FCC Proceeding 14-126
August 7th, 2014

Hello,

I strongly support updated definitions of broadband and other terms for internet service. I live in a rural area with wireless access and dial-up wireline access.

> With this Inquiry, we start anew by analyzing current data and seeking information that will enable the Commission to conduct an updated analysis for purposes of its next report. In particular, we seek comment on the benchmarks we should use to define "advanced telecommunications capability," explore whether we should establish separate benchmarks for fixed and mobile services,

I agree that fixed and mobile services should have separate benchmarks. More on latency and data allotments later.

> which data we should rely on in measuring broadband, whether and how we should take into account differences in broadband deployment, particularly between urban areas versus non-urban and Tribal areas, and other issues.

Taking into account differences in deployment seems like an improvement for rural areas. Satellite is available but it can not effectively compete against wireline.

> We seek comment on whether we should modify the 4 megabits per second (Mbps) download and 1 Mbps upload (4 Mbps/1 Mbps) speed benchmark we have relied on in the past reports.

Absolutely yes, the speed benchmark needs revision. For businesses that connect to their customers through the internet this speed benchmark is not useful. Improving the definition of broadband will allow businesses and customers to improve service by having clear distinctions of the various common speed levels.

> We also seek comment on whether we should consider latency and data usage allowances as additional core characteristics of advanced telecommunications capability.

Latency should absolutely be considered in speed benchmarks. If only for the simple reason that it directly affects speed. Bandwidth can always be increased through network techniques, but latency improvements require physical infrastructure upgrades. Customers whose networks are not competitive with regard to latency need to know this as part of choosing who they will do business with.

> We also seek comment on whether we should consider latency and data usage allowances as additional core characteristics of advanced telecommunications capability.

Yes these should especially be considered for mobile non-fixed connections as they are extremely constrained in 1) data allotted and 2) price per gigabyte (or megabyte!) in the case of overages. Latency is also very important to take into account for these connections.

Please see Stuart Cheshire writing in May 1996 about latency at this link http://rescomp.stanford.edu/~cheshire/rants/Latency.html.

Here are some choice quotes from Cheshire's article:

> If you wanted to send ten characters over your 33kbit/sec modem link you might think the total transmission time would be:
>
> > 80 bits / 33000 bits per second = 2.4ms.
>
> but it doesn't. It takes 102.4ms because of the 100ms latency introduced by the modems at each end of the link.
>
> If you want to send a large amount of data, say 100K, then that takes 25 seconds, and the 100ms latency isn't very notic[e]able, but if you want send a smaller amount of data, say 100bytes, then the latency is more than the transmission time.
>
> Why would you care about this? Why do small pieces of data matter? For most end-users it's the time it takes to transfer big files that annoys them, not small files, so they don't even think about latency when buying products. In fact if you look at the boxes modems come in, they proudly proclaim "14.4 kbps", "28.8 kbps" and "33.6 kbps", but they don't mention the latency anywhere. What most end-users don't know is that in the process of transferring those big files their computers have to send back and forth hundreds of little control messages, so the performance of small data packets directly affects the performance of everything else they do on the network.

Later in the article:

