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LOW ADOPTION AND UTILIZATION - IMPORTANCE OF BROADBAND AND APPLICATIONS

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ANDERSON COURT REPORTING
706 Duke Street, Suite 100
Alexandria, VA 22314
Phone (703) 519-7180 Fax (703) 519-7190

PARTICIPANTS:

BRIAN DAVID, Moderator
Adoption and Usage Director, Omnibus Broadband Initiative

CHARLES M. DAVIDSON
Director, Advanced Communications Law & Policy Institute at New York Law School

VALERIE FAST HORSE
Director of Information Technology, Coeur d'Alene Tribe

DOUGLAS A. LEVIN
Deputy Executive Director, National Association of State Boards of Education

STACI PIES
Director Government and Regulatory Affairs, Skype

JAY H. SANDERS
President and CEO, Global Telemedicine Group

CRAIG SETTLES
Founder and President, Successful.com

SHARON STROVER
Philip G. Warner Regents Professor in Communication and Chair of the Radio-TV-Film Department, University of Texas at Austin

NICOL TURNER-LEE
Vice President, Joint Center for Political and Economic Studies, and Director, Media and Technology Institute

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P R O C E E D I N G S

MR. DAVID: Okay. I think we're ready to go. I wanted to welcome everyone to our second of three adoption panels for today. We had a -- actually a really I think fruitful conversation this morning around the data set. Our goal for this conversation is to take it one step further and talk about at the end of the day why this matters, why the topic of adoption and utilization matters.

We'll finish the day with, okay, how do we affect this problem. How do we, in February and on an ongoing basis, deliver a plan and a set of policies that shrink the number of people who don't adopt even though they have access and who don't use it, broadband, in a way that is sort of maximally beneficial to them and to society at large?

My name is Brian David. I'm on the Broadband Task Force running the Adoption and Usage Team, so one of the three core teams. Think of us as the demand side of the equation. We are

not the supply side of the equation. So I don't want to spend a lot of time today talking about those who are completely unserved. We spent most of last week talking about that. This is a different type of conversation.

I'm real excited to have actually a very large panel today. We'll try to keep it lively. We appreciate you all coming from points near and far to spend time with us. I'm not going to introduce each of you. As you make your initial remarks, please introduce yourselves. Maybe before we get started with the panelists, we'll have a -- our Intergovernmental Team introduce themselves and talk about themselves.

MS. ZUFOLO: Sure. Hi, I'm Jessica Zufolo. I'm the Deputy Administrator at the Rural Utility Service within the USDA and I want to just thank you for inviting me here. Brain David, Jennifer McKee, Chairman Janikowski, it's really a pleasure to participate in this event.

And on behalf of our administrator at RUS, Jonathan Adelstein, and Secretary Vilsack,

we're really looking forward to working with everybody at the FCC, as well as, our ongoing partnership with the NTIA and all agencies throughout the U.S. Government to fulfill President Obama's goals as it relates to Broadband deployment in rural and urban America.

I just want to make a couple of remarks on what we're doing at RUS and what the specific issues that we're trying to accomplish within the USDA, and meeting those goals, and being part of the team here. We are essentially at USDA focused on building and maintaining infrastructure, an infrastructure investment throughout rural America.

USDA has a number of project areas where we are investing in building communities from the ground up, from rural housing projects, rural business loans, community facilities grants that build schools, libraries, childcare facilities, as well as, telecommunications, water, waste water infrastructure, projects, as well as, electric and renewable energy projects.

I wanted to highlight for you all today a report that the USDA issued yesterday and we have copies actually on that table over there. It's entitled Broadband Internet Value for Rural America and it's a report that I encourage everybody to take a look at that Vilsack announced yesterday. And it's -- the conclusion is essentially that rural communities with greater Broadband access has greater economic growth than areas with less or no access at all.

And the study compares counties that have -- that had Broadband access in 2000 with similarly situated counties that had little to no Broadband access whatsoever. Employment growth was higher and non farm private earnings are greater in counties with a longer history of Broadband availability.

In addition, the study concluded that in areas with low population size and relatively high population loss, coupled with demanding terrain and aging populations, that the cost of providing Broadband in these markets were just that much

higher and more difficult to attract private risk capital to build facilities in these markets.

These demographic realities make it extremely challenging to attract the kind of capital and the kind of investment opportunities that we're trying to encourage here as we try to discuss these issues across the board. The study also concludes that in 2007 only 70% of rural households with in home internet access had a Broadband connection, in 2007, compared with 84% in urban households. So there's somewhat of a disparity that exists and we need to recognize that. This study provides a lot of details about really what's going on and we want to make sure that that's part of the discussion here.

In addition to that, in addition to this report, as everybody here knows, the RUS is heavily engaged in partnering with our colleagues at the NTIA in administering Recovery Act funds. We can talk about that in detail but I'd like to just mention that we're working very closely, we've had about ten workshops across the country

that I think some of the people in this room and folks across -- throughout the Congress and throughout various stakeholder groups have participated in where we've had a lot of interaction and a lot of comments and really good feedback from stakeholders about how we should be applying the funds and how to really make it -- make this, this funding rounds a success, in addition to the success of additional funding rounds that are coming up subsequently.

We encourage everybody here at this forum to give us any feedback, ideas; we're open to knowing how and getting your thoughts as to how to do it better. We think this is a great opportunity to have that dialogue.

In addition, I just want to mention a couple of other things that we're doing at RUS. We have the Community Connect Ramp Program and we'll be issuing about 13 million grants coming up soon that will fund Broadband projects in the most remote areas. In addition to our Broadband Initiatives Program authorized in the Recovery

Act, we have a number of other telecom and Broadband funding opportunities that we've been doing for 60 years. The 60th anniversary of our telecommunications infrastructure and Broadband programs are coming up in October. So we have had a lot of time working with rural America in trying to provide solutions to these issues that we're going to talk about today. So thank you for having me here. It's a pleasure and I look forward to discussing these issues.

DR. JEFFERSON: Good afternoon. My name is Francine Jefferson. And in a prior lifetime I was Evaluation Specialist for the Technology Opportunities Program. That program funded well over 600 projects that were targeted toward the adoption and use of Broadband telecommunication applications to public and non profit entities. And if you'd like to take a glimpse of what that's all about, Kate Williams who was on your panel earlier today, spearheaded a project called Technology Opportunities Legacy Project.

And all of those data from those

projects have been downloaded and digitized and are now made available to the public and for the public research, as well as, going on the NTIA website; you can access those and see those examples, as well as, the evaluations that were done of them, which was my job then, which will tell you all about the barriers, constraints, and opportunities with respect to Broadband utilization and adoption.

In this lifetime, I am a Telecommunications Policy Analyst for the Broadband Technology Opportunities Program. And as a Telecommunications Policy Analyst, that means I do all of the duties as assigned. My primary focus, however, has been outreach to minority serving institutions to, excuse me, to foster and facilitate an understanding of Broadband and to facilitate a forum for discussion and be a catalyst for partnerships.

We held three forums which we titled High Speed, High Stakes, Closing the Digital Divide in Minority Communities. Recently in

Birmingham, Alabama, Billings, Montana, and in Albuquerque, New Mexico, where we had a very fine turn out of minority participants and we're very pleased with that and we hope to continue that. And I thank you for the invitation and the opportunity to be a part of this group today. And on behalf of our administration, we thank you and thank you, Jessica and all.

SPEAKER: Go ahead, Luke.

MR. TATE: Hi, I'm Luke Tate and I'm a Special Assistant to Secretary Sean Donovan, Secretary of Housing and Urban Development. And at HUD I am currently helping to lead our Broadband efforts. I'd like to thank everybody from the FCC team and Chairman Janikowski in particular for inviting us to attend today. And I just quickly want to note, you know, HUD of course has a direct interest in this conversation, particularly with regard to residents of public and assisted housing, all residents of HUD housing.

And in those cases we're most interested

in the innovative models and the best practices for delivering Broadband to concentrated populations, i.e., a public housing development at a -- in a cost effective manner. More broadly, the Secretary and HUD are certainly concerned about the fact that, you know, households earning less than $20,000 a year adopt Broadband only 35% of the time when it's available. And that for households earning less than $40,000 a year and then again, less than $20,000 a year, cost is an increasing barrier to them adopting Broadband.

So in the broad sense, we're particularly concerned about communities that are often times shut out from other opportunities available and there are metropolitan areas also being shut out from the educational and employment opportunities that are available through Broadband. So to the extent to which you could address those issues and your comments, it would be enormously helpful for HUD, as well as, the FCC process; thank you.

MR. DAVID: Okay. So we need to get

into two quick logistics things. As you go through your slides please give notice to move the slide forward so that we can stay up with you. Also, for the audience that is here, we'll be passing around cards for questions so feed those out to the aisle and we'll bring those to the floor.

I want to make this as data driven as possible. If -- to the degree that I challenge anyone to take it to the next level and make it more definitive, more precise, more data oriented, I apologize in advance. Time is short and we've got a -- of plan and it's difficult to do if we stay vague. So I give that warning in advance. Chuck, do you want to start? Do your introduction and then we'll go around the table?

MR. DAVIDSON: Perfect.

MR. DAVID: Okay.

MR. DAVIDSON: I'm Chuck Davidson with the Advance Communications Law and Policy Institute at New York Law School; I'm the Director of the program. Are we moving into comments or

are you having brief introductions from everybody?

MR. DAVID: No, you're the first to --

MR. DAVIDSON: Okay; perfect. All right; all right. Thank you very much. I'd like to thank Chairman Janikowski, Brian, the entire FCC Commission for having me here today. It's frankly very, very refreshing to see a commission focused on data and policy issues.

