen regarding mobile uploads to
6 YouTube. According to YouTube's blog, mobile
7 uploads to the site have increased 1,700 percent
8 in the last 6 months with a 400 percent per day
9 increase after the 3GS was launched, and these are
10 just mobile uploads. These statistics I think are
11 designed to show you not only where we are but
12 also what is coming down the pike. With higher
13 speed networks, third- and fourth-generation
14 devices, exploding applications markets, the
15 ecosystem is just changing before our eyes. And I
16 wouldn't be doing my job if I didn't put in a plug
17 right now for the need for additional spectrum to
18 bring spectrum into the pipeline.

19 I think going forward one of the biggest
20 challenges is going to be how we're going to
21 factor in wireless. When you look at OECD
22 measurements, they explicitly exclude wireless

1 broadband. How are we going to factor in things
2 such as prepaid and a la carte services? How do
3 we factor in these low volume and lower income
4 customers and their use? I think that's going to
5 be a challenge. Going forward we're going to have
6 to look at things regarding access, affordability
7 and content. Access obviously is beginning to
8 happen. We're seeing the networks and their
9 devices improve. As for affordability, I think
10 it's fair to say from the wireless context that we
11 offer prepaid, a la carte, postpaid and buckets.
12 I think that gives a range of pricing options that
13 are not available in the other broadband services.
14 Then as to content, I think it's also fair to say
15 that CTIA's members, the competitive carriers,
16 will help drive the demand side of this.

17 Going forward I have a few more slides,
18 but I think it's fair to just look at the last
19 slide. When you get to broadband use, often times
20 you talk about DSL and cable and wireless is
21 forgotten except for by the customers. If you
22 look, this is an FCC chart, the explosion at the

1 tall part of the bar chart there is wireless.
2 Wireless has been more than half of the recent
3 additions from broadband in terms of broadband
4 additions and it's about to cross over to be half
5 of all total broadband subscriptions in the United
6 States. So going forward I think the key is going
7 to be how is the FCC going to get a sense, or NTIA
8 or others in the federal government, of wireless
9 use? How do you measure a la carte or by usage?
10 And by the way, Suzannah, I'm glad you said this,
11 you can't use a landline call now to ask those
12 questions because 20 percent of American's don't
13 have landlines. So it's a difficult concept and
14 it's going to involve organizations like Pew and
15 others doing studies and surveys to get a sense of
16 where wireless fits in. I look forward to any
17 questions.

18 MR. HERRIGAN: Thanks very much,
19 Christopher. We'll move now to Link Hoewing from
20 Verizon. Link?

21 MR. HOEWING: Thank you, John.
22 Broadband is not just faster connections than

1 dial-up, it's also always on connectivity as well.
2 Today broadband allows people to stay connected
3 unlike the dial-up era, and this has meant people
4 are truly a node on the Internet and has allowed
5 for a host of new applications to blossom. Many
6 do not take a lot of bandwidth, but they've been
7 truly transformative, and instant messaging is a
8 good example for hearing impaired people. So both
9 wired and wireless broadband connections are
10 helping people access the sources they need.

11 My assessment is that about 80 percent
12 or 85 million or 90 million households now have an
13 Internet connection. Some 70 to 75 million of
14 these households have a broadband connection. The
15 rest have dial-up. The remaining 20 million or so
16 households have no connection to the Internet. Of
17 these households, most could get dial-up access
18 and more than half could get broadband
19 connections, so that's where I think we are on
20 kind of a global basis.

21 Experts in technology adoption like Pip
22 Coburn point out that adoption is not a simple

1 case of price, choice and better technology. As
2 Coburn says, "Change occurs when a user's crisis
3 is greater than their total perceived pain of
4 adopting a possible solution." What he means is
5 that many technologies require us to learn how to
6 adapt to and use them most effectively, and we are
7 all aware that when we try to adopt new software
8 it is kind of challenging and sometimes it can
9 even seem like it's way too much to try to take
10 on.

11 That said, broadband adoption has been
12 one of the fastest technology adoption stories in
13 our history and use of technology in this area has
14 been growing very rapidly. Suzannah already
15 referred to the Pew data, and if you'll look at
16 the orange there on that, you can see how fast
17 that slopes up and that's broadband adoption. So
18 it's been very rapid adoption.

19 The speeds have also been increasing as
20 well, and as a result you see people a lot more
21 online, especially uploading data as Chris just
22 mentioned. As a result of these trends, we now

1 see customers spending far more time online which
2 is what this slide shows. It's not uniform as
3 I'll talk about in a minute, but it is a major
4 trend in the industry.

5 Looking at the data from a wide range of
6 sources, and we have access to a lot of it at
7 Verizon and I spend a lot of time looking at it,
8 not only Pew, but Forrester, LRG and a number of
9 other analysts, it appears that the following
10 points as for adoption are valuable insights that
11 I wanted to put on the table. First, seniors,
12 those 64 and over which is about 39 million people
13 and 23 million households, have lower adoption
14 rates, 50 percent have Internet connections, but
15 only 33 percent have broadband, and this is much
16 lower than other age cohorts. They spend the last
17 time online as well and use the fewest types of
18 applications. Gen-Yers who are 18 to 28 year
19 olds, and Gen-Xers who are 29 to 42 year olds, do
20 virtually everything online. They are connected
21 by and large and will grow up that way. That is
22 110 million adults and about 44 million

1 households. Income and education as has already
2 been mentioned are factors that contribute to
3 lower adoption. Most homes with incomes above
4 \$75,000 are connected, but only half the homes
5 with less than \$30,000 income are, and 37 percent
6 of them have a broadband connection. Rural
7 customers as was referenced have less broadband
8 connectivity than customers in suburban areas or
9 urban areas. This is partly because broadband is
10 not as available as we already know, but it also
11 be due to things like lifestyle differences. For
12 example, there are more blue collar workers on
13 average in many rural areas, and many of them
14 don't have access at work and don't get exposed to
15 the technology. It's also likely due to the fact
16 that more seniors on a proportionate basis live in
17 rural areas, and they're lower income or on fixed
18 incomes, and that also could be a major factor.
19 While some ethnic groups like African Americans
20 are less connected at home proportionate to their
21 population than other groups, many of these
22 customers at middle and upper income levels are

1 connected at pretty much the same levels as
2 whites. So some ethnic groups tend to be
3 disproportionately represented in the low income
4 population, and that's another reason why it may
5 be true that they are not as connected at home.
6 Here an interesting factor to me is that African
7 Americans on average are much more aggressive
8 users of mobile data services and mobile access to
9 the Internet than are whites, so it could be that
10 we're also not looking at this widely enough, that
11 in fact people are connecting in ways that we're
12 not taking into account and they find certain ways
13 to connect more comfortable than others.

14 Let me end with a couple of examples of
15 ideas on how to promote more adoption because I
16 think this is an important part of the discussion.
17 We are past the early adopters and the mass market
18 adoption curve. We are now at the top of the
19 adoption curve which is the most challenging in
20 any technology phase and is very common in
21 technologies, so we have some challenges
22 remaining, as I said, primarily seniors, some

1 rural customers, again low income as well. As
2 Coburn suggests, a piece of this is making the
3 technology more adoptable and easier to transition
4 to, so services online in general are important to
5 be improved and to make intuitive to use. I have
6 a mother-in-law who lived with me until she was
7 96. I had to go Medicare applications for her,
8 and I can tell you that the online Websites are
9 just not as intuitive as they should be for
10 seniors, and one of the reasons they may not be
11 accessing the services is because they are not
12 easy to use. So that's an area that we can
13 certainly focus on, making them more intuitive,
14 and people probably know Cass Sunstein who is now
15 in the administration and he's written a good book
16 called "Nudge" which talks a lot about how to make
17 decision trees and how to make decisions easier to
18 use, and with online services that's an important
19 part.

20 Second, about 9 million Americans are
21 functionally deaf or hard of hearing, another 22
22 million report vision loss which means they can't

1 see without glasses or other kinds of aids, and
2 these people need other ways to access the
3 Internet too. They're not online very much. One
4 of the things we can do is make the technology
5 easier for them to adapt to. Verizon for example
6 has a device called the Talk Blackberry which
7 actually takes audio data and turns it into text
8 for people, so that's one way to do it. And also
9 text messaging is another to do it for people who
10 are hearing impaired as well, and we have a
11 service that is essentially a text messaging
12 service without voice attached to it and all they
13 do is pay for text messaging and Internet access.
14 That's another one of our wireless services.

15 Finally, many of those not online, low
16 income customers, customers whose jobs are in
17 lines of work where they don't access broadband on
18 a regular basis, and again seniors who are not
19 familiar with the technology, are simply not used
20 to broadband technology and using computers, so
21 focusing on both promoting computer ownership and
22 training possibly in public libraries for example

1 is a good strategy. Thank you.

2 MR. HERRIGAN: Thanks very much, Link.
3 We've thus far had some great perspectives on
4 broadband thinking about health care applications,
5 rural adoption issues, wireless, and Link was just
6 talking about accessibility issues among other
7 things. We turn now to Karen Archer Perry,
8 followed then by Kate Williams, who are going to
9 give us a view from the ground up on some of the
10 issues of broadband in communities, and these two
11 presenters have done great work in communities and
12 the community networking field for a number of
13 years. So let me turn first to Karen Archer
14 Perry.