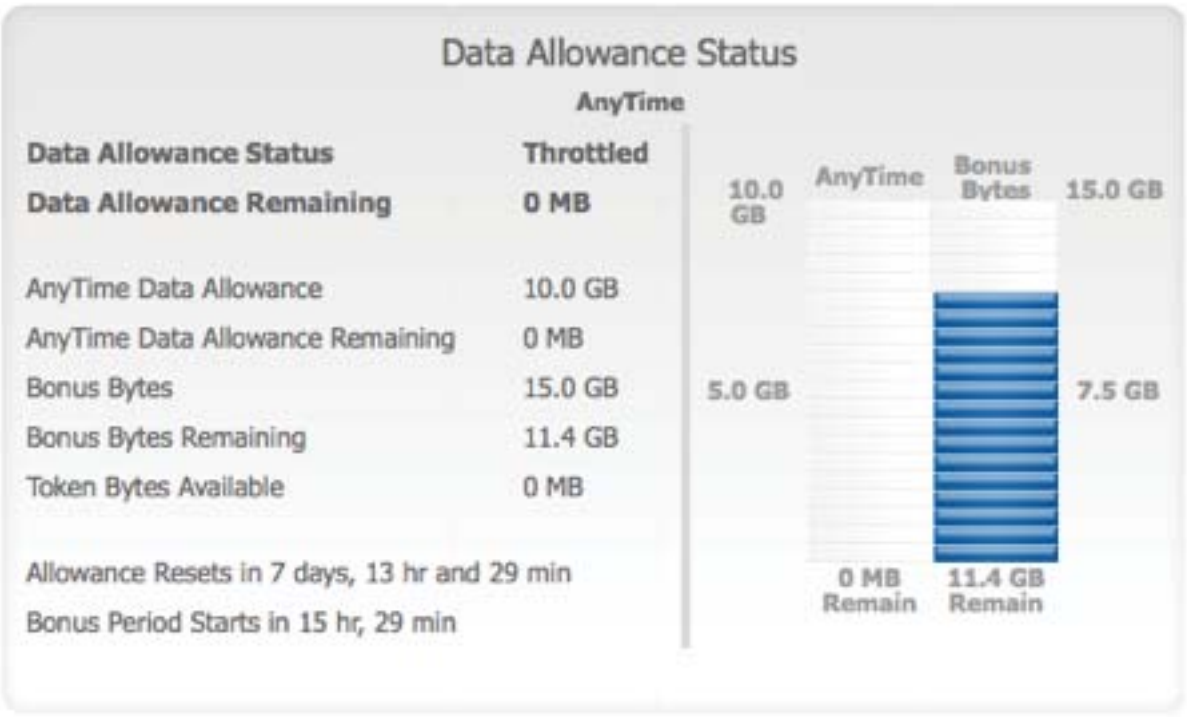
> Part of the problem here is misleading use of the word "faster".
>
> Would you say that a Boeing 747 is three times "faster" than a Boeing 737? Of course not. They both cruise at around 500 miles per hour. The difference is that the 747 carries 500 passengers where as the 737 only carries 150. The Boeing 747 is three times bigger than the Boeing 737, not faster.
>
> Now, if you wanted to go from New York to London, the Boeing 747 is not going to get you there three times faster. It will take just as long as the 737.
>
> In fact, if you were really in a hurry to get to London quickly, you'd take Concorde, which cruises around 1350 miles per hour. It only seats 100 passengers though, so it's actually the smallest of the three. Size and speed are not the same thing.
>
> On the other hand, If you had to transport 1500 people and you only had one aeroplane to do it, the 747 could do it in three trips where the 737 would take ten, so you might say the Boeing 747 can transport large numbers of people three times faster than a Boeing 737, but you would never say that a Boeing 747 is three times faster than a Boeing 737.
>
> That's the problem with communications devices today. Manufacturers say "speed" when they mean "capacity". The other problem is that as far as the end-user is