For those of you that don't know, the ACLP at New York Law School is a public policy program that's focused on analyzing laws and public policies -- the advance communications sector. Our major focus for the past year has been on Broadband, particularly as it relates to senior citizens, people disabilities, the telemedicine sector, and the education sector.

Our first few papers reports on senior citizens and on telemedicine are posted on our website. Our next two papers are forthcoming. We're currently in the midst of a comprehensive review of the policy and other barriers to greater adoption and use of Broadband by these groups.

And we would like to share those findings with the Commission upon completion, which we expect to be in about three to four weeks.

We're also engaging in a number of working partnerships with non profit organizations across the country that are focused on spurring adoption amongst seniors, low income individuals, and others to see what works, what doesn't work. We found amongst seniors for example that the key issue right now is adoption. It's not availability.

So what do we know about the senior Broadband demographic? Well right now we've got some 37 million Americans who are over the age of 65. The senior population will double in size by the year 2050. While some 63% of all households have adopted Broadband, only 30% of seniors have adopted Broadband. And older seniors are much less likely to adopt Broadband than younger seniors.

There are a number of reasons for this adoption gap. A major reason is simply the lack

of a home computer. Those over 65 are 21% less likely to own a computer than those under 30. Lack of awareness about Broadband, skepticism about its utility, and concerns about security and identity theft are other reasons that we've found. We've interviewed seniors and senior organizations from across the country and there's just a whole host of reasons.

But closing this gap or at least narrowing this gap is critically important. We found that with the seniors and organizations that we've talked to that Broadband is an incredibly empowering and transformative tool for seniors, sort of beyond delivering the benefits that we all see in Broadband; it does a number of other things. For example, it helps stimulate brain exercises and allows seniors to exercise their mental -- as they age. That's very important tot a number of older Americans.

It facilitates, as we know, interactive communication with family and friends; that staying connected is very, very important for

seniors. It enables employment opportunities. According to AARP, some 69% of baby boomers and seniors are willing and able to work past retirement; they want to. But part time work and being able to work at home is critically important. Broadband is essential to enabling those opportunities for older Americans.

And Broadband is enabling seniors to age at home for longer. Seniors are using Broadband to research health information for themselves, but they're also using at an increasing basis a range of telemedicine services like networked sensors that provide medical practitioners with real time tracking of vital signs. And it's estimated that by 2012 there will be some three million seniors using these types of in home monitoring systems.

So what can be done to help close this gap? Well, comprehensive education and outreach by individual actors, by public private collaborations, by government, is critically important to raising senior awareness. We found that the education and outreach effective programs

are the most important when it comes to seniors.

Fostering a culture of applied technology and innovation across the country and at every level of government to educate seniors on the benefits of Broadband is important, whether it's through HUD, or the Rural Program, or the FCC. I mean it's really critically important. When they learn it they're like sponges. Older Americans are absorbing this information and when they're tapping into Broadband, when they're trained to use it, they love it; they love it. They stay on the networks and it's really enhancing their lives.

So I would say with a quick wrap up that as the FCC moves forward, it's going to be important, I think, to focus not just on what the FCC can do but also what actions can Congress take, what actions can other state actors take, what are the recommendations that should be pursued by policy makers even if the FCC itself might not be the actor on those. Thank you so much.

MR. DAVID: Valerie.

MS. FAST HORSE: Good afternoon. My name is Valerie Fast Horse and I'm the Director of I.T. for the Coeur d'Alene Tribe. And I'd like to thank Jennifer and the FCC for having me here to speak about Broadband as it pertains to tribal people. The Coeur d'Alene Reservation that I come from is in North Idaho and the Reservation covers 345,000 acres.

We -- the Coeur d'Alene Tribe has an elected government like all tribes do and the government is responsible for managing the land, and the air, and the water, and the infrastructure that cross tribal lands. And even though we're -- you want us to talk about data, I think it's also important to realize, you know, why our tribe is where it's at; why were we left behind.

When you look at the build out of this nation's telecommunications infrastructure and the invention of the phone, our tribe was still at war with the United States. We weren't thinking about subscribing for a telephone or getting dial tone.

You know, we were at war; we were signing peace treaties. We were getting an executive order; we were trying to get our land set aside for our use.

So were we left behind, I think so, just a little bit. So in that context, you know, I think that, you know, one of the issues I would like to raise is that when we develop this nation's Broadband strategy and policy, I really think that it would be super to include the tribes and this nation's first Americans in this Broadband policy and to include us in any discussions, especially as we talk about building out communications on our own lands.

The Northwest has 55 plus tribes. The tribes have reservations that have coastal lines. The tribes have reservations that border on -- have international boarders. And so in managing these lands, it's important to realize that this nation's infrastructure is only as strong as its weakest link.

So in that context I also want to talk about the availability of Broadband. You know, we

-- the infrastructure grants that we have available through the Stimulus I think is a very good head start. But I think as far as putting a Broadband out to not only the tribal nations, but America in general, we need to do more. We need to put out -- this needs to be, you know, very minimum, a down payment, and we need to have more infrastructure grants in the future. I think that's one of the major things.

And the other thing is affordability. We have tribal people who might have access to Broadband but they can't afford it. And just to give you an example, we have about 7,000 people who live on our reservation and that equals to about 6,000 households, and we have a broad -- a wireless Broadband ISP that my tribe runs and we only have 550 paid subscribers. That's not because we can't reach only 550, it's because that's how many are willing to pay for Broadband.

The rest of them, now you want to say is it important to them, well, some of them it is because in addition to this paid subscribership we

have a technology center that has 40 computers, 5 Macs, 35 PCs that are half Windows and half Linux, we get about over 2,000 sessions per month who are logged in our center. So people are stopping in; they're using the center. Broadband is important to them for whatever reasons but they can't afford to get it at home so they take advantage of our technology center.

I think that as our tribal members become more relaxed with the use of Broadband and it's -- the use of it, that they will adopt it and want to bring it at home, but it has to be affordable. So again, I would like to say that -- close by saying that the availability through more infrastructure funds and affordability through possibly universal service reform, I think will help us to bring Broadband to more Americans; thank you.

MR. DAVID: Thanks, Valerie. Just one comment I should have made earlier. I've been asked to keep much conversation about NTIA and RUS and the BTOP Programs sort of out of this

conversation. We don't have a lot of influence over that and it's important to keep that as a separate dialogue. So to the degree you have a general comment, that's fine, but let's not get too specific about the specific activities over there. Doug?

MR. LEVIN: Thank you. My name is Doug Levin. I am Deputy Executive Director of the National Association of State Boards of Education and these are state education policy makers. Personally, I have helped in roles outside of the government to help them craft what have been now three national education technology plans that the U.S. Department of Education has issued since 1996.

They are currently undertaking an effort to develop a new plan in this Administration. And I hope that there is robust dialogue going on between that agency and this effort. That plan, from the first one forward, have driven enormous change in schools and given my role, I do want to focus my conversation there, being respectful of

the fact that there is a session on this topic and in its entirety tomorrow I believe.

So in our view, the public K12 System is the best and most direct way to reach children, who by virtue of personal circumstances, misfortune, or geography, are most challenged in realizing a satisfying life, a good job, and active citizenship. But let me talk a little bit about how we frame this in K12 education because I think by and large it is not framed as Broadband problem and those are not the issues that keep our members awake at night, though perhaps it should.

There are about 48 million students in public K12 education; 37% or about 17 million of them participate in the free and reduced lunch program, essentially a measure that we use for poverty. 14% or approximately 6 million receive special education services of one type or another and the demographics of the student population in the public system is changing quite dramatically. By 2023 the estimate is that schools will be, public schools will be majority minority.

The state of Maryland at this moment is majority minority and there are certainly communities around the country where that is changing. A lot of that has been driven actually by the growth in the Hispanic population. Roughly one fifth of kids in the public system are in rural settings and served in rural communities. But in some respects, one could observe that there is a disproportionally high infrastructure of public schools serving them.

About one half of school districts in the nation, and there are about 15,000 school districts, about one half have one or more rural schools in their footprint and approximately one third of all schools are located in rural communities.

In education and the conversations that drive our policy making around student achievement and we pay attention to disparities in a few different ways, one between U.S. students and international students, but also -- and we've seen gaps there and troubling gaps where other

countries have been catching up or maybe passing us in academic achievement. But also, inequities within our school systems between students of different racial ethnic groups, between general education students and special education students, and there are many reasons for that inequality.

And to its credit, this Administration is focusing a lot of its efforts in trying to identify and serve those schools and address those issues. There have also been larger conversations going on about what students should know and be able to do in the future and the notion that Broadband and technology are changing the nature of the workforce and what it is that students should know and be able to do.

The second point I'd like to make is that there certainly is a history of programmatic efforts to bring Broadband efforts to bring Broadband to schools and to make good use of it. And that this access builds systematic capacity to better serve all students and I would say that without it, without these investments, without

robust Broadband access to schools, these persistent issues will not be addressed.

This may not be the language that education -- education policy makers use to talk about it but I promise you that the innovation that they would like to see is not possible without it. Data here are a little be -- and much has not been collected in recent years, but the efforts where people are making investments right now in formal education are around online courses and blended hybrid online and offline courses.

E-textbooks and open educational resources, online testing of students, and a tremendous effort to drive decision making through data, both for administrators and policy makers, but also in the classroom at the instructional level. This is simply not possible with robust Broadband access.

And finally, and my third point, is that there are opportunities to make a difference and it's through investments in leadership, capacity building, addressing policy barriers, and making

investment. It's important to continue to build the capacity of K12 school systems through broad investments in Broadband, but also through direct programmatic efforts.

Targeting adverse populations; this should focus on individual student access in and out of school -- for good use, not just for access. And I do understand that maybe beyond the scope of what the FCC can do, but also to connect in and out of school access. To build interagency capacity at the federal and state levels and as well as with the foundation community, and finally, to invest in research and development in a systematic long term way; thank you.