15 MS. PERRY: You did my whole
16 introduction for me. Thank you very much.

17 I wanted to touch on three different
18 topics specifically related to adoption and
19 utilization. The first one is increasing the
20 intensity of broadband use and adoption among all
21 user groups. The second one is overcoming
22 barriers and accelerating adoption among those who

1 are still on the wrong side of the digital divide.
2 And the third topic is the implications that is
3 going to have on what we need to measure.

4 Before we talk about the digital divide
5 issues or that late part of the adoption curve
6 that Link spoke about, I want to go back to
7 Suzannah's point about the intensity of use.
8 Health care and education are among the heaviest
9 bandwidth users from a vertical segment
10 perspective, but if you look at those segments,
11 the difference between the leaders and the
12 mainstream is huge. In the education sector,
13 people like Will Richardson who's a blogger and
14 educator, Michael Searson who runs the Center for
15 Innovation in Education, Milton Chen who runs
16 Edutopia, Marco Torres who is a video producer in
17 San Fernando Valley, are all huge innovators and
18 they use broadband to create peer learning
19 experiences to dissolve the walls of their
20 classrooms and to make their classrooms global, to
21 teach kids and adults how to communicate in a
22 multimedia world, to teach information literacy

1 and to develop action oriented education programs.
2 All that is available to us in all levels of
3 education, but there are so few educators who
4 actually use that capability.

5 I've talked to teachers and
6 administrators in schools who have explained to me
7 that their technology integration plan was
8 PowerPoint, and I've talked to deans at
9 educational institutions who have told me that
10 their students now are graduating without the
11 ability to use tech integration in the classroom
12 in an effective way. So when it comes to
13 broadband adoption we need to think not just about
14 bringing everybody up to the bottom, but in order
15 to drive America forward and to get the true value
16 that we want out of the Internet, we need to
17 measure the intensity of applications in
18 education, in health care and in economic
19 development fields among others.

20 Second, I wanted to overcoming barriers
21 or the digital divide. Years ago when I worked in
22 Philadelphia I developed the first digital

1 inclusion strategy for that community and we
2 talked about motivation, access, confidence and
3 enrichment. Motivation is finding the hook,
4 what's in it for me to get engaged? Access is
5 around broadband, devices and software.
6 Confidence is having the skills and the
7 understanding to use the technology as well as
8 being comfortable with the safety and security of
9 working with the Internet. And enrichment
10 addresses the fact that getting online is not a
11 binary experience, first you aren't and then you
12 are, it's a lifelong learning experience around
13 increasing the relevance over time.

14 My empirical field data actually matches
15 up with Suzannah's quite well, only I would say it
16 differently. Whether you look at the Pew data
17 that says that 37 percent of the people in the
18 country are not broadband connected or you look at
19 the Mediamark Research & Intelligence data that
20 I've been looking at lately that says it's 47
21 percent, in every community I go to I figure at
22 least half of those people are ready to be online

1 and need help getting over the hump. And my
2 experience tells if you get that half online,
3 they're going to bring their friends. So rather
4 than focusing on the half that hasn't found the
5 relevance, I usually in my programmatic work focus
6 on the half that has seen the relevance and just
7 needs help overcoming the barriers.

8 So what are the barriers that hold
9 people back? Sometimes it's training. One study
10 in a farm community out in a Navajo community, one
11 of the researchers commented that, "Physical
12 infrastructure is a necessary condition to bridge
13 the digital divide, but social infrastructure is a
14 sufficient condition to bridge the digital
15 divide." I went from a mainframe to a PC in Bell
16 Labs where my roommate was Gary and there were 10
17 people down the hallway who could answer my
18 questions. I had a huge social infrastructure to
19 help me overcome that technology gap. In
20 communities where people don't have that social
21 infrastructure, they are at a loss. So training
22 is not about a class. Training is about a social

1 infrastructure that supports people in adoption.
2 For some people it's the PC, but don't
3 get caught in a chicken and the egg thing about
4 the PC, the Internet, the PC, the Internet.
5 People can get a PC. They can get a used PC.
6 They can buy a PC on time. There is a whole range
7 of models for both PCs and other Internet
8 available devices. The largest challenge for new
9 users what's a gigabit and how is the RAM, and
10 what do I pick that's the right to meet my needs?
11 So it really goes back to that education and
12 social infrastructure. For many people it's the
13 recurring cost of the Internet and the Triple Play
14 is really not a big winner for people who have
15 given up their landline phones. I have learned
16 that in low income communities apparently your
17 phone bill is one of those things that you don't
18 pay first, so the credit checks are also a
19 challenge, and the prepaid programs are wonderful.
20 For some people it's literacy levels, and for
21 those with English as a second language, it's also
22 accessible content, for people with disabilities

1 it's about assistive technologies and about
2 Websites, so it is not a one thing solution. It's
3 about having a network capability that helps
4 people with the adoption.

5 We've learned a few things over the past
6 few decades about community, technology and
7 adoption. We've learned that good programs are
8 embedded in established social networks, we've
9 learned that they are high touched, we've learned
10 that they provide continued formal as well as peer
11 support to engage, train, equip and support
12 people, we've learned that they promote not just
13 the training part, but they help people find the
14 affordable access program that works for them, and
15 we've learned that you have to integrate the
16 technology training with at least one application
17 that helps me do something I want to do in my life
18 whether it's looking for a job or getting health
19 care information or sharing pictures of my kids.
20 I will skip how do we measure because I'm over
21 time.

22 MR. HARRIGAN: That will set up a

1 question for you later then, low hanging fruit on
2 questions on how to measure. I will now turn to
3 Kate Williams. Kate, the floor is yours.

4 MS. WILLIAMS: Thank you. I am here
5 representing the new emerging field that's called
6 community informatics. That's a field that
7 studies how local communities use information
8 technology. There are a number of us around the
9 country and around the world and we're
10 concentrated at the University of Illinois.

11 What I want to talk to you about today
12 is I want to propose to you that we are facing a
13 data paradigm shift, in fact, some people have
14 already made this shift. To start with I want to
15 explain what a paradigm shift is. It's when you
16 have an entirely new model of reality and it
17 enables you then to do totally different things.
18 WE used to think that phones had to be leashed to
19 a wall. As soon as we unleashed the phone from
20 the wall, suddenly we found ourselves leashed to
21 the phone. So that's an example of a paradigm
22 shift that we've all lived through. A lot of what

1 I'm going to tell you now about the data paradigm
2 shift is based on our research on TOP which was
3 the predecessor program to BTOP which is in the
4 process of channeling all this money to
5 communities to get on broadband.

6 The first point I want to make, and this
7 is something that Karen has said, is that we use
8 broadband in networks, and yet our very best known
9 data is about individuals and households, and
10 that's the Pew data and the CPS data. Everybody
11 around the table here has started to talk about
12 those social networks, those groups, those
13 organizations that actually use broadband whether
14 it's the dyad of the person who's ill and their
15 caregiver, whether it's a farm, whether it's a
16 classroom, or as Karen put it, the social
17 infrastructure that is really what propels
18 broadband use. So let's think about a shift from
19 individual use to social use.

20 The next change I want to propose is
21 that we collect data after the use happens. What
22 if we collected at the time and place when it

1 actually happened? The best example that I can
2 think of that we're all familiar with is when you
3 go to the grocery store, as soon as something is
4 swiped across that reader, the data about your
5 purchase is at the cashier of course so you know
6 she knows what you should pay, it's in inventory
7 so they know what to order next, and it's in
8 marketing so they know how to get you to buy more
9 of it or maybe less of it and more of something
10 else. What would happen if we collected data
11 right at the point where the action is? For us,
12 we studied TOP in 2004, 2005 and after, and TOP
13 actually ended right then. Whereas with BTOP
14 we're in a position to study BTOP as it unfolded,
15 how are all these communities taking up broadband
16 and using it, so we're really excited about that.

17 The next aspect of this data paradigm
18 shift is we're used to researchers disseminating
19 findings to others, and you're looking at a set of
20 researchers who are off in different sectors, but
21 are the ones who are analyzing and disseminating
22 the findings, and as long as we do it pretty

1 slowly especially when the academy, let's design
2 things that many people can generate findings from
3 data and that way we can use those findings that
4 much quicker. Let's speed things up. Let's do
5 things at broadband speed instead of dial-up
6 speed, so to speak.

7 The last thing on here that you can't
8 see too well is that we're used to data and
9 analysis being proprietary. Pew and CPS are
10 examples of the future because they share their
11 data because everybody has talked about data sets
12 that I don't even know about here at this table,
13 what if we found a way to put our data in a data
14 commons where we could all get at it and all use
15 it for different reasons, for the different things
16 we want to use it?