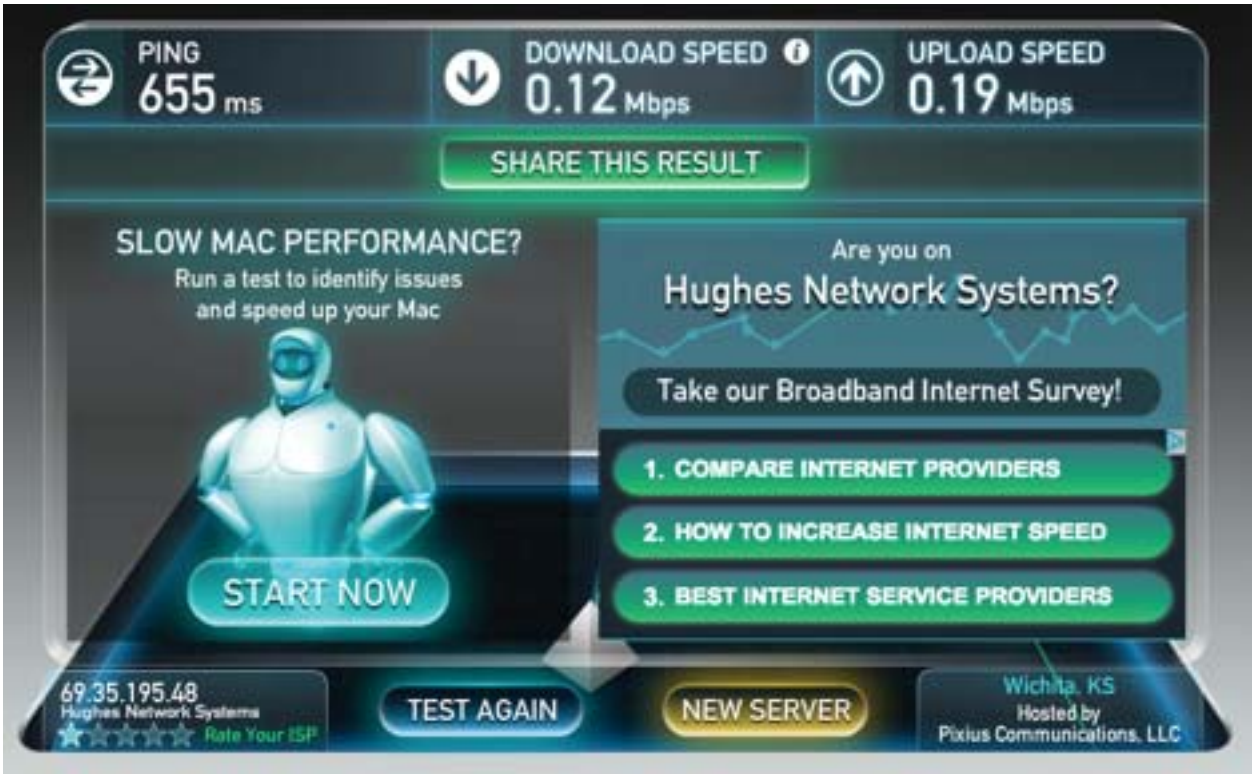
> concerned, the thing they want to do is transfer large files quicker. It may seem to make sense that a high-capacity slow link might be the best thing for the job. What the end-user doesn't see is that in order to manage that file transfer, their computer is sending dozens of little control messages back and forth. The thing that makes computer communication different from television is interactivity, and interactivity depends on all those little back-and-forth messages.
>
> The phrase "high-capacity slow link" that I used above probably looked very odd to you. Even to me it looks odd. We've been used to wrong thinking for so long that correct thinking looks odd now. How can a high-capacity link be a slow link? High-capacity means fast, right? It's odd how that's not true in other areas. If someone talks about a "high-capacity" oil tanker, do you immediately assume it's a very fast ship? I doubt it. If someone talks about a "large-capacity" truck, do you immediately assume it's faster than a small sports car?
>
> We have to start making that distinction again in communications. When someone tells us that a modem has a speed of 28.8 kbit/sec we have to remember that 28.8 kbit/sec is its capacity, not its speed. Speed is a measure of distance divided by time, and 'bits' is not a measure of distance.
>
> I don't know how communications came to be this way. Everyone knows that when you buy a hard disk you should check what its seek time is. The maximum transfer rate is something you might also be concerned with, but the seek time is definitely more important. Why does no one think to ask what a modem's 'seek time' is? The latency is exactly the same thing. It's the minimum time between asking for a piece of data and getting it, just like the seek time of a disk, and it's just as important.

I hope that his writing has illuminated this issue more.

> 15. We seek comment on whether a download speed of 10 Mbps would adequately reflect Congress's goal of evaluating advanced telecommunications capability.37 Does 10 Mbps satisfy current demand, especially during peak time? Even assuming that it does, should the benchmark be higher than the minimum necessary to meet existing demand, i.e., should the benchmark be set to accommodate some level of anticipated future demand, particularly if the Commission does not intend to adjust the benchmark annually? Some forecasts of broadband household needs suggest a higher download speed may be necessary.38 For example, would a significantly higher download speed, such as 15 or 25 Mbps, more accurately fulfill Congress's intent? How should the Commission forecast future household broadband uses to justify such a benchmark?

No! 10 Mbps is far from a guarantee to satisfy demand. The reason for this is that my satellite connection is rated at 10 Mbps down and 1 Mbps up. Every month it suddenly becomes almost unusably slow. The reason for this is that we hit the maximum data allotment of 10 GB per month. On the next page is the control panel status after exceeding our allotment and below that a speedtest.net result showing us below any usable level of speed. Data allotments must be taken into account for FCC benchmarks.