MR. DAVID: Thanks Doug. Staci, thank you for coming.

MS. PIES: Thank you.

MR. DAVID: It's good to have someone who represents one of the most broad applications. We have a lot of what I would say are demographic segments represented here. It's important to get your viewpoint because you sit across a lot of

them.

MS. PIES: Mm-hmm.

MR. DAVID: You know, among all applications on the web, you all stand pretty far out there and so interested in your perspective across demographic segments.

MS. PIES: Thank you; I'm excited. Good afternoon. My name is Staci Pies and I'm the Director of Government and Regulatory Affairs for Skype. And we thank the Commission for inviting Skype to participate today because we hope that we can share a new vision of Broadband opportunities for America and address issues of interest to the Commission and to all Americans.

Skype is a software company founded in 2003. Since then, we've grown to over 480 million registered users or -- on the internet without owning any telecommunications infrastructure. Instead, we partner with telecom operators to provide our users with more choices. And to the extent that all networks are equally open, Skype conversations can take place on computers, mobile

devices, and Skype certified hardware; next slide. Skype enhances the value proposition for Broadband consumers in numerous ways. Looking through a purely economic lens, Skype can offset consumer spending on communication services. For example, when a consumer is deciding whether or not to purchase Broadband and commit to that monthly cost, he's more likely to do this if he thinks that he can save money elsewhere. Of course, you didn't invite me here to make a product by sharing the features of Skype Software, I hope you'll begin to see the connection between why people subscribe to the underlying broadband service. Why entry by Longtel competitors such as Skype creates consumer welfare gains, and importantly why applications such as Skype are an important part of the broadband ecosystem.

When consumers are able to download and use the applications of their choice to the fullest extent of the applications features consumers will subscribe to, stay on, and continue to increase their use of broadband.

A very simple example of Skype transcending the value proposition, is the irresistible pull of an application that allows a grandparent to actually see his or her grandchild across the country, or anywhere on the globe for that matter. And all of this without incurring additional cost beyond the computer hardware and the broadband connection.

In this way broadband applications that consider -- cater to individual needs drive demand for broadband services from all sorts of people. Encouraging those that might otherwise sit on the sidelines to invest in computers and broadband connections to the internet.

A real quick example, and I have many I can share with you. I was at a Psychiatrist Dr. Loren "Olson in Iowa who started using Skype to communicate with his grandchildren, and then realized he could expand access to the healthcare system by visiting his patients virtually. This type of experience drives broadband adoption, and greater utilization of broadband connections.

As I said, I could share countless examples with you, but if I leave you with one policy point related to how consumers use Skype it's that to the extent that applications are openly available to consumers across all broadband networks, applications will attract new subscribers, and help define and narrow the adoption gap.

A recent survey conducted by Hugh Internet and American Life supports this proposition. The survey shows that many non-broadband users do not subscribe simply because they do not see the value of broadband contributing to the demand gap. And this gap continues to grow. On Monday, Lightman Research Group reported a 29 percent drop in new broadband subscriptions over the last year. The fewest new subscribers in eight years. When you juxtapose this statistic against results from a recent Skype sponsored Zogby International Consumer Survey showing that 67 percent of mobile users want to be able to choose their mobile application

themselves, it becomes clear the consumers want greater value and control over their broadband experience. We interpret these statistics as a call to action for all players in the broadband ecosystem, to deliver more of what consumers want and expect, and for the Commission to protect consumers in this way.

Skype recognizes the foundational role network operators play in the broadband ecosystem, and without connectivity devices and applications cannot reach their full potential. This does not mean however that network operators should receive special treatment to protect their business models. Instead, the Commission should rightly expect much from these central players, and establish a balanced policy of demand and supply (inaudible)protections. Specifically -- next slide. The Commissions should ensure the same standard of openness across all broadband platforms, wire line, and wireless alike. Once the link between access and software is broken, consumers can take the software to any network

platform increasing consumer choice, flexibility, and mobility.

The future's an exciting place and we see a world where consumers increasingly demand the broadband experience that enables them to take their chosen application wherever, and whenever they want. But applying different rules to different networks threatens this consumer expectation. The Commission should narrow the adoption gap by maximizing consumer freedom, and adopting policies that treat all networks equally giving Americans the ability to use applications and devices, and importantly the broadband network to their maximum potential.

Thank you for giving Skype the opportunity to speak with you today, and to share our vision of the broadband future.

MR. DAVID: Thanks Staci, Dr. Sanders?

DR. SANDERS: Well good afternoon everyone. I am President Emeritus of the American Telemedicine Association and for full disclosure I am also on the Board of Directors of the Universal

Service Administrative Corporation and I chair the Rural Healthcare Committee, but that hat will not be on for my comments.

I also want to thank the Commission for this Yogi Berra deja vu all over again moment, because 13 years ago sitting in this room for Chairman Hunt as a member of the Telemedicine Advisory Committee we were debating and discussing these same issues. I want to very much thank the Commission as well as other Government agencies for really having developed the umbilical cord for our healthcare liberty system. And based upon that work and significant modifications in the technology, and the mindset of my colleagues we now need to go from an umbilical cord to a full circulatory system.

I think it wouldn't be overstated to say that broadband availability is a matter of life and death for many patients in rural communities, as well as people within urban communities. And the latter really hasn't been underlined enough, but let me point out that when you have a traffic

accident, and you're brought in with a crushed chest injury in a rural hospital, you have no access to a trauma surgeon. Today you do.

Secondly, if you come in with a stroke, the difference between your walking out of that hospital and not in a rural community has now totally changed, because now we can provide access through telemedicine because of the communication infrastructure to a neurologist who can within the critical three and half to four hour period of time administer thrombolytic therapy. For the neonate in distress we can now bring the neonatologist, for the intensive care unit patient in the rural hospital in septic shock we can now bring the intensiveness. So, this is not a simple issue of access, or convenience, or cost. This is an issue of life and death.

Now, one of the things that happened was the dramatic introduction and then migration of the technology, not only from the hospital setting but into the home setting of the patient. One of the things that we hypothesized in the mid '90s

was that wouldn't it be better if we could examine our patients in their home, and anticipate their downhill spiral before they end up in the hospital emergency department.

So, we developed technology that afforded us the ability to literally examine the patient in the home. And all of a sudden something happened. It wasn't that the technology afforded us the ability to examine our patient in the home, we found out that we -- that when we began to examine them the values we were getting were much better, much more physiological then the values we were getting when we saw them in the office. Fundamentally the examine room has changed, the exam room now has to be where the patient is, not where the doctor is.

Taking your blood pressure in my office is absolutely ridiculous. I get a false value. That's why there's so many people diagnosed in this country with hypertension because they have what's called "White Coat Hypertension." Taking that blood pressure at home, or taking that blood

pressure where they're working is a much better value. Taking a child's pulmonary functions if they have asthma in my office, also is absolutely ridiculous. Where I need to take their pulmonary functions is in their classroom, and in their home. They breath the air in their classroom and at home. Not the air in my office. The antigens they're responding to are in their home and in their school, not in my office.

So, one of the fundamental changes that has occurred in healthcare delivery is to recognize that the exam room needs to be where the patient is, and taking this to it's most logical conclusion, and we've already heard comments about that. And that is that wherever I am I need to be examined.

Let me just say one thing that will frighten all of you, but any of you who have recently had a physical exam and been told by your physician that you are normal, I can tell you that you and your physician and you have not the slightest idea whether you're normal, because they

took a single point in time measurement, and that is an absolutely ridiculous measurement in terms of progression of disease. When do you become hypertensive? When do you become diabetic? Let me just tell you one single statistic; you begin to develop insulin resistance 13 years before you are diagnosed with diabetes. If we had these wireless medical sensors with a broadband infrastructure, we have the capability to begin to see that trending data.

Three critical points, one please look at the slide because this talks about adoption. This was a slide -- a picture that was put on a magazine in April of 1924, showing a young boy at home with his H1N1 influenza being taken care of by his pediatrician. And what is the technology they're using? The most intuitive technology known to the people in those day, which is a message to our technology providers. Your technology needs to be intuitive. This is a radio.

Finally, and I know I'm a little bit

over time. The reality is that we need to have a dynamic inventory of broadband capacity in this country that is constantly being updated. Number two, we need interoperability, we can't be developing silo's, this needs to work like a utility you walk in the room, and you turn on the light switch, and it is operational. That's the message that I'd like to leave with you, thank you.

MR. DAVID: Thank you Dr. Sanders. I'll try not to deliver another Yogi Berra quote in the course of this. Craig?

MR. SETTLES: Thank you, good afternoon. My name's Craig Settles and I am the President of Sucessful.com and one of my primary roles as a business strategist is helping organizations understand how to develop the business case for broadband networks. And from several years working with both rural communities, and urban communities; understanding what their needs are I feel very strongly that the business community -- the ability of broadband to impact the

effectiveness of how business' operate locally is going to be the key to success of any broadband strategy that can be developed.

This goes on two levels. One, the economic engine that we are trying to generate via broadband is going to be driven by the local business community. On the other hand, the issue of sustainability; how will you be able to pay for these networks, and more importantly the ongoing operation of these networks depends on the sustainability. Who the paying customers are, and the bulk of that sustainability model was going to come from the small and mid sized businesses that are in the community today, and which ones they can draw to that community as a result of having broadband.

If I look at you know what are the benefits, what is this going to drive them to adoption? One, is going to be their ability to open new markets, both nationally and internationally. It is also the ability to open up new opportunities locally, by being able to

provide greater services, a greater array of products, products delivered more effectively and efficiently locally. They open up new opportunities locally to benefit both them as businesses and also the community at large.