17 What the University of Illinois is
18 proposing to do is to enact this paradigm shift in
19 the following way. What we are in the process of
20 putting together is what we call a data engine.
21 We are taking broadband experience, raw and
22 immediate as we can get it, we are putting it into

1 a cyber environment which includes the data and
2 analytical tools, and then we are able to present
3 meta data and meta analysis both to researchers
4 and to policymakers at all levels, so present it
5 back to people who are running a CTC, a public
6 computer center. Maybe they want to know the data
7 about how people are using their particular center
8 of the week or over the month, or they want to
9 compare it to other centers. We can do that and
10 they don't have to wait for someone else to crunch
11 that data, they can look at it. Then both of
12 those communities, policymakers and researchers,
13 can share what they see to various publics,
14 whether it might be Congress, whether it might be
15 the public in their town that wants to understand
16 how do we better make use of these public computer
17 centers or other ways of getting on broadband and
18 so forth, so we have a much speeded up cycle of
19 understanding what is happening with broadband
20 experience in this country so that we can then get
21 behind whatever is working and make it work even
22 better.

1 One of the ways that we started thinking
2 about this data engine, most engines have a
3 dashboard connected to them if you think about the
4 four wheels that you ride down the street. The
5 dashboard is where you're able to see what the
6 engine is doing. You're able to look at those
7 dials and understand and moderate the performance
8 of your vehicle. We'd like to be able to do the
9 same thing so that we can take a concept like
10 relevance of information and have a very fast
11 picture of how that is happening with regard to
12 health information. We can take a question like
13 uploading and look at what are people uploading?
14 Where is the exciting uploading that's happened
15 that's attracting downloaders?

16 What we're doing with this tool, DEPR,
17 Data Engine for Policy and Research, is that we're
18 working with programs in order to help them
19 identify and harvest the data that they're
20 deciding to collect in order to do their work,
21 just that average management data that they use
22 day to day, we're combining that data with

1 analytical tools, and I'm listing them here on the
2 slide, so GIS, text mining, statistics, et cetera,
3 and then we're providing that package of data and
4 tools back to program managers and other
5 policymakers via an online interface. Then last
6 of all of course we're offering our own
7 researchers' analysis of that data back to them as
8 well.

9 I just want to show you real quickly the
10 sort of thing you can do. This is a text cloud of
11 a segment of the Website of broadband.gov that,
12 and if you take the text that is put up on
13 broadband.gov that explains to people what
14 broadband is, this is what they're reading. This
15 is a summary of what they're reading. We can
16 think about what audience is going to be grabbed
17 by those words and what audience perhaps we might
18 be missing and we could calibrate what it is we're
19 saying on broadband.gov about broadband. I look
20 forward to questions, and thanks a lot.

21 MR. HARRIGAN: Thanks very much. Thanks
22 very much to all the panelists. We do now have

1 time for questions. I think I'll throw out the
2 first one. It was a question I was scribbling
3 down when Karen said I'll talk about a measurement
4 later. I would like to give Karen a chance to
5 talk about how we measure some of the impacts of
6 broadband, so I'll direct the first one to Karen.

7 MS. PERRY: I am very humbled by the
8 fact that I am on a panel with people who do a lot
9 more measurement, so my measurement comments come
10 very much from my field experience.

11 I wanted to quote Mark Cooper who I
12 understand was here at one of the earlier panels.
13 He described an unserved home as a home without
14 Internet and an underserved home as a home without
15 broadband. I would add to that that an
16 underserved home is also one where there's
17 insufficient bandwidth to meet the application
18 needs of the users. In my experience, I am amazed
19 at how many public schools are underserved by
20 broadband, are highly limited in the types of
21 programs that they can offer because they have
22 connections going into the schools that equal to

1 the connection that Verizon provides me at my
2 house in New Jersey. So I do think we do need to
3 measure who's unserved and who's underserved. We
4 need to measure the intensity of use by vertical
5 segment and to really look at as Ashok Chopra
6 spoke at a recent event I was at and he talked
7 about how important it is that applications be
8 easy, that adapting to medical health information
9 records should not be a 6-month, \$50,000
10 experience for a small practitioner, it should be
11 easy. So we need to look at the intensity of use
12 by vertical, we definitely need to look at
13 information literacy, and we need to look at new
14 adopters by demographic both in the kind of work
15 that Pew and others do as well as the kind of
16 focus group work that is done.

17 MR. HERRIGAN: Thank you very much.
18 That actually helps a lot in helping us think
19 about what to measure as we proceed with the plan.
20 I'm joined up here by a number of FCC colleagues
21 who have come armed with questions. What I'd like
22 to do is give a chance for some of my FCC

1 colleagues to direct some questions to the panel.
2 Maybe I'll turn first to Kirk Burgee, if you have
3 anything in your queue, and then proceed over to
4 Sarah and Nese on the other side of the dais.
5 Kirk?

6 MR. BURGEE: Thank you, John. We asked
7 some questions in our Notice of Inquiry on the
8 National Broadband Plan about the impact of
9 privacy concerns on Internet adoption and use, and
10 I'll just sort of throw it out generally. What do
11 we know about that at this stage and what else do
12 we need to know about it?

13 MS. WILLIAMS: First we could say that
14 there is a generational shift. There is a
15 paradigm shift going on. Young people are
16 positively reckless from our older head's point of
17 view about privacy. They accept that it's gone
18 and they don't really care and they're managing to
19 find the good in that because when they let it all
20 hang out then different things happen than happen
21 to those of us that are cautious and guarded. The
22 one thing I would say in addition to that is that

1 we have masses of data stored about us everywhere
2 and we are not all harnessing this data
3 effectively. There are ways that we can use these
4 masses of data to still protect people's privacy
5 concerns and yet use the data in summative kinds
6 of ways to really understand what's going on in
7 terms of human behavior with broadband.

8 MR. HOEWING: There are probably things,
9 Kirk, on that that I can suggest. We've done a
10 lot of work recently revising, not revising, but
11 pulling together into one place all of our privacy
12 policies to make them easily understandable. One
13 is that there are different types of data on
14 people and some are more sensitive than others, so
15 we certainly know that health care, for example,
16 health information is very personal and sensitive
17 to people, so treating that differently is
18 important. People don't feel the same necessarily
19 about what I would call marketing data, in order
20 works, accessing a Website and surfing. They
21 still are concerned that people collect the data
22 and use it without their knowledge, but they also

1 understand that happens.

2 A second thing is that people don't like
3 surprises. Company need good policies, they
4 should be understandable and they should follow
5 through on them. What really concerns people is
6 when data is used in ways they didn't expect it to
7 be used, so companies should be very firm on that.

8 Third is customer choice. They should
9 have some ability to be able to make choices about
10 whether or not data is collected on them and how
11 it's going to be used and stored. Recently a
12 bunch of companies got together who are involved
13 in advertising on line and Verizon was a part of
14 that, and that was one of the things that we did
15 in our privacy principles that we laid out was to
16 make sure that all the companies adopted policies
17 that very much focused on giving customers choices
18 about whether data was collected and how it was
19 stored.

20 MS. FOX: I would actually add a book
21 recommendation, "Understanding Privacy" by Daniel
22 Solove. It started out as a Law Review article

1 looking at the taxonomy of the, the legal term.
2 It turns out to have 12 meanings. I think that
3 that's essential to any privacy debate, don't use
4 the word privacy. Talk about confidentiality,
5 talk about anonymity, talk about data security,
6 because it's absolutely true that young people
7 have a completely different idea of what is
8 available about them and what they want to make
9 available because they feel that they can remain
10 anonymous, they have screen names, they are really
11 savvy. We've done some survey work asking people
12 about how findable you are online. Boomers? They
13 stay in the same place. They're listed in the
14 phone book. They're very easy to find. You can
15 find a lot of information. Gen-Y, not so much.
16 They're on their cell. So they have very
17 different ideas, so to be precise about that kind
18 of term and what the concerns are, because in
19 health care for better or for worse we see privacy
20 used almost as a goal when better health really
21 should be the goal.

22 MR. HARRIGAN: Thanks. Let me see if

1 Sarah has a question for the panel.

2 MS. WHITESELL: One demographic group I
3 was wondering about is the group who doesn't speak
4 English predominantly or mostly speaks another
5 language. Karen, you spoke to that a little in
6 terms of what one barrier to adoption may be, but
7 I wonder how we best track adoption for that group
8 and what some of the other barriers might be and
9 whether they're the same sorts of barriers or are
10 unique?

11 MS. PERRY: I'm not as good on tracking
12 the adoption because I mostly to do work in
13 promoting adoption, and because one of our core
14 principles is the social infrastructure principle,
15 that people need their own social infrastructure,
16 what we usually have done is we work with groups
17 that at already serving that demographic. There
18 was a wonderful woman in Fairfax County who did an
19 entire digital literacy curriculum that was
20 pictorial because she had so many different
21 immigrants in her classes. It wasn't just
22 translate this to Spanish and Hmong and you're

1 fine, it was even more challenging than that. So
2 he did a pictorial program.

3 I think in terms of driving adoption in
4 those groups, when the training is done by local
5 people who understand the policy, when we did a
6 free fare in Northern Philadelphia, one of the
7 applications we demonstrated was immigration
8 services online and reading the newspaper in your
9 home country in your home language online as a
10 motivating application. So I think the
11 applications are there and helping people find it
12 amidst the massive content is a little bit more
13 challenging because you have to be a little bit
14 more selective, but the measurement I can't really
15 speak to.