16. We seek comment on whether a 1 Mbps upload speed will suffice to meet the requirements set forth in section 706. The FCC 2014 Household Bandwidth Scenarios suggests that a service capable of 1 Mbps upload speed may not accommodate all household types.39 A “Moderate-Use Household,” for example, may be able to stream a movie, engage in online education, surf the web, and have a mobile device syncing to its email account all at the same time. A “High-Use Household” could have difficulty

> simultaneously streaming a movie, making a video call, using cloud storage, and have a mobile device syncing to its email account. Even if a consumer is primarily using its broadband for intensive download applications, such as streaming a movie, a consumer's viewing experience could be affected if the consumer does not have sufficient upload speeds.40 For purposes of the next report, should the Commission retain or increase the 1 Mbps benchmark? If the Commission continues to rely on 1 Mbps upload, we seek comment on whether we should continue to rely on 768 kbps as a proxy for 1 Mbps upload speed.41

Again: No! We cannot sufficiently make video calls or use cloud storage. When throttled (as now, having exceeded the allotment) even a short YouTube will not download. The benchmark should be increased. Any benchmark less than an increase is lipstick on a pig to mask sub par connections.

> 18. Setting a Speed Benchmark Based on Adoption Rates. We seek comment on whether the Commission should consider the rates at which consumers are adopting particular speeds when setting a speed benchmark. We seek comment on whether a higher benchmark is appropriate when the Fourth Measuring Broadband America Report indicates that consumers continue to migrate to higher broadband speeds.47 In setting a speed benchmark, should we consider the speeds available in urban areas, as compared to the speeds available in other areas, and if so, how should we take any disparities into account?48 How should we consider that one report indicates that the average connection speeds in nine countries are higher than the United States' average speed or that the average connection speed in the United States is almost three times the global average when setting a speed benchmark in the next report?49

I believe that the answer to this is to not consider the rate of adoption. The reason for this is that the goal is to further high-speed access, not lower the benchmark because it is not entirely being used.

> 23. In particular, we seek comment on whether the Commission should adopt a forward-looking benchmark to ensure that we can accommodate the nation's more advanced broadband needs as they develop. Is a forward-looking benchmark reasonable under section 706(b)? If we adopt a forward- looking benchmark, how should we determine whether broadband "is being deployed" in a reasonable and timely manner? For example, should we adopt a forward-looking benchmark of 25 Mbps/6 Mbps in addition to a 10 Mbps/1 Mbps speed benchmark? The statute directs us to inquire "in particular" about broadband availability in schools and classrooms.53 Should the Commission establish a speed benchmark for schools? Should we establish a speed benchmark for libraries? If so, what would be an appropriate benchmark or benchmarks? If we were to establish a forward-looking benchmark, how should we use it as an assessment tool under the statute? For example, would we evaluate whether at least some portion (e.g. 10 percent) of households have access to that forward-looking benchmark, in addition to assessing the availability of the broadband benchmark set in the next report? We note that the 2010 National Broadband Plan set a goal that 100 million U.S. homes should have affordable access to actual speeds of at least 100 Mbps/50 Mbps by 2020, and as an interim milestone, by 2015, 100 million U.S. homes should have affordable access to actual speeds of 50 Mbps/20 Mbps.54 Should we adopt these goals as benchmarks?

Yes a forward looking benchmark is reasonable. Municipal broadband networks, Google Fiber and other small Fiber to the home ISPs are leading the charge in forward looking connections. We can look to them for reasonable and timely manner of deployments.

> 25. The Commission seeks comment, as it has in the past, on whether to include latency as part of the benchmark for assessing broadband deployment under section 706(b).56 Latency is a measure of the time it takes for a packet of data to travel from one point to another in a network and often is measured by round-trip time in ms. For example, real-time VoIP services can be supported with speed rates as low as 100 kbps, but require low latency for users to converse normally.57 High-quality one-way video, such as Video on Demand, by contrast, can be delivered satisfactorily with somewhat higher latencies, but requires higher bandwidth.58 In the Connect America Fund Phase II Service Obligations Order, the Bureau implemented the Commission's decision to require latency adequate to accommodate real time applications for recipients of Connect America funding, concluding that latency should be measured between the customer premises to the Internet exchange point during peak periods and specifying a network round trip set latency requirement of 100 ms or less for price cap carriers accepting model-based support for Phase II-funded locations.59

Yes please! Latency is ever present in affecting our network connections. Again please read Cheshire: http://rescomp.stanford.edu/~cheshire/rants/Latency.html.