The other area is that broadband improves the operation of businesses. How well the market, how well they manage their people, how innovatively they come up with solutions to new problems that face them. So, broadband is going to be adopted if you can sell, or you can market, or deliver a technology that meets those primary needs -- next slide please.

For a national strategy to matter to small businesses, and again whether we're talking urban or rural. It has to reflect what their needs are. You know we sitting around the table, we don't have the paying point of working in a low income neighborhood, or working in a rural area. Okay, that prospective comes from the businesses in that community, and they need to be part of the discussion.

The strategy to be effective also has to take into account technology evolution. If we build what we think is efficient technology for today, it'll be obsolete before its even built out, which does businesses no good.

The third area is there has to be local influence on the strategies execution. You cannot build a strategy in Washington, and dictate the execution of that centrally. It has to be structured in such a way that locally both the businesses and the other stakeholders in the community can drive the execution of that adoption plan.

Last slide please. In terms of you know truly having an effective strategy, not only do we have to focus on the needs analysis part of the equation, but we also have to establish goals which measure what is the success of this strategy? All right, I see several things that need to be taken into account. How well the service sells, determines whether you have an effective strategy. It's like basic marketing

101. If I am marketing a technology appropriately, effectively, and showing how I am meeting the needs of that market segment I'm targeting, they will buy the product. That's my best measure of success.

New jobs will be created, again as an economic engine, if you're being successful, jobs are being created because businesses are being more effective, they're being more successful, they open up jobs. Just as an example, you know I may have a three four person operation currently, I put in broadband access, I may be able to expand the business to take on 20, 30 more people in the course of a year.

New businesses starting, a third measure of the success of this strategy. If you have built effective networks new businesses will start from within, new home based businesses will start, and new businesses will come into the area.

And then the last measure of success, which I don't think we measure effectively or discuss enough in the current mode of operation,

is the home based business. In a number of communities that have successfully introduced broadband, they see antidotally an increase in the number of home based businesses, and that becomes key part of the econonomic structure. Thank you very much.

MR. DAVID: Thanks Craig.

DR. STROVER: Thanks, I'm Sharon Strover, I'm a professor at the University of Texas at Austin, and I have -- I work with a team that's done a variety of studies looking at predominately rural regions. And what I've tried to do in this first slide is summarize some of our general findings. Let me elaborate a little bit on the biggest studies that we've been involved in because they might be the source of some questions from the panelists and from the audience.

Our most recent study has been an overtime study of four counties in the United States. In Michigan, Kentucky, and two counties in Texas. It was basically a quasi field experiment at which at one time in our first

survey of communities people had no broadband whatsoever. There was an RUS grantee in each community and we went in after the grantee had establish service or tried to, and then surveyed these same communities. So, we have a kind of pre post comparison in these communities.

The second major study we've done involved 36 communities in Texas that were recipients of broadband community networking grants under the Telecommunications Infrastructure Fund program that the State of Texas administered. This was a program that was gigantic, it was hundreds of millions of dollars. There was a huge variety of communities, and we predominately focused on evaluation measures.

Then finally we did a large study with the Appalachian Regional Commission. Looking at the relationship between telecommunications investments, and economic development. In general what did we learn about rural users? In those various studies we found that rural users want the same things that non rural users want from

broadband and out of the internet in general. However, costs are higher and the incomes of the people living in those regions, the incomes are lower.

So, there's a mismatch, and that accounts for some but certainly not all of the issue with respect to broadband subscription, and broadband take up. I think it does have a lot to do with the assessment of the vendor community as to what's truly a viable market or not.

We found especially in the Appalachian study, which you know looked at indicators from a 13 state region that access to expertise in rural communities is an issue, and this actually ahs some tangents with our findings in our field study in the four counties as well. If people can't see other people using the internet, if they don't' know what it does, if they have a question and can't get it answered, if there's nobody to reboot Windows when you get the blue screen of death, there are problems. There are problems.

And those kinds of people are few and

far between in rural areas. So, the issue of access to expertise is considerable. So, along with that role models, and leadership especially when it comes to enabling community efforts of any sort are absolutely critical. We found that small town and rural environments really need evidence somehow and models they have to be very present in order for people's perceptions of why they might use, or need broadband to substantially improve.

Public sources of internet connections are important in low income and rural communities, so libraries and schools are absolutely seminal, but they don't tell the whole story. Not all public sites are suitable for everything, and rural small businesses can benefit from broadband but they lack the knowledge base to really make use of it.

Can I have the second slide please? When I asked my research team what -- if I had three -- since I have slides, what should I put on those slides? This was what they recommended. It's a picture on the face of a water tower, there

is actually a person climbing up the water tower if you look hard you can see that. This was the base station for a wireless service in Crystal City that one of the RUS providers was creating. It tells an interesting story visually I think in that it illustrates how people will deal with infrastructure that's there and are opportunistic if there's a high point in a town that you can use for something like this, well go out and do it.

What the visual doesn't entirely tell however, is that ultimately this system was a failure. There was no lasting cooperation between the community and the grantor, the grantor never ended up really offering the services here. There were also some suspect motives that might accrue to the provider in so far as both in this community and in another community served by the same grantor -- grantee. The services never lasted very long.

The community allowed that they very nicely set up was dismantled almost overnight. In the meantime another small community just up the

road had a set of parents who thought that it was extremely important to invest in their kids education, and their kids computer literacy. They instituted a laptops in the schools program, with basically no help from anybody.

The moral of that particular story then is that community collaboration is pretty difficult and it's very hard to predict. Leadership is absolutely necessary. I'll stop there, thank you.

MR. DAVID: Thanks, Nicol?

DR. TURNER-LEE: Good afternoon, thank you to the adoption usage team for having us here, as well as the Chairman FC Chairman for convening these workshops.

I am Nicol Turner-Lee and I work with the Joint Center of Political and Economic Studies. The nations leading think tank that addresses issues related to people of color, and disadvantaged communities. And our -- the institute -- the Media Technology Institute has particular interest in representing the interest

of African-American's and of people of color in this broadband space, so that they are not left behind.

And so the topic that I want to address today is really related to the group that is experiencing right now the lowest adoption. So, I'm going to put up this slide and just jump right into it.

I mean what we're seeing today, and I think the Pew data is very significant in showing that we see an increasing demand of -- and use of adoption among groups, particularly subgroups. In the last study we saw more subgroups getting online as compared to previous studies. Where we are staggering is with African-American participation. Since 2007 we have only seen a 6 percent increase in adoption and usage rates among African- Americans, which speaks to as we develop the plan you know how we can develop strategies to increase utilization.

And when you can troll for income -- next slide, what we see is that not only are

African-Americans still not online, but if you are also poor you are less likely to be engaged, and if we were to put on factors of where you live, particularly in a rural community, it gets worse.

So, not to bring dire statistics to a rather enlightening discussion, it is one way that we should begin to look at how do we increase utilization among this group. Because obviously you cannot break the trajectory of poverty. If you don't have access to a resource that serves to empower and connect you to information that improves the quality of your life.

So, one of the things that I would suggest as we talk today and as we move forward on the plan is to consider the reasons why African-Americans are not adopting. In 2007 the primary issue was around relevance, and compared to other ethnic and racial groups the concept of not being interested in the internet was pretty dominate. If you looked at, and I don't' have a slide for this in 2009 the interest still remains the same of relevance, with regards to getting

African-Americans and other people of color online, but price has compounded this issue making it so that if you are not interested, and you can't afford it you're definitely not going to benefit from the power of the internet and new technologies.

With that being said, and keeping within my time limit, I wanted to share a couple of ways that we can begin to debunk these low utilization trends that we're seeing in this community.

One, is by -- I'm going to skip over this next slide and go right to this other slide. One is looking at the ways in which African-Americans are accessing the web. So, how are they getting there? In a recent conversation I just had it dawned on me about cell phones, and the use of mobile technologies that is enabling African-Americans and other people of color to get online. If you look at that chart that I have there 83 percent of African-Americans in 2009 Pew study around mobile use -- mobile devices are getting online much quicker as compared to having

a desktop or a laptop.

What's even more interesting is the use of gaming consoles and mp3 players and other devices that reflect the versatility and flexibility of the web. So, if we're looking at utilization, one of the recommendations could be to figure out what other devices or repurposing devices for educational, economic, and healthcare purposes. As outrageous as it may seem, it maybe kind of interesting to take your blood pressure while you're on a Wii type activity modeling device to determine how well that you're doing. So, that's a cultural context in which we can push the envelope on how we teach our children how we get people connected to jobs, and how we improve the quality of life and wellbeing and health of our citizens.

The other area for suggestion or consideration is how do we build content that is going to be relevant for this population. It's an easy notion that -- and concept for everyone that entertainment content is driving web traffic right

now. And we should not assume that African-Americans are this alone population of modelific where they're not going online to be entertained.

MR. DAVIDSON: To follow up on what Sharon said, I agree wholeheartedly. I think with a lot of communities, the tipping point is the person. You'll be hearing later today from older American Technology Services, and they operate clinics throughout New York, and through just one-on-one interaction between the trainees and senior citizens, they've brought thousands of seniors online, and beyond bringing people online, they've demonstrated some tangible dollar savings for some of these people.

In one of their pilot projects, they worked through 28 clinics throughout Manhattan and the Bronx to train seniors to navigate the Medicate Part D portal, and these classes helped seniors save about 19,000 on their drug costs. So it's really, with regard to seniors, the one-on-one experience that is brining the seniors - that's brining the seniors online.

There's not a panacea that will work, and there are lots of models throughout the country where people are trying different things, and it's working one by one by one to bring people online.

DR. TURNER-LEE: Yeah; I want to - I'm not sure if I'm - oh, I'm on now, bring another example, and to add to the people, I want to add the context. You know, there is this idea that where you are exposing people to broadband and internet applications, they have to be comfortable, convenient and familiar to the people which you're working with.