16 MR. HOEWING: This is a harder area, but
17 we do have some data with Hispanics, particularly
18 Hispanic families, and those who speak English as
19 a primary language in the family tend to be at a
20 fairly high level of adoption versus those who
21 speak Spanish as their primary language in the
22 home. One of the things about the data which is

1 another reason to start again doing cross-cutting
2 analysis of some of this because there is data on
3 some of this but it's not really sometimes
4 analyzed with the different factors is that it
5 could be that there are cultural issues, too, that
6 there tends to be at least in some of these
7 families more fear of Internet access because of
8 the kinds of content that's online. The family
9 practices tend to be ones where they're more
10 concerned about those kinds of things. So it
11 could be some of those factors and maybe not
12 language alone that is a factor. That's why in
13 one of the things I was stressing when I talked
14 about seniors online is that the data from
15 Forrester that I spent a lot of time looking at is
16 very, very detailed and it has good cross-cut
17 information. You can cut it in a number of ways
18 in other words. If you look at seniors as a
19 cohort, it is clear they're online less than other
20 groups. Part of that is the normal technology
21 curve as I showed. They're kind of at the top of
22 the curve, in some segments they tend to be last

1 to adopt and it could be that in part. It could
2 also be that seniors tend to have fixed incomes
3 and lower income by and large than many other
4 groups in society and they may be part of the low
5 income group, and also in rural areas where there
6 tends to be more seniors proportionately than in
7 urban areas. That could be a factor as well.

8 MR. GUTTMAN-MCCABE: If I could just
9 jump in on something that Link said, in the
10 Forrester data on seniors, is there indication who
11 are the active seniors online? Who are the
12 cutting edge among seniors? I think it would be
13 helpful to us to understand how big the segment is
14 of seniors who may be very active and cutting
15 edge, and if the data permits us to draw the
16 inference, what might be driving that. Is that
17 something that the Forrester data might help us
18 out with?

19 MR. HOEWING: Not so much who in the
20 senior segment, but certainly the types of
21 applications they use. The two that are the
22 biggest are financial information which is

1 understandable, they're retired and they're really
2 concerned about that very, very much, and secondly
3 is travel. You'd think health care would be and
4 it is, but if you look at studies, the University
5 of Miami did a really interesting study about
6 Medicare access to their Website and whether
7 seniors access is very much and it looks like some
8 of this is just not intuitive enough. So they
9 don't access health care information as much as
10 you would think looking at the Pew data. You'd
11 think that it would be something they'd really
12 spend a lot of time on and they don't spend as
13 much time as you would think.

14 MR. GUTTMAN-MCCABE: I think, John, if
15 you look at One Economy, I think they've done some
16 great work in this space particularly with regard
17 to seniors where they go and they train some
18 younger folks to go into neighborhoods and they
19 become almost the disciples for broadband adoption
20 and they go to senior centers and things like
21 that, and it's about a comfort level. It's about
22 getting at least that part of the community

1 comfortable with the content that's out there, and
2 perhaps more importantly, with the use of the
3 devices. To get to Sarah's question, I think you
4 asked some of a micro level question, but I think
5 there's a big elephant in the room and I think
6 that's part of why I was asked to be on the panel,
7 is that there aren't studies that specifically
8 track wireless broadband use. So we look at a
9 macro level at broadband use in the U.S. and
10 adoption and we say 60 percent of Americans have
11 adopted broadband and we talk about broadband
12 pipes to the home, and yet I think we're missing
13 out on that 40 percent delta, how much of that is
14 covered by people who are extraordinarily content
15 getting their broadband use through a wireless
16 device? If you look at some of the communities
17 that we need to focus on, some of the specific
18 communities, I think Pew does a great job in that
19 Suzannah and John have tracked wireless use in
20 some of the communities. Again it was more of the
21 English speaking, but if you look at the Hispanic
22 community, they're about 35 to 40 percent in terms

1 of wireless access to broadband above the white or
2 Caucasian community.

3 I guess the question is what percent of
4 that remaining 40 percent already is sufficiently
5 served and how do we define that? I'm not sure
6 what the answer is, but as I was sitting up here I
7 think I was being a little bit rude but I think
8 it's appropriate for this panel, I sent a tweet, I
9 downloaded an article and I checked the weather
10 where I am going in 10 days on vacation just to
11 show you is that sufficient?

12 MS. PERRY: The first two were okay, but
13 the weather one? Vacation?

14 MR. GUTTMAN-MCCABE: But I did it
15 purposely. I knew coming in I was going to do
16 those three things just to show you is that
17 sufficient broadband use? I was actually going to
18 buy the book that Link had suggested, "Nudge,"
19 because I was trying to recall last night what the
20 name of the book was, but I thought that was going
21 a little bit over the top and I needed to at least
22 pay attention. My point is, is that sufficient

1 broadband use? I would argue perhaps it is and
2 that community, those people who are using that
3 perhaps exclusively, are absolutely not being
4 measured when we talk about the delta between the
5 60 percent who have adopted and 100 percent of our
6 population.

7 MS. WILLIAMS: I want to differ from the
8 immigrant experience and say that perhaps it's not
9 enough and we can learn that from looking at what
10 immigrant populations are doing. Partly because
11 other countries have zoomed ahead of the United
12 States in some ways we can learn a lot from
13 looking at these communities not as the Mexican
14 American household in Chicago but as the Mexican
15 community that moves between Mexico and Chicago.
16 And I want to speak a bit about China as well. In
17 Chicago when daughters have quinceanera which is
18 the celebration when they turn 15, they connect
19 with video conferencing facilities back in Mexico
20 and the family down there gets to celebrate and
21 converse. The grandmother and the 15 year old and
22 her family all connect via video conferencing.

1 That's not terribly normal for people who live in
2 the United States who might pick up the phone and
3 maybe use their cell phone to go on speaker phone.
4 But video conferencing? Maybe with the
5 quinceanera outfit there on the little girl. We
6 can learn from what communities are doing because
7 they're connected in countries that are doing
8 different things with broadband than we are,
9 perhaps more than we are.

10 The additional example I want to give is
11 China, and for this I refer you to a book
12 "Working-Class Network Society" by Jack Qiu.
13 China is such a huge country that they have
14 internal migrant populations chasing the jobs in
15 other regions of China. These individuals have
16 found ways to stay connected with each other and
17 their hometowns via community technology centers
18 or cyber cafes, and there has been a racing battle
19 in these cyber cafes as to are they going to be
20 more about connecting and using sophisticated
21 applications like that, or are they going to be
22 more about gaming. Chinese society as a whole is

1 struggling with gaming because they're worried
2 about how addictive it is and how it's grabbing up
3 young people and not turning them use. So I think
4 that that points for our research to start looking
5 at immigrant individuals in communities and not
6 just what they're doing here as in -- as an
7 international community of immigrants rather than
8 as individual households here.

9 MR. HERRIGAN: I think this disagreement
10 is important and interesting from the research
11 perspective that challenges the FCC which is
12 charged with doing a survey as part of the
13 Broadband Plan and other researchers to try to
14 understand the interactions between wireless use,
15 broadband or otherwise, and wire line broadband
16 use. I know Pew has broken some ground on that,
17 but I think we have to do a better job of
18 understanding that as we proceeding in doing the
19 Broadband Plan. Let me turn to Nese for a
20 question. Then some of you have submitted
21 questions either by cyberspace or by cards, and I
22 will get to those presently.

1 MS. GUENDELSBERGER: Actually my
2 question was about whether there were any studies
3 out there especially from the user perspective,
4 whether they see mobile, wireless or a substitute
5 to wire line broadband and at the same time if you
6 see some, for example, you gave an example that
7 the African American community is more comfortable
8 using wireless phones. And I also heard that most
9 of the farms have DSL rather than a wireless
10 broadband connection. Are there any studies out
11 there to look at what might be the reasons for
12 those or is there something to do with the cost of
13 providing wireless or mobility has something to
14 play with it, and how do you see going forward
15 households out there adopting both of them or one
16 of them or seeing them as substitutes or not?

17 MS. FOX: One thing is that the wireless
18 report that recently came out by John did show
19 that once we do include in the broader definition
20 of what is Internet access wireless access then
21 the differences between white adults and African
22 American adults disappears. This was a survey

1 that was conducted only in English. We do had a
2 December 2008 survey which was conducted in
3 Spanish as well. So we can talk about some data
4 sources for the Latino data looking at the
5 preference for mobile. But I think it still is an
6 open question. Is it a preference or is it just
7 that's what your friends have? The idea that this
8 is a social norm to have a fantastic mobile phone,
9 a smart phone, rather than a PC, I think there are
10 some interesting research questions.

11 MS. PERRY: From just field knowledge in
12 Detroit where I work in some of the areas where
13 you can't drive down a street that has fully
14 occupied houses, I drove for 40 minutes and didn't
15 go by any streets that had fully occupied houses,
16 and it's a very transient population. It is very
17 mobile. You're mobile all he time, and so the
18 mobility is of huge, huge value in certain
19 communities because people are less tied to home.