> 26. We seek comment on whether the Commission should adopt the same latency threshold for purposes of benchmarking advanced telecommunications capability and how the Commission would implement the threshold. While the Commission now has information on distribution of latencies for fixed and satellite services from the Fourth Measuring Broadband America Report,60 similar findings on the distribution of latency using mobile services will be released in an upcoming report and may not be available in time for the next 706 report.61 We seek comment on whether the Commission could rely on the latency findings in the Fourth Measuring Broadband America Report or future reports and what data are available to measure latency, particularly for mobile services. Do high latencies experienced by satellite services affect a consumer's ability to "originate and receive" VoIP or video calls or any other broadband service? We seek comment in particular on the increased latency62 experienced by satellite services during one-hop or double-hop calls, where both the caller and called party subscribe to satellite service, and are using, for example, VoIP or two-way video calls.63

Absolutely the threshold should be adopted. From my experience high latencies on my satellite service do affect our ability to originate and receive VoIP or video calls. I have no experience with increased latency when both caller and called parties are using satellite service.

> 27. The Commission has indicated that it might consider data usage allowance as a core characteristic that affects what consumers can do with their broadband service.64 Should we include usage in our section 706 assessment? If so, how? We seek comment on what data usage allowances most broadband providers offer today, and the impact of these usage allowances on setting a benchmark. For example, do consumers routinely exceed the usage allowance for the service to which they subscribe and if so, is additional capacity available for an additional fee? If so, how frequently do consumers avail themselves of that option?

Yes please. I for example routinely come close to or exceed the mobile data allotments. For the satellite service which we routinely exceed the data allotments we wait it out or use other connections at different locations which is burdensome.

> 29. How would the Commission implement a broadband usage threshold? Should the Commission focus on the amount of data that consumers actually use each month, instead of what broadband providers typically offer? What information, reports, or other sources are available to measure the amount of data consumers use monthly? In particular, are there any sources concerning usage that the Commission could use to assess which carriers meet or do not meet the usage threshold? Consumers are increasingly using free or pay-per-use Wi-Fi spots with their mobile or Internet-capable devices, which helps consumers stay below their usage limits.67 How should the Commission consider Wi-Fi access in its analysis of usage allowances? Should the Commission consider the fact that some consumers may take broadband service from both fixed and mobile providers, and that one or both of such services might provide unlimited usage? Is a certain amount of data capacity needed, per person or per household, on a monthly basis to meet the objectives of section 706?68 Can usage be analyzed without reference to the price and how should we consider the ability to purchase additional usage? If not, are there data available with which the Commission could analyze price adequately, or should the Commission collect such data as part of its Form 477 program?69

The focus should not be what consumers use or what providers offer, but rather a ratio of these. This yields the results of price based messaging conveyed in the free market: what are customers will to pay for vs. what will providers sell? Wi-Fi access should be considered.

> 30. We seek comment on whether other characteristics of a service in addition to those specifically discussed above might be relevant to a determination of whether it should be considered “advanced telecommunications capability” within the meaning of section 706.70 What technical and/or economic characteristics of a broadband service should be considered necessary in order for that service to constitute “advanced telecommunications capability?” Are there any other technical issues that we should consider when establishing a benchmark, such as jitter, or consistency (i.e., reliability) of service?71 How should the Commission interpret the term “advanced telecommunications capability” to ensure broadband providers continue to enable end-users the ability to originate and receive high quality voice, data, graphics, and video telecommunications?

Other characteristics should include non-discriminatory practices based on packet contents.

> 33. In previous reports, the Commission has relied on the SBI Data collected by NTIA for estimates of fixed residential broadband deployment.75 We intend to continue relying on SBI Data to provide fixed deployment estimates in the next report and welcome comment on how to improve our analysis.76 We also seek comment on how we can improve upon our identification of unserved areas and our demographic analysis.77 Because much of the SBI Data are publicly available, we encourage commenters to conduct and submit their own analyses of the SBI Data and estimates of broadband

deployment. Are there ways to refine the accuracy of the SBI Data?78 We seek comment on whether SBI Data overstates or understates fixed broadband deployment.