One example, prior to my assumption of my new role at the Joint Center, I was with one Economy Corporation for many years, from its inception, to think about programs that matched. I think I want to go back to one of the panelists, created that fusion between the digital mismatch, between where there were resources and the literacy of the constituent.

And in Chicago, there's a project that

started out as a TOP project, where it was primarily focused on infrastructure development, and that project, seven years later, people are getting it. And they did not necessarily get it when you brought in the infrastructure, they got it when they understood the public benefit of being online, when it became a public safety concern, when it became the context of bringing it into barbershops and beauty shops so people congregate. Where it was defined by the experience of that constituency did it make more sense. And so I think we've got to drive the people, the context, and the applications to get more people to utilize it so that it's not something that's sitting there, you know, waiting for people to dust off to engage with.

MR. LEVIN: I'd like to make a comment at a slightly different level. We've seen policy change happen in very positive ways, primarily, quite honestly, in a reframing of the challenges facing the education system, particularly in communities that have been economically challenged

by the changing nature of the work force.

So we can take Michigan as an example, or West Virginia. So take Michigan, the economy in that state has undergone dramatic changes. It looks like, you know, I don't need to go into that. So the leadership in that states understands --

MR. DAVID: I grew up in Michigan, I know.

MR. LEVIN: -- so the leadership in that state understand then that the products of the school system they're preparing need to be prepared for a different sort of environment outside of school, different job opportunities, different career opportunities, whether they stay in the state or not.

One of their reactions there then has been to provide - to rethink the opportunities that they're providing to children in the schools, to seriously consider issues like digital literacy and making sure that the kids there have skills that they can use to take jobs and stay in the

state through the use of - largely through the use of broadband.

And so what they've done is, they're required children in the schools to take online courses, as well as - in fact, what they have been promoting, it's been a career planning tool.

West Virginia has required students in their state to take a foreign language course, knowing full well that in many of the rural communities, they do not have access to a highly qualified foreign language teacher, but what they have done instead then is to offer those courses online.

So they've been in response really at a very high level to concerns about the future of the children in the school system, recognizing that the world has changed, and then trying to provide them opportunities. I think there have been challenges of where they've been trying to do what they have been already doing, but more efficiently and using, you know, sort of new approaches, and those have been much harder and

more difficult paths to change in driving adoption and use.

MR. SETTLES: I have a point; from my perspective, and sort of looking at it from a business case perspective, we focus a lot on the idea of, you know, we want to go after the adoption at the individual level, how do we get individuals online, and I feel that that is problematic in a couple of areas.

One very critical one is, again, I come back to sustaining the network. If you can't get the network built, and if you can't get an operator or a community to run that network year after year because they can't get enough individual subscribers, the network itself is going to fail, and all the rest of this discussion isn't going to matter.

Where I feel that we need to focus on are the institutional customers of the network, and here's why. If I focus on the government as a primary user of the network, number one, they will buy more services, they will contribute more

dollars to the operation of the network. But also, by virtue of the government using broadband, they engage the constituents for everything from paying bills and traffic tickets to receiving all types of government related services. And so you are driving the adoption by having an entity that is financially sustaining the network providing the content, the context, or the need for people who have done - just taking, for example, going, driving, you know, an hour to receive some sort of government service. Well, now you take that same person and say you receive the same service, but you receive it online because we now have a broadband network. So you give that end user a greater desire to be on the network, but the institution is driving the process, and they're also sustaining the network.

The supplies to education, where the education community is your customer, you're replacing their old infrastructure with new infrastructure. They will pay premium dollar for that advance because they can now turn around and

provide greater services for their constituents, which are students and parents.

It works with business, it works with medical and health care facilities. So, you know, this looking at the end user I think is going to be problematic. What we want to come back to is the - our institutional customers, our anchor tenants of the network. The other thing is, they pick up some of that marketing cost. You know, the cost of marketing at telecom service to an individual who's going to pay $30 a month, you may pay $200 to win that customer, but if I have the largest businesses, or if I have the hospital or the school system providing content that drives individuals onto that network, they are doing the marketing at a lesser cost to them and to the owners or the operators of the network.

MS. FAST HORSE: Thank you. You asked the question, what was the tipping point, and I just would like to address that by - you guys remember the movie called The Gods Must Be Crazy? You know, I think that - I knew that the way my

tribal peoples lives were - they were living had changed the day that we, you know, well, let me back up.

Our tribal people are very, very involved in tribal elections and tribal politics, and normally people go around the water cooler and talk about, you know, the events and who stands for what issues, but one tribal member took it into his hands to develop a community forum online and he called it the blog, and so everyone went on this blog and they started putting their questions and answers and having this huge dialogue and debate, and so for a tribe that has, you know, a little over 2,000 tribal members within a three month election season, it registered over 50,000 hits and comments. And I knew that things changed for my people forever the day my mom, who is 65 years old, she whispered to me, Valerie, did you read the blog.

MR. DAVID: But did the number of people who took broadband, you said it's 500 or so now, did it increase following that?

MS. FAST HORSE: It didn't increase the paid subscribership, but if we talk about adoption or acceptance of the technology, they accepted the technology, they like the technology.

MR. DAVID: Okay, right. Staci.

MS. PIES: Thank, Brian. Doctor Turner-Lee, I really appreciated your comments. And we have a statistic for you that I think is the positive side of some of the statistics that you provided. And you talked about comfort and convenience being tipping points. Skype has also discovered that control is one of those tipping points.

And one of the things that we found out in the Zogby survey that I mentioned in my comments is that young people, African Americans, and lower income people are more likely to use their mobile broadband connection if they have greater control over their experience. And what that means in terms of the survey is, the ability to download and use the applications of their choice in the way that they wanted. And I noted

that your statistics showed that African Americans use mobile devices to access the internet more, and that was very consistent with what we heard from our users in the way they wanted to use our application.

And so to the extent that the commission is developing policies that drive greater utilization in all communities, a focus on mobile and greater control over the consumer experience or the consumer having greater control over their experience is really important to drive usage.

MR. DAVID: Thanks. Jessica.

MS. ZUFOLO: This has been a really - very enlightening conversation and I want to thank everybody for their input. It's been very, very helpful for me personally, and I think for everybody in the room and everybody watching this on the web.

I think there's little question that there is strong demand for access and for a variety of applications so that Americans in rural, underserved areas, as well as urban poor

areas want to be part of the global economy, there's no question about it. And I think that our agencies here represented FCC, USDA, NTIA, and HUD, are very aware of this and want to be part of the solution. At USDA, we have the distance learning telemedicine grant program that really has tried to, and I think successfully met some of those challenges, but we can always do better and we want to. I think what I'd like to get a little bit of a sense from everybody on this panel is, knowing that demand is truly there and we can always drive more adoption in America, what we're trying to do I think, you know, on a federal level is to help also meet that through investment in networks, and the construction of networks, and the construction of facilities, as well as the attraction of applications, as Staci mentioned.

So as part of that, please educate us on how best we can continue to try to encourage private investment into these areas. And as Craig mentioned, you know, encouraging the local business community to partner with both federal,

state, as well as public sector institutions. I think there is a lot of opportunity for collaboration here. I know that my colleagues at NTIA have a variety of venues for that, and we do, too, at RUS.

But it would be really very helpful to hear from everybody as to how we can encourage entities to invest and to build networks that can actually serve these populations and give them what they want, whether it be through a CMRS service, a fixed waterline, you know, a variety - satellite, it would be very helpful to get that discussion going, because at the end of the day, we need to ultimately serve these communities with a product. And I think in tribal areas, there's strong demand, as we've heard. We've been hearing that, there's a tremendous amount of demand. So how can we incent companies to do this, and anybody that can build a network? Yes, ma'am.

MS. FAST HORSE: I would just like to offer a suggestion, something - I don't think it's unique to our tribe, but what we're doing is, as

you know, the biggest cost to delivering broadband to a rural area is your backhaul, your transport, your backhaul cost, and because we're so remote, you know, that's going to be by far the largest driver of cost, but we're doing is, we're working with our local power company, and they have an existing fiber that they use to connect from one substation to another, and between the two substations, their fiber, they have some dark fiber, and so we're negotiating an IRU with them so that we can use that I think as more non-traditional communication companies, but people who have existing infrastructure on the ground, that there could be some incentive for them to open it up and allow the use of their existing dark fibers for people who are serving markets that are very different than theirs, you know, we're not competing with them for customers at all.

DR. SANDERS: Let me just underline that last comment. In the early '90's, when I was asked to set up a state-wide telemedicine system,

we'll leave the name of the state off the table at this point in time, I went out and did a needs assessment of where the health care needs were, and then I was given the telecommunications infrastructure that both the state government had and the Telecos had, and when I overlaid the map with the needs assessment, it was very clear that we didn't have, or at least they didn't think we had the telecommunications infrastructure that we needed.

I said, well, wait a minute, this is not only - this is not the only fiber that is in the ground. We've talked about in the ground in those days, not satellite, they said what are you talking about, I said, well, have you gone to the power and light company, have you gone to the gas company, I said they have huge amounts of fiber in the ground for administrative purposes that they use five percent of the time and have, as dark, silent fiber 95 percent of the time. When you took all four maps, what the state had, what the Telecos had, what the power and light companies

had, and what the gas companies had, it covered all of our infrastructure. The important message there is, number one, are there incentives to try and get the power and light companies and the gas companies into another regulated industry, because we actually have - I know this is going to sound heretical, we actually had more fiber in the ground than we know of, and that is one of the reasons I made the point, we really need to do an inventory, and the inventory has to be a comprehensive one.