20 MR. GUTTMAN-MCCABE: I would say even if
21 you found a study, a study done as recently as the
22 one, John, that you just completed, it almost out

1 of date by the time it's finished because of what
2 we're seeing just in the last 12 months. Again,
3 the iTunes store opened in June of last year so
4 you're seeing a quarter of all phones sold in the
5 first quarter of 2009 were smart phones. And you
6 pick up something like a Best Buy catalogue and on
7 the front it talks about the smart phone, and then
8 the first page has upgrade to a smarter phone, the
9 smart phone. You turn to the second page or the
10 third page, "Stay connected with our great range
11 of smart phones." You turn to the next page and
12 that's AT&T. Turn to the next one, "Stay
13 organized with a new smart phone," and that's
14 Verizon's advertisement. You go to the next
15 phone, Spring, "The Palm Free will single-handedly
16 change and organize your life." So whatever you
17 may have done, and then you look at the center
18 section, that's a fold out of about 100 different
19 handsets the majority of which are all smart
20 phones. So you're seeing this in Best Buy which
21 is sort of one of the big bucket retailers, Radio
22 Shack and others, I think whatever we measured 6

1 months ago is obsolete in this space. Again I'm
2 not saying that wireless is an alternative. I'm
3 not saying it should be a substitute. I'm saying
4 the customer is going to decide that and I don't
5 know what the answer is. I think that's going to
6 involve organizations like Pew and others doing
7 some significant research and having some of the
8 academics do some papers on what is meant by
9 broadband access and how is that defined.

10 MR. STENBERG: I was going to add a
11 caveat on the wireless. In rural areas, your
12 wireless service is not necessarily the same as
13 you have in urban areas. Where is 3G service, for
14 example? It is a substitute in urban areas, but
15 how much of a substitute until they become
16 available in rural areas? The other thing to
17 point out which has come out and people are
18 talking about is what are people using it for, and
19 that's why we were looking at some of the rural
20 area users to look at what they're using it for,
21 and the ones who wanted to use it more extensively
22 for their businesses needed better service.

1 MR. HOEWING: There's a lot of
2 interesting work that groups like the Bank of
3 America did. They do a survey every quarter that
4 looks at use of wireless technology, and in the
5 latest one, one of the factors they looked at was
6 how many people are actually using primarily
7 broadband over wireless. I wouldn't say there's
8 substitution going on. In other words, people are
9 only using wireless and not using a land line
10 connection. I would say there are some people who
11 decided when they got a broadband connection that
12 that was going to be their primary way to connect
13 and that's what they do. They certainly go online
14 at other places. We've done a lot of focus groups
15 and I've participated in them and a lot of times
16 with the dial-up customers you'll see them day
17 they can't get access to broadband which is
18 usually not the case. It's usually something that
19 drives them to get it. Education is the biggest
20 one. In most cases these people will say as soon
21 as my kids get into school I'm getting broadband,
22 and the second in a lot of cases I hate to say but

1 it's entertainment and a useful application is
2 gaming. That's the second one that tends to drive
3 people.

4 It's applications, and as Coburn says in
5 his book, and I think his book is very good, it's
6 called "The Change Factor," and one of the things
7 he talks about is why people adopt technologies.
8 A big factor is what you referenced which is peer
9 pressure, that in your peer group people started
10 adopting it and you just had to got to have it at
11 some point and that's another factor. It's a
12 human element of adoption of technology.

13 MR. HERRIGAN: This won't be the first
14 time today I say this, but, Link, if you're able
15 to share data and findings from your focus groups,
16 we will definitely welcome them with open arms.

17 I'm going to turn to some questions
18 submitted from the audience and from cyberspace.
19 This question reads, "What ongoing role should the
20 FCC play in the collection, analysis and
21 dissemination of broadband adoption data
22 particularly with respect to underserved

1 communities?" We have an assembled panel of
2 experts. What do you think the FCC's role should
3 be along these lines?

4 MS. WILLIAMS: I would love to see
5 broadband.gov become an entry point for all kinds
6 of data and analysis about this topic. I think
7 that data.gov is trying to do something in this
8 direction. It's really an idea whose time has
9 come and we see the great variety of data that no
10 single institution is going to be able to find,
11 but perhaps it's something that broadband.gov
12 could take on itself to do.

13 MS. PERRY: Responding to the NOFA
14 through PIP and BTOP, everybody with data insane
15 or lack of data insane in terms of it was very
16 clear that we had very insufficient data to meet
17 the requirements and so policy has to be based on
18 data. I believe that's the name of our workshop.

19 MR. HERRIGAN: That's the name of the
20 broadband plan basically.

21 MS. PERRY: There's a large gap in terms
22 of data, so the FCC needs to take a much broader

1 role in terms of identifying the standards for
2 data to be collected and the depth of the data,
3 and it's not just about how many service providers
4 are in a particular Zip code, it needs to cover
5 whether it's done directly or through sponsorship
6 of university type grants. It needs to cover the
7 intensity of use, and I also feel like we have not
8 talked enough about information literacy. If
9 you're going to be talking about broadband
10 adoption and utilization, it's kind of an
11 obligation or a responsibility to measure
12 information literacy. You mentioned Wikipedia
13 almost apologetically, but I always laugh at how
14 many times my mother-in-law sends the article
15 about the plastic and the lost boy. There are so
16 many people who lack basic information literacy
17 skills and that is a hurt to our democracy and
18 this society. So we need to start measuring
19 information literacy and driving that from a
20 policy and a measurement perspective much more
21 aggressively in order to keep the value up.

22 MR. HARRIGAN: Let me pose this second

1 question submitted because it plays off of the
2 first one, and we'll get responses to either the
3 first or the second one. This question reads,
4 "Operators have huge volumes of data, accurate and
5 near real time, that provide rich views of use in
6 many categories. How can this data be leveraged
7 by policymakers without compromising the
8 operators' competitive advantages." So this is a
9 different kind of data question that is posed to
10 the panel.

11 MR. GUTTMAN-MCCABE: I'll jump in for a
12 second, John, because I was going to say this with
13 regard to the first question, but I think it's
14 even more appropriate with regard to the second
15 question. If you look at the provision of data by
16 commercial companies to the FCC and other federal
17 organizations just in the last 6 months, you get a
18 sense that from the commercial side of the
19 equation it's almost information overload, and yet
20 I think, and the Chairman has talked about,
21 focusing on data and being a data driven
22 Commission and I think many of us on the

1 commercial side of the equation appreciate that
2 and are excited to provide the data. If there can
3 be some rationalization of those requests, if you
4 look at NTIA is asking for mapping data that is
5 different than the Commission collects and right
6 now we have a 706 proceeding and we have 477 and
7 we've got the broadband plan folks asking for
8 information. When we looked at mapping, often
9 times the mapping data that we submit to the
10 federal government is at times less accurate
11 because of how it's asked than the mapping data
12 you would get if you walked into a wireless store
13 and put in your street level address or your Zip
14 code and that's because it gets asked, and you saw
15 I think it was Peter's slide that showed the
16 eastern half of the country dark and the western
17 half not, and part of that is because as Link had
18 referenced to me when I looked at it and was
19 shocked by it is the size of Zip codes. So if
20 there's a way that the intelligent IT folks in
21 government could get together with the IT folks at
22 times within these organizations, you might be

1 able to plug in to this real-time data and it
2 becomes better data and yet easier to obtain and
3 there's not a manipulation of the data that
4 actually at times dilutes it. If a wireless
5 carrier is asked to provide his coverage map and
6 they can give you the cloud cover of a cell site,
7 it's probably the most accurate reflection you're
8 going to get. If in turn the carrier is asked to
9 fill in a census track and it's a binary choice,
10 yes or no, you're going to get a misrepresentation
11 of the coverage because you're going to say yes if
12 more than 50 percent of that track is covered or
13 no.

14 So I think there is an ability to get
15 access to the data. I think right now you're
16 seeing almost an overload in terms of the varying
17 requests, and I think one of the Chairman's goals
18 is, and you see that already in the proposed NOIs
19 that are going to come out, a way to rationalize
20 some of these data requests and harmonize them I
21 guess is a better word.

22 MR. HOEWING: There are two aspects of

1 that that I wanted to touch on. One is, because I
2 think the question referred to the services people
3 are using applications and we would know about
4 that. On the landline side, we do have a good
5 sense that people because of intensity in terms of
6 the data, we know for example that they're using
7 more data when they get a FiOS connection. At
8 aggregation points we can see that. We don't know
9 what they're doing with that. We don't know what
10 types of applications we're using. We're selling
11 a broadband pipe and they're using it as they want
12 to so we don't that much data on that. We do have
13 some idea that they're using it more.

14 I think the best place to get that kind
15 of data though, again going back to some of the
16 data that I see, the survey data that's done by
17 these private firms is from the customer. So to
18 me the old census surveys which I think have been
19 discontinued, maybe they're starting them back up
20 again, where they did ask questions about what are
21 you doing with broadband are really maybe a more
22 valuable way to get it than trying to get it

1 through the carriers.

2 MR. HERRIGAN: An organization might be
3 also be able to do it like a private nonprofit.

4 MR. HOEWING: Yes, that's true too.

5 MS. WILLIAMS: I want to second that,
6 that I think there's quite a bit of pent-up demand
7 for better broadband and for broadband, period,
8 that we can actually ask people right at that
9 point what's your speed, who are you, who do you
10 get it from, what do you do it with. There's a
11 Website, speedtest.net that I think is just one of
12 many of these sites that aggregate that data in
13 order to be able to produce maps. Broadband.gov
14 could be asking people that on their Website, tell
15 us what your broadband speed is where you are, or
16 tell us what your connection speed is, and we'd be
17 able to have maps that complement the maps that
18 come from various providers that would be very,
19 very precise.

20 MR. HERRIGAN: I'm going to turn to some
21 additional questions from the online world. This
22 is from Craig online, "From the Verizon data,

1 Gen-X and Gen-Y users are the largest base of
2 users. Many of them have grown up with computers
3 and technology, so this makes sense. Are there
4 any studies that look specifically at the
5 unserved/underserved Gen-X and Gen-Y populations?
6 Are the reasons they are not using broadband the
7 same or different than other reasons for other
8 demographic groups?" I'll say I like this
9 question because one challenging in measuring
10 these phenomena either for the FCC or for other
11 organizations is to avoid the demography is
12 destiny trap on some of these things, and this
13 question understands that. So I'll be interested
14 to hear what you say about this.

15 MR. HOEWING: Number one, it's not
16 Verizon data as I said. We have private companies
17 that we rely on to provide us this kind of data.
18 So it's not generated by us. It's proprietary so
19 I can't release it. It's the data that the
20 companies themselves gather.

21 In the data research that I've looked at
22 though I haven't seen anything specifically on

1 that issue. You can get it a little bit by
2 looking at the uses people make of the
3 connections, but there's nothing in there that I
4 saw that said these people aren't online and
5 here's why they're not online. They don't ask
6 those kinds of questions.

7 MS. FOX: I'll add one thing, and that
8 is actually from the typology work that the Pew
9 Internet Project has done, the report is "The
10 Mobile Difference," and what it looks at is in
11 terms of technology, the assets that someone has,
12 the actions they take and the attitudes they hold,
13 and there are young people who don't love the
14 Internet. There are people who like talking on a
15 landline and who are satisfied with what they have
16 in terms of entertainment options. Actually there
17 is a really interesting group that has some of the
18 assets, takes some of the actions, but they have a
19 bad attitude. They don't want necessarily to be
20 online. They don't want to be part of Facebook
21 and MySpace, but they feel that they have to be.
22 So recognizing that there are different aspects to

1 technology adoption, it's not just access as Karen
2 said, but all the other factors.

3 MS. PERRY: This is not extensive
4 research, but I did a focus group with all the
5 community college presidents in L.A. about a year
6 and a half ago and I was asking them about the
7 people coming to community college and were they
8 tech savvy and did they have computers and the
9 Internet, and they definitely identified that a
10 number of their low- income population do have
11 problems with broadband access. But when we
12 talked about skills, initially they said they come
13 in and they've got skills. They know how to use
14 the computer and all that stuff. Then one of the
15 faculty said being able to text message and update
16 your Facebook page is really not a professional
17 skill, that even in this group that we perceive as
18 digital natives, and they are digital natives in
19 many regards, there are huge skill gaps around
20 information literacy, around research accuracy,
21 around responsible civic engagement. So I think
22 that there is almost a falseness that we have and

1 it goes back to that understanding not just the
2 intensity of our adoption but the responsibility
3 of it. And if we only look at adoption and we
4 don't look at those issues, I think we will not be
5 measuring the right things.

6 MR. HERRIGAN: I have actually a host of
7 additional questions from Fred online, "How
8 important is community coordination to promoting
9 broadband adoption in vertical markets? Would
10 communities benefit from taking a CIO approach to
11 health, education and public safety within their
12 communities?" So the notion of some chief
13 information officer in communities helping to
14 drive along some of these vertical dimensions.
15 Are there any comments on that?

16 MS. WILLIAMS: The cities of Urbana and
17 Champaign have joined with the University of
18 Illinois to submit a fairly ambitious fiber
19 proposal to BTOP and it's definitely been because
20 of the information officer type people in those
21 two cities. Our experience is really that every
22 organization needs what we call a cyber organizer,

1 a person who understands information technology
2 well enough and who understands their community
3 well enough to be able to proselytize and lead
4 that organization, that group that community
5 across the digital divide or to new, more creative
6 ways of using broadband and other such tools.

7 MR. HOEWING: I did want to make a
8 point. I think Suzannah is right that even when
9 we look at cohorts we tend to get this view that
10 that cohort does this. As you said, there are
11 individual differences. But even so, in Gen-Y and
12 Gen-X, most of them are comfortable using it.
13 They may not use it as much in some cases as in
14 others. But I think one thing that is a
15 significant issue and I have a recommendation,
16 John, about what the FCC should do on this but
17 it's a very, very important area, and that is
18 familiarity and security, those two kinds of
19 things, that the technology is still with some
20 categories of folks not something they're familiar
21 with so there is a concern about whether or not I
22 should try to do this and how do I learn how to do

1 it, and the other is security. I can tell you I
2 have personally sold I don't know how many PCs
3 because so many of my relatives call me all the
4 time for helping making sure their PC is up to
5 date and when they get a pop- up, yes, you should
6 download it. They are really still concerned. So
7 one of the reasons I think that Kindle is doing
8 pretty well is that it's a single purpose device,
9 it's very secure. You get information you want.
10 You don't have to worry about some of the other
11 things on a PC that can be very threatening, and
12 especially with seniors that's a big issue, what
13 is this thing? How does it work? I'm really
14 concerned I'll break something.

15 I'll give you one vignette and this ties
16 into the Medicare Website. My mother-in-law for
17 years would never get a microwave oven. We all
18 thought it was just because she was persnickety
19 and didn't want to do it. She finally told me one
20 day, "Link, it's just the buttons." So I went out
21 and found an analog. There is an analog
22 microwave. It has one of those egg timer buttons.

1 I got her one of those and she is as good on that
2 as I am with the buttons. That's what companies
3 are trying to do over time is figure out how to
4 fit these to the needs, and that's an important
5 part of it.

6 I would say that question fits with this
7 panel because it references adoption, and yet when
8 we talk about adoption, one of the key elements is
9 content. There needs to be proper content. The
10 role of a CIO within a community could be the way
11 it's referenced in the question which is regarding
12 adoption, but the reality is I think there
13 probably is a need in many communities for the CIO
14 to drive content. So in the mHealth field, we are
15 seeing a lot of the physicians leading the way in
16 terms of pushing for whether it's, and I wore one
17 myself, a heart monitor that was attached to a
18 wireless device for a period of time. That came
19 through great work that G.W. is doing. Absent
20 that content, it doesn't matter is there's a
21 knowledge about or desire to adopt it on the
22 adoption side if the content isn't available

1 there. So local communities having someone
2 driving whether it's some form of telemedicine or
3 mHealth or it's smart grids or things along those
4 lines, you do need the content side of it and the
5 CIO could help on that side of the equation also.

6 MR. HERRIGAN: Do we have additional
7 questions?

8 MS. WHITESELL: I have one that we keep
9 coming back to which is the importance of
10 computers and computer literacy. It sounds like
11 from what people are saying it depends on the
12 demographic. I know in the Pew study it was a low
13 or small percentage in terms of a barrier to
14 getting broadband, but I wonder what the
15 experience is in the group.

16 MS. FOX: Just to follow-up on the Pew
17 data, yes, usability was a less likely to be cited
18 factor in people who are nonusers, saying that
19 it's a barrier. I think it is interesting to
20 think about how comfortable are people with
21 computers. I think it's important to keep coming
22 back to the seniors. They're really a sentinel

1 group in terms of people who not only didn't grow
2 up with computers and might not have even been in
3 the workforce when computers were standard issue
4 and so looking at that. And also folks who live
5 in rural areas. If you live on a farm, you might
6 have had a whole life where you didn't need a
7 computer. Now there is more and more need for it
8 in rural areas. So what is the catalyst that's
9 pushing somebody over to become computer literate
10 and is it possible for them? There is some really
11 interesting work being done looking at seniors
12 especially as a group.

13 MS. WILLIAMS: I think we ought to bring
14 up the institution of the library here because the
15 library is a site where a lot of people get the
16 computer literacy they need. The farmer who we
17 buy our food from spends his winters looking out
18 on the WWW at the library as he calls it. And
19 people go to the Chicago Public Library which is
20 where we're doing a study now because they need to
21 apply or jobs online and they still have to learn
22 the concept that there is a white space and you've

1 got to plant your cursor down in there and then
2 you can type because all these application forms
3 are online, and they wouldn't be able to learn
4 that if weren't for the staff of the library
5 including people called cyber navigators who will
6 actually sit one on one or two on one teaching a
7 small group of people at one time, this is what a
8 form is all about, here is how you fill it out.
9 Here is what a mouse is all about. Turn it over.
10 See that ball on the bottom? That's the motion.
11 I think we have to look at the key institutions
12 that are getting people into broadband and think
13 about particularly communities not as I think
14 someone said a demographic mistake you can make.
15 African American communities may be using a lot of
16 wireless, but they are also in the libraries more
17 heavily than others in Chicago learning to use and
18 using the Internet on those computers, and their
19 heaviest use, the study that was done in Ohio by
20 Karen Mossberger from Illinois, found that African
21 Americans tended to use computers in institutional
22 settings and at other people's houses and that was

1 really an economic thing because you didn't have
2 it at your own house. What do they use it for?
3 They use to get jobs. So very, very practical and
4 ambitious use.

5 There's a kind of use that I think is
6 really below the radar and that is all the use
7 that's going on in low-income communities for
8 cultural production. We often don't consider the
9 music devices that people have in their bedrooms
10 and their garages where they're cutting tracks as
11 being computers, but they are. They are not
12 spinning things on turntables anymore.