Everybody who talks about health care applications with telecommunications keeps thinking in a vertical stovepipe, and I say, look, if a rural community has band width for entertainment and commerce and banking, why can't we feed off of that. There's a lot of redundancy out there, so we really do need a dynamic resource of inventory.

MR. SETTLES: Okay. In the last three days, if you've been reading a lot of the headlines, there seems to be much wailing and

gnashing of teeth about the fact that the major incumbents did not submit bids for broadband projects. And my sentiment --

MR. DAVID: I really don't want to talk about that process, if it's okay.

MR. SETTLES: Well, no, well, there comes to --

MR. DAVID: I really don't.

MR. SETTLES: Okay. So let's talk about - we say we want to focus on private entities, which by and large means we want to focus on the major carriers or the major businesses as a driver.

I think the driver, if you look at communities like Pulaski, Tennessee, if you look at Jackson County, Virginia, in a number of these places where they have built community broadband networks or community networks in conjunction with local providers, they have come up with effective solutions because they worked locally and defined their problem and the local people decided what was the best technology, who were the best vendors

to work with.

And I think as long as we have this focus that only the larger telecom company, sort of as you mentioned, are our only solution or our first solution, we are not going to have effective broadband solutions either in urban areas or in rural areas. They have to define the need, they have to define the technology that meets that need, and they have to define the vendors. I think where the national government plays a role is facilitating the planning, maybe facilitating funding in some way, form, or fashion, but it's got to be from the concept that these are community driven, this isn't a national one sort of I-95 type network, these are policies that enable communities to come up with their own best solutions.

MR. DAVID: Doctor Strover.

DR. STROVER: Yeah, I tend to agree with the comments. What can I add to it? Factually, we found that all over the rural terrain that we've examined, there are countless cases of heavy

telecommunication users in the middle of nowhere, chemical manufacturing plant here, a bottle implant there, and insofar as these are often branch plants located in rural areas, they have a lot of capacity, they get the expertise from the home office. The small business down the road doesn't know what they have or even that they really exist.

So how can businesses, small and medium sized businesses, share in the abundance that might, in fact, be there or be proximate to where they are? Of course, you know, the typical recourse is to things like tax credits for sharing, capabilities could be one kind of answer. I tend to think that - I do know that in communities with very effective developers, those individuals make the connections between the entities that have resources and the entities that need resources, and sometimes some amazing things blossom. So, once again, an investment in that kind of economic development, on the local level, could be helpful.

Some awareness that - and encouragement of municipal involvement in running, creating facilities could also be another way. You know, it's not creating an incentive, but it's creating an alternative structure in locations that the marketplace has not chosen to give a nod to.

MR. DAVID: I was just going to say, we're going to have a whole panel on September 1st on state and local government efforts to push both deployment and adoption, so if we could - Nicol, if you want to maybe try to bring us back to adoption --

DR. TURNER-LEE: Yes.

MR. DAVID: -- that would be helpful.

DR. TURNER-LEE: Yeah, actually I was going to do that. I think, as Sharon mentioned, she actually talked about some of the deployment, you know, the incentives for business, tax credits, et cetera, that I was going to mention. But I think also, Jessica, to match it with the consumer side, so if you have the infrastructure in place, what incentives are there for consumers

to become actively engaged with this network, because I think that's, as Craig is mentioning, that's been some of the concern, if we build it, will they come.

And so some of the suggestions would be, in terms of government intervention, are there ways to relook at and repurpose the universal service fund to look at a lifeline for broadband.

You know, not to say that we take the same program, but are the incentives for first time or, you know, low adopters or people who are in vulnerable populations, disability, seniors, low income, to get online.

You know, and another thing to think about, too, are there incentives for, you know, again, with the return investment side of the equation, when people are transacting business online, are there other incentives that they get discounts on services, expedited, you know, paperwork or benefits that match the build-out with the consumer demand side. And so I think if we think innovatively in terms of utilization of

combining those two factors, it won't be just an infrastructure conversation, but it would be one I think that drives what Craig is talking about, where it's feasible to go into those communities and bring that asset. Another one to think of also is expansion of the E-rate program, you know, do we look at that as not only an in school project, but something that connects the surrounding community so that there's seamless integration of networks that exist around a school.

MR. DAVID: Francine or Luke, do you guys have questions?

DR. JEFFERSON: I do, I have lots of questions.

MR. DAVID: Go for it. I have a whole page of them here, so if you don't have any --

DR. JEFFERSON: I have lots of questions, but I will narrow this. I guess I've been thinking about this and doing this for over some 20 year plus odd years, one starting at Chaney University, a very small black college, in

developing a telecommunications program there and trying to partner with the local cable company - and others to bring something to that campus, then coming to the technology opportunities program. And one thing that has occurred to me, that as I listen and as I watch things going on is, if one were to examine say the narratives of the over 600 or so technology opportunity program grants, or if you looked at everything application that came through there, the thing that sticks out in my mind is the fact that it's not a native American tribe, it's not a school district, it's not a public safety agency, it's not a hospital, it's not a vendor, but it cuts across all of those areas, it's - each and every one is a collaborative effort, and it's a collaborative effort around solving some social problem.

And the thing that's unique to Americans, in my belief, is this ability to form associations around solving problems. So I would like to know, to what extent do each and every one of you, in terms of the organizations or the

interests or the stakeholder groups that you represent, think that perhaps it isn't an issue of - if we're talking about mapping and coming up with a plan, it isn't necessarily the infrastructure, the hardware, most of the top projects were ideas that came before the technology was there to support them, but now is the time.

So how can you channel all of what's here in a collective effort to lead various interest groups to help create the plan? Because it isn't necessarily a matter of relevance. What kind of questions would you ask people to have them tell you what it is they want to do, then you can bring the technological solution to bear on that perhaps. So I'd really love to hear your thoughts and ideas about that. And I have one specific question, Valerie. What was the first digital signal?

MS. FAST HORSE: Smoke signals.

DR. JEFFERSON: Okay. I'd love to hear your answer. Any comments or remarks? I'm not

sure that was a question, but I meant it to be.

DR. STROVER: I'll be maybe the heretic here. I think collaboration is really hard. I think it's extremely difficult, especially in resource poor regions. Most institutions that collaborate and even write proposals together in order to try to accomplish something, unless the proposal for whatever is being proposed is absolutely seminal to the goal, to the heart of an institution, or preferably more than one institution, it will be marginal, and people won't pay the kind of attention to it once say the money is in.

You think it's a good proposal, the money is in, they won't pay the attention to it that they would if it, in fact, is essential to the operation of that particular institution. A lot of grant programs have required collaboration, we looked at many of them. The ones that fail are far more common than the ones that succeed.

DR. TURNER-LEE: Can I jump in?

DR. JEFFERSON: Eighty percent of the

top grants sustain themselves.

DR. TURNER-LEE: Yeah; let me actually come in because I'm going to go opposite on the collaborative piece and I'll go with the prior top project and then I'll go with a recent example. So with the prior top project that I reference in Chicago, that project is a collaboration of 40 organizations that, indeed, started as an idea prior to the technology, but is morphed into an education implementation plan and now benefit structure to ensure that, you know, this group of desperate folks who come from all different types of entities, from the smallest mom and pop small business to a community organizing group, you know, that works with ex offenders are really bringing together their interest to answer the common question of how do we solve problems in this low income distressed community.

You know, a more recent example of collaboration is what we were able to do with civil rights groups, where you brought together the National Urban League, the National - Asian

American Justice Center, the Joint Center and others to come around a common dialogue of how do you use not necessarily broadband and get involved with the technical nuts and bolts, but, you know, what are we missing is really, you know, the question that was on the table by not having this access among our constituents.

So I think you're right, I mean there are logistical ways to handle collaboration and there is the possibility of having one organization more dominant than the other, you know, that's the power and dynamics of people working together.

But I think it's an interesting concept, Francine, I think it's the concept of moving people past the nuts and bolts of the technology and moving them towards the outcome of the technology that leads to a greater prosperity for people who are lower income and a greater, you know, desire and integration of how we use it here.

MR. SETTLES: Can I add to that?

MR. DAVID: Go ahead.

MR. SETTLES: I think that, based on the numbers of communities I've talked to, if there was some uniform process by which they could do needs analysis, so not that you have - well, yes, that you have a certain number and a certain type of question that you ask, what would you create if you had broadband, what would you do, you know, differently, what could be improved, what could be brought to the community, how could low income people become non- low income people.

But what a lot of people I talk to seem to be missing is some sort of structure, some sort of process for how to think about this and how to talk people through to get to a vision.

You know, one of the things that the people involved in planning Philadelphia's wireless network back in 2004 mentioned, so forget about the evolution of that network, but at the time of the planning, what one person referred to as the creation orientation to their town meetings, to their focus groups and so forth,

where it was all about what can you create with the technology, because it gets away from focusing just on the problem and being stymied by the problem of not having access to saying, well, we could create this and we could create that, and in sort of this collective creation mode, natural constituencies form, natural collaborations form, people start then asking, well, I have this resource I can bring to the table, another group says, well, we have dark fiber we can bring to the table, and by a collective creation orientation, you get - all these things are very positive to drive the process, and you have to prioritize, you have to eventually figure out, you know, which technologies will best solve these issues, but in the creation versus a, you know, I've got a problem, I've come to complain about it, you know, this will help.

But I think fundamentally, someone has to structure a way to talk about this, because if I get five different communities, they will have ten different approaches to the planning process,

right, we need some centralized, not planning, but a structure to do the planning.

MR. DAVID: Right; somebody had their hand up, oh, sorry.