13 MR. HERRIGAN: To me that's a great
14 point about highlighting the fact that people are
15 producing information and posting it online in
16 addition to consuming information, and that's
17 something we'll want to measure as the FCC does
18 its survey.

19 I have a question from the audience and
20 question from online that complement one another,
21 so let me take them together. From the audience,
22 "Karen highlighted the need to track and measure

1 literacy, but this is inherently qualitative. How
2 would she and others propose to define, track and
3 measure literacy?" I assume digital or otherwise.
4 And from online, this reads, "Digital inclusion
5 training and education are considered important
6 for sustainable broadband adoption. Is there
7 research on what nonprofit, private or public
8 programs have been most effective?" So one
9 question about measurement, the other on whether
10 measurement has occurred that helps us know
11 something about specific programs that have been
12 designed to drive sustainable adoption. So I open
13 that up to the panel, Karen maybe first.

14 MS. PERRY: On the literacy one I'm a
15 big fan of the librarians here. The American
16 Association of Librarians has got some awesome
17 standards for information literacy and I don't
18 know that they specifically address measurement,
19 but I think they guide the type of measurement
20 that needs to happen. They have identified I
21 think five major gaps in information literacy and
22 skills that need to be addressed, and I think

1 every one of them points to an measurement, and
2 it's just a core skill that's lacking rather
3 broadly in our population and I think somewhat
4 shockingly so given the depth of use.

5 On the topic of measurement and best
6 practices in terms of adoption and training, I
7 find that the work that Kate did on the TOP
8 program is one of the few broad-based programs.
9 We at the Knight Center have collected some best
10 practices and will continue to collect more, but I
11 can't say that there is a body of work around what
12 works that is particularly well researched and
13 documented from my experience, so I would ask
14 others on that.

15 MR. HERRIGAN: Karen could I ask you to
16 share those resources with us from the librarians
17 and also the Knight collection of best practices?
18 We will want that.

19 MS. PERRY: I would be happy to do that.

20 MR. HERRIGAN: Thank you.

21 MR. HOEWING: One program, John, that's
22 been going on for years, and I haven't been

1 involved in it for some time now but it started in
2 the 1990s was the SeniorNet program and they've
3 actually done a fair amount of research in the
4 past. I don't know that they're doing as much
5 now, but they certainly did in the past, and OATS
6 is a program in New York which is an offshoot of
7 the SeniorNet kind of approach and they've done a
8 lot of community organizing around how to get
9 people trained on using PCs.

10 One of the ideas we had too in terms of
11 trying to get to people who haven't used before is
12 we have computers before is we have a resource out
13 there that could do this and they're really smart
14 about this stuff already and that's the people who
15 are part of AmeriCorps. Those are in most cases
16 young people. It could be that they could
17 actually help. SeniorNet has sites I think still
18 today around the U.S. to help training for seniors
19 in getting access online. I know five people who
20 would not have a PC today who are my relatives who
21 are over 70 who would not have a computer if I
22 hadn't helped them and trained them. It wasn't so

1 much anything to do with their intelligence level,
2 it's just that this is not intuitively obvious.
3 It's not something that if you're not exposed to
4 it you're not used to using.

5 MS. WILLIAMS: Computers are still in
6 the Stone Age. They're very difficult and
7 obnoxious to use. I'm going to go back 40-plus
8 years to a place no one thought they would go this
9 morning and that is Cuba. I was on one of the
10 earliest library tours to Cuba and one of the
11 places we went was the Museum of Literacy. They
12 have 707,000 letters that the people who went
13 through the 1961 literacy campaign wrote to Fidel
14 Castro because the culmination of your literacy
15 campaign was that you wrote a letter to Fidel
16 which proved that you could write. They collected
17 these letters and bound them. The letters are
18 hard to read. The pencil marks are fading on
19 these letters. But here we have a resurgence of
20 literacy campaigns embedded in the BTOP public
21 computing center funding that's about go to out
22 and in Urbana-Champaign in the 46 public computing

1 centers that are linking together for the coming
2 period, they are proposing that every time someone
3 gets an email address they're going to ask that
4 person now write an email to us, and therefore
5 they're going to write an email to this public
6 computing center network in Urbana Champaign.
7 What if at the end of every computer literacy
8 program people were asked to write an email to
9 Barack Obama and we collected those emails and
10 then analyzed where do they come from, what are
11 the people saying and so on? Let's collect data
12 in brand new ways and let's collect it from the
13 people who are actually using broadband.

14 MR. HOEWING: One other thing I wanted
15 to mention in the area of compelling need, you
16 referenced relevance, I think that's really still
17 very significant and there are things in that area
18 that the government can certainly do. With health
19 for example I had my mother-in-law living with us
20 for 10 years and we had a broadband connection at
21 the end where the doctor could see her. Just
22 being able to see the color and how she winced

1 when she moved was very, very important to helping
2 understand where she is. So that's an area,
3 health care IT, health care uses. We know people
4 are going to be taking care of their relatives at
5 home over time.

6 Second is clearly education. We've done
7 some work there, but again we have a site called
8 Thinkfinity that we're working with a bunch of
9 groups education on and there's a lot of good
10 content. It's really getting organized, but I
11 still think we're not anywhere close to what we
12 could do with the technology for education.

13 This is job training. Clearly a lot of
14 people are going online not just to get
15 information, but there are places like Rutgers
16 that are doing some really interesting work on job
17 training with women especially. Their husband are
18 laid off and in many cases it's the men who go
19 first in losing jobs, and they're getting
20 retrained to get other jobs and it's almost all
21 being done online.

22 MS. PERRY: The thing that always

1 surprises me and I think your quote about people
2 moving out of crisis is that you never know where
3 your innovation is going to happen. So in the
4 community outreach we've done, there are awesome
5 health care online applications in Gary, Indiana,
6 and also in South Dakota where the average doctor
7 is like 70, so they need to spread around. There
8 is innovation in a lot of different places in
9 broadband sometimes in places you wouldn't expect
10 it because of the need.

11 And I wanted to repeat that the quotes
12 that I indicated in my original talk about there
13 are a lot of specific examples of this is a good
14 program here and this is a good program, CTCNet
15 which is now defunct as an organization had done
16 some analysis among practitioners who did
17 community technology work over years and years and
18 years, and Bill Callahan from my team had
19 summarized that analysis with the statements that
20 I shared before, that the programs around
21 inclusion, around getting people who are not
22 connected, are embedded in social infrastructure

1 whether that's seniors or people who are speaking
2 Spanish, they're high touch just as it was when I
3 learned, they provide continuing formal as well as
4 peer support to the new adopter so it's not about
5 5 hours of training or 20 hours of training or 30
6 hours of training, it's about I'm helping my trash
7 man with his virus problems. When I drop off my
8 recycling, we have consultation sessions, and it's
9 not that easy to do it at the recycling center.
10 And it's that going right from the engaged to
11 train, to equip and support. It's about looking
12 beyond the class and saying what's going to make
13 it affordable for you? Should you be getting a
14 used computer or a new one? Should you be working
15 from a mobile device? Is DSL the right for you in
16 your neighborhood? Maybe you need a laptop and
17 you need to go to public centers to get access.
18 But it's helping people figure out what works for
19 them. Then it's the hook, what is the reason that
20 I'm going to keep coming back? I think that those
21 are common principles that many, many
22 practitioners have learned from.

1 MR. HERRIGAN: Nese, you had a question?

2 MS. GUENDELSBERGER: Yes, I had a
3 question in terms of I think you identified age
4 being one of the elements and being the part of a
5 minority group might be because you may have
6 different needs. Does gender play any role?

7 MR. HOEWING: Yes, there is some
8 evidence in the data. There is some interesting
9 data that Gallup has too, by the way, which is in
10 terms of usage is I think interesting. They have
11 a chart that shows how many hours people stay
12 online which will give you some indication as to
13 how intensively they use the data. If you go down
14 the chart you'll see that men are much higher up
15 the chart than women in terms of intensity of use.
16 Women especially single women, and this is older,
17 not single in college, are much farther down the
18 chart. So there is some evidence that there is a
19 gender difference too.

20 MR. HERRIGAN: Do we have other
21 questions for the panelists or comments from the
22 panelists or from the audience?

1 MR. BURGEE: I wanted to talk a little
2 bit about the relevance category of the
3 nonbroadband adoptions and to ask the question
4 sort of generally, do we know enough about that
5 group? It's a pretty big group of that general
6 category and I'm wondering what more does the FCC
7 need to know about them? It seems to me in some
8 cases it's a question of education and in others
9 cases perhaps persuasion and that there may even
10 be a segment of that group who just are absolutely
11 nonadopters, no matter how much information they
12 have or how compelling the arguments they're never
13 going to adopt. I'm wondering what do we know
14 about that now and what more should the Commission
15 learn about that group as it prepares the plan and
16 moves forward?

17 MS. FOX: I would say that I'm really
18 inspired by what Karen and Kate said about looking
19 at the social infrastructure, and a question that
20 we've asked in the past and I think we need to ask
21 again is when we talk to non- Internet users we've
22 asked do you know anyone who goes online, and what

1 was really surprising and disheartening, frankly,
2 is that there are pockets of non-Internet users
3 are really down deep in that pocket where not only
4 have they never been online, they don't know
5 anyone who goes online. So I think that is an
6 important measure of the second-degree Internet
7 access which turns out to be so important in terms
8 of adoption. I love the word disciple, the
9 evangelist, some of this is like the idea of
10 Amway, or in my world it's Tevo, and your first
11 friend who got Tevo couldn't resist talking about
12 it and sometimes that really can help. But if it
13 turns out that you don't have anybody in your
14 network who talks to you about the Internet, then
15 you're not going to connect to why it would be
16 important for you.

17 MS. PERRY: Remember that my focus is
18 programmatic more than measurement, and I also
19 have a personal experience on this one which is
20 that for years I was the leader of the Girl Scout
21 leaders in my two towns, so I would communicate
22 regularly with 120 Girl Scout Leaders, and I live

1 in towns where people can afford Internet and
2 where we have plenty availability. And because I
3 work full time, when a new leader would come
4 online I would ask, "May I have your email address
5 so I can send you updates?" Seven or eight years
6 ago 10 percent of them would say, "I don't have
7 email," and I would say, "I don't call."

8 MR. HOEWING: Peer pressure.

9 MS. PERRY: "Who can I send email to?"
10 I would ask, "Does your husband have email at
11 work?" "Well, I guess you could send it to him."
12 Or I would ask, "Do you know another Girl Scout
13 leader who will print this and share it with you
14 because this is how I communicate is with email?"
15 Over time every single one of those women called
16 me up and said, "By the way, here's my new email
17 address." They didn't see the relevance, and it
18 wasn't just me in Girl Scouts, it was the PTA and
19 the softball schedule and all those things. So my
20 principle programmatically is that if I pick up
21 the 50 percent of the nonadopters who see the
22 relevance, that by the time I've got that done,

1 then at least half of the next 50 percent will be
2 ready to go because of the social structure, that
3 they will see more and more needs. The pockets
4 are always going to be difficult. Empirically in
5 the communities that I serve I would say that it's
6 probably more than 50 percent of the people who
7 really are looking for help getting over the edge
8 and who do see the value and would like to be a
9 part of it.

10 MR. GUTTMAN-MCCABE: So it's going to be
11 about driving content.

12 MR. HERRIGAN: Right, the content in
13 Karen's case was emails about Cub Scouts. The
14 content in a minority case may be about organizing
15 around an issue or job fares or something like
16 that. I think it's going to be about driving
17 content and making it relevant. I'm just going to
18 observe that the term content probably has to be
19 unbundled a little bit because I know on the
20 research that Pew has done often times it's about
21 one to many or even many to many communication
22 which obviously the content is the email, the

1 listserve, the what's going on with the Girl
2 Scouts, and then we have to I think differentiate
3 that from video, sports, other kinds of content,
4 whether it's health care or education and I think
5 one challenge is to understand the different
6 gradations of content that are appealing more or
7 less to different population segments.

8 MR. HOEWING: On that issue, John, it's
9 a little surprising again looking at the data that
10 more of the applications people use are not what I
11 would call daily life enhancing functions. Email,
12 we all use that and it's important. It's
13 communication. Most of the things that people use
14 intensively, especially the Gen-Yers and Gen-
15 Xers, tend to be those social communications types
16 of applications, not things like online finance
17 and managing your finances and finding information
18 about health care and arranging for a doc. All of
19 those things are not as much used as I was hoping
20 to find. In some categories it's not true, but
21 for a lot it is. So we still have a lot more I
22 think room to grow in terms of how to grow the Web

1 and how to grow these applications which is why I
2 keep pointing back to the government because I
3 think things like the Smart Grid and starting to
4 manage your home, energy usage and those kinds of
5 things, are going to help IT or it's going to
6 help, and those are things government can do a lot
7 about.

8 MS. WILLIAMS: I think we should be sure
9 to look at the segment of the BTOP funding that is
10 going for sustainable broadband adoption because
11 we're going to amass a lot of experience there to
12 find out just what is it that drives communities
13 to take up broadband sustainably.

14 MR. HORRIGAN: Karen?

15 MS. PERRY: Rick Herman from Intel did a
16 report a little while ago which I'm sure I can
17 share with you, and he defined a hierarchy of use,
18 and I think his hierarchy was digital
19 isolationist, digital basic, a fully functioning
20 digital household, a digital professional and then
21 a digital innovator, and I think Pew did something
22 as well that was similar. And I think that when

1 we think about adoption and use that that's
2 another one of the things that we need to measure
3 is the sophistication of the use which I think
4 aligns with that information literacy and
5 intensity issue which is so important to me.

6 MR. HERRIGAN: We have an additional
7 question from the room, "Besides the Commission's
8 current methods of data collection, what means can
9 the Commission use to collect social data, for
10 example, race, poverty, employment status and
11 language on broadband use, and how should they
12 interpret this data to understand future uses and
13 needs?" Which is very much about segmenting by
14 demographics different population strata and what
15 methods the Commission may use for this kind of
16 data collection.

17 MR. GUTTMAN-MCCABE: What we've seen
18 with regard to Chairman Genachowski is the desire
19 to reach outside and fund efforts. I think having
20 a leader of the Commission who is willing to go to
21 independent third parties and pay for studies or
22 reviews, not all of the best data is going to come

1 from the operator side of the community and
2 particularly with regard to adoption too often
3 there is not a connection once the product is
4 adopted and I think funding studies is a way that
5 the Commission can get real time and very ripe
6 data that hasn't really been done much in the
7 past. Often times the Commission has relied on
8 internal resources and I think if you want to work
9 with organizations, in our space it was American
10 Roamer provided data on third-generation
11 deployment and for the longest time CTIA collected
12 it and submitted it to the FCC and there was
13 concern about what was happening with regard to
14 that data. Then finally under Chairman Copps's
15 push, the FCC went directly to American Roamer and
16 got data, it's very timely and it's very accurate,
17 and I think that's a model that can be exploited
18 here.

19 MR. HOEWING: John, I know you should
20 know this as a researcher because you're one of
21 the best I've run across. There is so much public
22 data out there that if you are mining it and

1 asking yourself specific questions you can really
2 create a pretty good picture, and I don't think
3 we're using it that well. For example, I went on
4 last night to look up more about seniors to see if
5 I could find out more about seniors in rural areas
6 and there is some great data that the National
7 Committee to Preserve Social Security and Medicare
8 put together on how many people in rural areas are
9 above 65, how many are below a certain income
10 level, and what kinds of jobs they do, again
11 getting back to are they exposed to this
12 technology in the workplace. There is a lot of
13 this data out there and if you look at it on a
14 cross-cut basis, pull it together and figure out
15 is this telling me a story, you can really learn a
16 heck of a lot without actually having to probe for
17 more data. A lot of it is there.

18 MR. HERRIGAN: Those are good
19 suggestions. I have a very directed question from
20 the audience. "Link, when you mentioned the
21 demand for gaming, did you mean gambling like
22 sports betting or online poker or multiplayer

1 games?"

2 MR. HOEWING: They never specified.
3 This is a focus group, they were parents though,
4 so I suspect its their kids and that kind of
5 thing.

6 MR. HERRIGAN: Do we have other
7 questions or comments that the panelists would
8 like to make?

9 MS. WILLIAMS: Going back to the
10 demographic problem, it seems to me that if we all
11 take up the tool of GIS and we recognize that
12 demographics are distributed spatially, then if
13 all of our studies also use GIS and spatialize the
14 process going on, then we can collect it back to
15 different segments of the population.

16 MR. HERRIGAN: Since we do have a little
17 more time, we do have at least one additional
18 question, "How does the U.S. compare to other
19 countries in terms of data collection?" Are there
20 any perspectives from the panel? I could even
21 take a stab at it. Kate?

22 MS. WILLIAMS: We are ahead of many

1 countries because we have the census. We have a
2 tradition from 1790 to collect data about
3 ourselves and to do it in a consistent way decade
4 after decade. We're improving it and changing it
5 a little bit as we go, but I think in some of
6 those ways we're ahead of the show. But when it
7 comes to broadband, we have things to do and it's
8 really important that we should have this
9 discussion today because we're not at the front.

10 MR. HORRIGAN: Other comments? I think
11 we can wind up after this very illuminating panel.
12 Let me say as we close that the FCC is charged in
13 the course of developing a plan of gathering lots
14 of data. We will be getting back to each of you
15 for additional requests for data resources, maybe
16 not data that you have in house, but where we can
17 find X, Y or Z. So we hope you're receptive to
18 those kinds of queries from us. We'll also be
19 conducting a survey of Americans on various
20 dimensions of how they use broadband and
21 particularly why they are not using broadband, and
22 I will be reaching out with my colleagues to you

1 for perspectives on how to measure that. It's
2 been a great start today and I have scribbled down
3 a lot of notes, but we want to work
4 collaboratively in putting this survey together so
5 that we are hitting all the right notes as we try
6 to hone in on not just what is driving broadband
7 usage but also why nonadopters are not adopting.
8 So I will be calling on you and my colleagues will
9 be calling on you as we move forward.

10 For now I hope the audience both here
11 and in cyberspace can give a round of applause to
12 our panelists.

13 (Whereupon, the PROCEEDINGS were
14 adjourned.)

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