DR. SANDERS: Yeah; I think from the health care space, the only thing that has sustained and allowed Telehealth to grow has been collaboration; without it, it never would have happened. Fundamentally, the technology was there before the collaboration was. The infrastructure actually was there before the collaboration. And what do I mean by the collaboration? Well, number one, would a patient accept being seen by a physician? All of the studies, from a data standpoint that you ask for at the beginning, from a data standpoint, between 95 and 98 percent receptivity on the part of the patient to this type of technology. Where was the biggest hang-up initially? The providers, the doctors.

This was a change, this was something new. Gee, we've never done it this way, how can we be sure that we're getting appropriate values?

Then when the provider began to, I'll use the term cave in and say, gee, this does work, then the question was, how do we get the payer to accept it, because one of the obstacles now, today, still remains, although the walls are rapidly being broken down, is to get the providers to say, okay, get the payers to say, look, we will reimburse for this, and you have the most recent announcement, I hope it's okay to say, I have no official association with them at all, you have United Health Group announcing that they will now allow their 70 million enrollees to be seen over telemedicine, over the web, on a PC.

When you get groups like that committed to it, when you get Medicaid realizing the bottom line, don't forget, Medicaid as opposed to Medicare, not only pays for the medical bill, they pay for the transportation of the patient. We have demonstrated that between 60 and 80 percent of the time we reduce the need to transport the patient from the rural community into the urban community, which is a huge cost saving, to

medicate, and then we have the continuing effect, then government coming in and saying, gee, maybe we ought to pay for this, the CMS, although still limited, is reimbursing for telemedicine consultation. So this cooperative aspect is absolutely critical certainly from a health care space.

MR. DAVID: So I wanted to ask a question from the room. It's been touched on, Valerie, in particular, touched on this, it's about community tech centers. And we have - as part of what we have to do, it seems elemental, but we have to really sort of define adoption. And even if you start to tease it apart and separate it into penetration or uptake and utilization, you still have to define that.

So one of the questions is, someone who is a reasonably active user at a community tech center only, not in their home, not on a mobile device, are they an adopter. So the question is, community tech centers and other public shared access points may serve an important role in

introducing broadband to non-users and educating them, but don't allow individuals to realize the full benefits of home or 24/7 access. How should we prioritize or think about forcing - prioritize or thinking about community tech centers versus other efforts? Open that to the floor. Staci.

MS. PIES: Skype supports the concept of community tech centers, and I think what's really important about those centers, and I would say that somebody who uses broadband applications at tech centers is definitely a doctor, is the introduction, it's education.

And you go into the tech center or the library or whatever resource you have in your community and you're able to access the applications that are available over broadband and you get a taste of, an understanding of comfort with the application and your desire to use broadband outside of the tech center is going to grow. And, you know, Skype is a perfect example of that.

We have libraries all over the country

who have installed computers with the Skype app on them. People can go into the library and use the Skype application on the computer. What people learn then is the value that I spoke about in my presentation and that they can use Skype over their broadband network if they choose to make the investment at home and that there will be cost savings for them, but more importantly, that they will be able to communicate in a way that's more intimate using Skype video. And again, as I discussed in my comments, if there are policies in place that allow the user to then take their application onto their mobile platform, it becomes even more personal for them.

And that supports the statistics that I cited earlier, that users want to be able to take their broadband experience where it's convenient for them. And so those centers drive that desire, drive the understanding of the value of the applications, and I assume then create greater adoption in their home or business.

DR. TURNER-LEE: I just wanted to add, I

mean I come out of the community technology center movement actually to get here years ago, almost 15 years ago, and I want to echo the importance of the community technology centers, whether they are libraries or CBO's or community based organizations that have computer labs because they're part of the general eco system for what we're trying to accomplish in this task. The thing to keep in mind as we look at the tech centers is not just looking at them as access points where you can get public access, but they are training and engagement hubs, where they offer the training, but they also offer this off line social networking between users that encourages incremental adoption.

MR. DAVID: So I think community tech centers in some ways are like motherhood and apple pie, it's pretty hard to object to them. I guess maybe the question is, is that enough, meaning we've got to find a way to draw a line somewhere that this is the line over which we want people to go. Are community tech centers beyond the line or

are they on this side of the line of where we want people to be?

DR. STROVER: I don't know if you can say that flatly that way.

MR. DAVID: That's fair.

DR. STROVER: I say it depends on the environment, it depends on the constituency.

MR. DAVID: Yeah.

DR. STROVER: We found - in our surveys, we found that community technology centers are useful in many cases for our constituencies that are a little intimidated by schools. Schools for certain populations weren't especially friendly places, or they're intimidating places. So to - even libraries just don't seem very welcoming to certain populations. So community technology centers can be that other third place where people like you are working and are doing things there.

MR. DAVID: I would ask the panel, if anyone has any data that speaks to community tech centers being a gateway toward real adoption in the full sense, at your home, with your own

access, you know, whether sort of statistical or longitudinal studies that give us a little bit of meat to what we all intuitively think is the case, I would welcome that, so --

DR. STROVER: Yeah, definitely.

MR. LEVIN: So just from the children's perspective --

MR. DAVID: Yeah.

MR. LEVIN: -- I would say that community technology centers, from the research that I have seen, are perhaps necessary but insufficient to meeting the need.

DR. TURNER-LEE: Right, thank you.

MR. LEVIN: And so there is research that shows a correlation between home access to the internet and higher academic achievement and greater academic attainment. The research has not been done conclusively to tease out why that is so, but controlling for other factors, that access remains a significant --

MR. DAVID: Are they correlated or is there a causal relationship?

MR. LEVIN: Controlling for other factors that are - that could potentially explain that access, it still has an effect. Now, they have not done the work to understand why, and I'm happy - I probably have them in my bag, I'm happy to direct you to those original sources.

MR. DAVID: That would be great.

MR. LEVIN: So it is associational, it's a - but that may just mean that we haven't answered the question yet.

MR. DAVID: Okay.

MR. LEVIN: There is an example of a slightly different, maybe flipped on its head community access model, and there's an organization based in - originally based in New York City, but now spreading around the country, called Computers for Youth. If you're familiar with it, and Elizabeth Stock, their Director, right, so that's a model where a community of families in a school setting, and in this case it was low income families in New York City, were provided with computer and internet access at

home, and training was delivered to the families, and then that was integrated with content and activities in the school.

And they have been doing a program of research there for many years, and I know they've seen some great successes, and I can certainly get you more information on that.

MR. DAVID: That would be great.

MR. DAVIDSON: Hey Brian --

MR. DAVID: Yeah.

MR. DAVIDSON: -- I was going to say, I agree with Sharon wholeheartedly on this point. I think, you know, to the extent community technology centers are a gateway, that's just really sort of step one, that's the infrastructure, people are essential. You can have a computer technology center where it's just completely ineffective because of the people, the lack of collaboration. So I think here, you know, to the extent the FCC weighs in on this issue, collaboration is very important, local involvement, involvement of the community, the

business leaders, the schools and libraries, very important, that the community center have a business case or a record. I think, you know, a lot of people will be coming somewhere for funding brand new start-ups, and there are organizations out there that fit the model or definition now and that don't fit it, but that are involved in the community with seniors and with kids and with the urban poor, and so it's - I think got to be a very dynamic model.

If there's this imprimatur of this is the model, then you've got something that's very static, and there may be a lot going on outside of the model that's very, very effective, where people can come in and prove their case, but they're not what the model has defined them to be.

MR. SETTLES: I'd like to make an observation from San Francisco and Philadelphia which have non-profit groups and community centers where the community center is part of the plan for where they teach the various skills and then they send them home to where they have access, whether

it's by, you know, miniature WiFi access points in public housing units or what have you, but it is a planned process for which the community centers are a part of, not given sort of a separate status or a priority over one or the other. And I think that what you maybe want to look at are proposals that paint the whole picture. We're going to take people who are uncomfortable in any other environment, we are going to give them the basic first skills, and we're going to push them on their way, and then they go home, and then they actually use the lessons, use the tools that we give them there, and it's a continual process until they eventually graduate out of that into, you know, having their own access accounts and so forth.

MR. DAVID: I want to give Luke a chance to weigh in.

MR. TATE: Thank you. So I just have a question here for Ms. Fast Horse and then another question for Doctor Turner-Lee and the remainder of the panel, and they're pretty well related. My

question first for you, ma'am, is, you mentioned that there are 2,000 monthly users of the computer tech center?

MS. FAST HORSE: Sessions.

MR. TATE: Exactly, so I was wondering how many unique users that is on a monthly basis, if you know that. And secondly, we have seen significant variation in the frequency of use, the modernity of equipment, and the availability of training and sophistication of programming in these computer tech centers; so to the extent to which you could explain what has made your center successful, what you would see as sort of the key foundational elements of your success, I think that would be important. And then the other question I have for you and another question for Doctor Turner-Lee, you mentioned that you have 550 out of 2,000 people connected, and I was wondering, because you mention the cost system major barrier, first, if you could talk about whether it's more a barrier of the hardware cost or of the monthly service cost, and then secondly,

if you've looked into at all universal service plans or policies and what the potential there would be and whether or not they're government - federal government policies that could support that to help spread the cost out.

And then that leads into my question for you, Doctor Turner-Lee, and for the remainder of the panel, you know, as was mentioned earlier, there's a significant amount of money that goes into the marketing of individual accounts, and we've heard some interesting reports on what then that influences, what markets the individual telecom companies actually target, but given that there is such a significant portion of the cost of business wrapped up in the marketing, and that also there are great economies of scale in going into concentrated populations, I'm curious for you, Doctor Turner-Lee, if you can talk about some of the best models for bringing a concentrated population or a cohesive population, whether it's a neighborhood or a development online, even if they already had broadband available, how you

actually get them signed up, and then what the major barriers to such an effort have been or would be, and then finally, what government policies have helped those efforts and what potential government policies could make it easier to get at concentrated communities and take advantage of those economy scale?

MS. FAST HORSE: That was a long question.

MR. TATE: I apologize.

MS. FAST HORSE: I almost - I forgot what you said first. First is the unique users, unique --

MR. TATE: The unique users and what has - what have been the foundational elements that have made your neighborhood network center, your computer technology center an example of a successful center, given a variation of that.

MS. FAST HORSE: Okay. Well, first of all, the unique users is about one-third of the sessions roughly.

MR. TATE: Okay.

MS. FAST HORSE: And we have a combination of adult users and lower - young adults and old adults during the day, and then after school, we're a bus stop. I think that adds to our success. The bus stops, all the kids jump off the bus, they run in there and they populate the center and take over until it's closed, no one else is allowed.

I wanted to answer your question, too, about adoption real quick while I'm addressing this is, can we count that as adoption? Is too soon for us in the life of our tech center to know if these users are adopters because they're not decision-makers in their homes, they're not the bread winners, they're kids, they don't pay the bills. I think if they had their way, they would be - they would have broadband in their home, so once they grow up, I think they'll get it, some of them already have, I don't know how many.

But what makes us unique is, one is, we have a very open lab, we're not like a library or any other public place, you know, they can do

anything they want on our computers, we don't care because we'll just stick some - the image and fix them back to default, you know, the end of the week, so they can do whatever they want. We have a very open, creative environment, and we have a combination of - and windows and macs, so that it picks the brains of, you know, all kinds of kids, successful. What was the other question?

MR. TATE: The other question was just you mentioned that cost was the major barrier to adoption for the 1,450 or so folks who haven't adopted, and just whether that cost is more of a hardware cost barrier or a monthly cost barrier, and then to what extent you've explored potential ways of going to universal access or distributed costs across the population.

MS. FAST HORSE: I haven't explored universal service access, I don't believe it exists for broadband, I think it's more for people who are ILEC or CLEC, and we're not, we're an ISP. As far as the cost barrier, a lot of people can't afford the basic, the computer or the laptop to

connect to the network.

We don't have very real large installation costs, it's $20, and then our lowest package is 24.95 a month. We don't have a contract associated with it, so - but still we have people who choose to use the technology center because it's free, it's there, and they get what they need. I really like the Skype presentation because I think it is the application that's going to drive the use and make people bring it home. If our adults don't get it now, definitely the kids do, and when they become decision- makers, I think they will bring broadband into the house.

DR. TURNER-LEE: I think I got the heart of my question. I wrote down the three parts, best practices, major barriers, and policy, so I think I got that part. So, you know, not to sound self-serving because I know my former colleague from one economy will be on the next panel, but I do want to share, I'm sorry, Brian, I'll just share very briefly two examples and then maybe a

third to add onto the two examples of best practices, and that comes my, you know, seven to ten years being out there in the field with one economy.

You know, one, I think in concentrated populations, it's going to the nugget of what we can control right now, which is affordable housing. And so leveraging in the one economy model, what we essentially did was to change the way the low income housing tax credit was used at that time to build new housing.

With the greening of our environment, with the smart retro fitting of our housing developments, you know, a suggestion to get beyond, you know, the barrier of concentrated populations not having access is to require any housing development that receives federal, state, or city funding to have a broadband connection. Now, you can go further. In many of the programs that we did under the creation of an equity fund is that we have it where families have five years of free internet access and that eventually rolls

in as a utility to the developer as they are giving services to that community.

That's not much different than what we see in the rental communities or what we see in upscale neighborhoods of our cities, it's just taking the same model and bringing that forward.

The second recommendation in terms of increasing adoption is around engagement of young people, and I'll start there and kind of demonstrate how that could be expanded. We had a program at that time, and we still do, called the digital connectors, which were low income housing, low income kids, rural, urban, tribal, working in their community to become technology ambassadors to their neighbors, their trusted sources of information.

Even though, you know, those kids may have not gone to the best school, may not have been involved or had parents in their house that knew about the technology, the combination of those digital literacy skills and those service opportunities crafted a core of young people that

can essentially go from development to development, community center to community center, library to library to provide the support. We should consider in this country developing a service learning initiative around technology. We could repurpose the Americorp Program, Teach for America, and other programs that make it a priority, a necessity for young people to have that service experience when it comes to technology.

I was recently in a conference and someone said we do that, we send them overseas, let's keep the kids in this country to do the same thing that we're sending them overseas to do, building robust networks, training seniors, connecting schools, so that we can build a capacity of all American children.

And then I would say the third thing, and it's a critical policy suggestion, is to go back to what the fellow panelists have said and to connect that interagency and interdepartment-wise. If we put in place standards at Department of

Labor, at the Education Department, where we're requiring this to be part of the public school standard, where we're looking at work force development programs where it's not just required for you to be in a class, but you need to be in a technology class to get your benefits, then I think we'll begin to see this mandating and incentivizing of people to get online.

MR. SETTLES: To go to your question about marketing, because I think you had a question relative to the marketing cost and how do you tackle that if you're going to tackle adoption, I think the best way to contain marketing cost, but maximize marketing efforts, is the partnerships and the collaboration that you draw.

Again, I can go back to Philadelphia, where their approach in the communities was to find the agencies and to find the non-profit organizations that have relationships with people and induce them in some way to introduce the computer, the access, and the way of doing

business with those agencies and those non-profits as a way to bring those individuals on board.

And then what they do with them in an interactive sort of day-to-day business side, then expands into their personal lives or other business areas, because that's their comfort zone. They are already comfortable with dealing with the agencies, dealing with the personnel, so all you're saying is, here is a mobile device, here is a laptop, use that as a way to get better, faster service. And it truly takes a lot of the cost out of that marketing equation.

DR. STROVER: This is kind of where the notion of embedding the functions that people actually want, aka relevance, into the experiences that people have is a very useful and helpful way to get them to approach the technology more effectively.

I'm reminded of in these - thinking of case studies of Zepata County, which was in the past few years enjoying some economic growth in South Texas because the gas industry has been

booming, and that really created some incentives for younger people to try to get a slightly better education because they thought that they could get jobs in this industry if they had a better degree, either a completed high school degree or a little bit of college, and the work force center was able to respond to that and create some distance education opportunities with a community college in that case.

So there was - but I remind you, it's a whole context, it was a constellation of factors that had to exist in order to make that work. I think with - our society is moving toward the need to connect to the internet for all kinds of mundane things. Now, whether it has to do with obtaining educational services or health services or simple transactions, E government sorts of transactions, those can provide a nice tableau that will, in effect, force people to encounter the technology, and then if there are these centers around that can help, that could be, indeed, be a very effective best practice.

MR. DAVID: Thanks. That's how you pull up the microphone.

MR. LEVIN: Thank you. Just very quickly.

MR. DAVID: You get the last word.

MR. LEVIN: Thank you. I doubt that actually. Just a couple of opportunities in terms of the policy context; like many around the table, I've been at similar tables for a lot of years, but two potential opportunities for the federal --

MR. DAVID: But this is the best one you've got.

MR. LEVIN: Thank you. Absolutely, I'm in the center of the table. Schools absolutely - I mean focusing on just the children and the users is absolutely important. I think in thinking about where they're headed and their work force needs and the work force needs of the country, broadly speaking, is important. There are private, public initiatives right now, doing that like the partnership for 21st century skills that are laying out a notion of what children should

know and be able to do today, in today's environment and going forward.

I would also note that there was an effort out of the Department of Labor in the early '90's, the Secretary's Commission on achieving necessary skills or scans, that was a comprehensive effort to figure out the needs of employers and what is needed to succeed in the work place.

That was done in 1991. I would assert that the nature of the work force has changed quite a bit, and having such data would probably be very useful in driving decisions about how to shape a lot of these programs, in schools and elsewhere.

And then I would note that in 1996, when the U.S. Department of Education put out its first national education technology plan under Secretary Riley, the title of that plan was getting America's students ready for the 21st century, meeting the technology literacy challenge. So this notion that children today

need a new set of skills because of the way technology has changed the environment, and these are skills about how to operate the technology, there's always concerns about an operating system or a piece of software will come and go, but you do need to be able to function in that sort of symbolic system. And there are also a lot of concerns among children around issues of safety and ethics. And I would say whether it is about technology or digital literacy or media literacy or around safety and ethics, there is not in this country a comprehensive and uniform approach to that being taught anywhere.

It is happening in pockets, but it is not happening systematically at the state level, and certainly not at the federal level, and it is a mantle that the government, the federal government has picked up before, and I think the issue probably has only gotten heightened over time and not lessened.

MR. DAVID: So we're unfortunately out of time. I would take more time, but there's

another panel beeping right behind us as we finish up adoption. This was really I think fruitful. Hopefully our audience got a lot out of it, I certainly did. I'm left with a couple of questions which I suspect I will probably, or someone will follow up with you, primarily that go to the question of, you know, we somewhat purposefully brought a series of demographic slices to the table, ultimately what we have to think about is not demographics or not demographics only, but more attitudinal and sectographic, and so, you know, if we were the chief marketing officer of a company, we would think about it that way and we would define segments both of non- adopters, people who have not taken broadband, purchased it, and then separately those who may or may not take it, but don't use it or across the spectrum of usage, and why does that segmentation lead them to be in that spot, because I think it's only then that we can define constellations that work to meet each of those needs and to bring the local sort of

partnership and execution to solve different pieces of different problems for very different segments, if you'll allow me to use that term.

So we may come back to, if anyone has thoughts on that topic in particular, it would inform us. I think we're going to get dozens of ideas about ways to slice and dice segments, but we'd be really interesting in conversing further about that as we go forward.

So thank you for your time. Hopefully you'll find it fruitful. For those on the web, hopefully it worked well. And the audience, thank you for coming and spending the time with us.

(Whereupon, the PROCEEDINGS were adjourned.)

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