SBI Data seems to have their head in the sand. Time Warner Cable and Verizon consistently list my home, neighborhood and rural area of Rome as having wireline cable and internet services. The only services offered to us by them are telephone and dial-up. This is an egregious overstatement and I am deeply offended by such practices.

35. We seek comment on how to incorporate satellite services into our report. In the 2012 Eighth Broadband Progress Report, the Commission explained the reasons why it did not include satellite services as part of its section 706 finding.85 Are those concerns valid today? Pursuant to the new rules adopted in the Modernizing Form 477 Order, satellite providers must submit deployment data to the Commission, which will result in more reliable satellite deployment estimates in the future.86 Are there additional data that the Commission should consider when determining the extent of satellite broadband deployment in the United States? Commenters also should address any additional considerations the Commission should take into account in benchmarking satellite broadband, including availability to consumers who lack a clear view of the southern sky. 87

Availability to consumers who lack a clear view of the southern sky is a critical issue. Satellite is touted as a competing alternative to wireline services but it is not for urban areas. In addition low-income households will likely have a difficult or too costly experience installing a satellite on rented property.

39. The Commission has interpreted “all Americans” as used in section 706 as having its ordinary meaning, and thus as establishing a goal of universal broadband deployment. 92 We seek comment on this interpretation. In prior reports, the Commission has interpreted the phrase “is being deployed” as referring to “existing deployment and current actions that will meaningfully affect broadband deployment in the near future . . . [but not] general plans or goals to deploy broadband, particularly long-range plans or goals that are uncertain to be realized.”93 As part of the assessment required by section 706, the Commission must also include information comparing the extent of broadband service capability in a total of 75 communities in at least 25 countries abroad.94 The Commission has found that broadband deployment is more likely to be reasonable and timely if communities in the United States compare favorably to foreign communities on broadband service capability metrics and is less likely to be reasonable and timely if U.S. communities compare unfavorably.95 We seek comment on whether the Commission’s interpretations of “all Americans,” “is being deployed,” and “reasonable and timely” remain appropriate. We seek comment on what factors the Commission should consider in determining whether broadband “is being deployed to all Americans in a reasonable and timely fashion.”96 What is reasonable and timely deployment? Should deployment be understood as measuring the degree of progress toward availability of advanced telecommunications capability to all Americans?

Yes deployment should be understood as availability to all Americans.

41. We also note the deployment trends in urban and rural areas over the last three years. For example, the availability of broadband at 10 Mbps/1 Mbps has gone from 95

> to 98 percent of Americans living in urban areas, while the availability of the same service in rural areas has gone from 60 to 67 percent of Americans living in rural areas. 99 Similarly, the availability of broadband at 25 Mbps/10 Mbps has gone from 43 to 64 percent of Americans living in urban areas, while the availability of the same service has gone from 10 to 21 percent of Americans living in rural areas. How should the disparity between rural and urban deployment and the trend in such disparities over time inform our inquiry? Should we base our conclusion about whether advanced telecommunications capability is being deployed to all Americans in a reasonable and timely fashion on whether rural Americans have access to broadband that is "reasonably comparable" to that available in urban areas?100 For example, if 90 percent of urban residents have access to broadband with particular characteristics, should the fact that a similar service is not available to at least half of rural residents weigh against a determination that deployment to all Americans is reasonable and timely?

Yes, yes, yes. All Americans means All Americans, rural or urban. I do not intend to allow rural citizens to continue being ignored.

> 43. We seek comment on the extent that broadband providers of all types are investing in their networks to deploy broadband. What are providers doing to upgrade their networks, and where are they making those investments? How much are providers investing, and what are the sources of those funds? Are broadband providers deploying advanced telecommunications capability to their customers, and if so, how quickly? Are non-traditional broadband providers entering the market, and if so, where?

Non-traditional providers include municipal broadband networks, Google Fiber and smaller fiber ISPs. These are the only ones who are forward looking and investing in their networks.

> 47. A 2010 Commission staff paper found 78 percent of those that responded to a 2009 survey were already Internet users and 65 percent were broadband users and that 39 percent of broadband users expressed security concerns, while non-adopters were almost 50 percent more likely than broadband users to raise concerns about security of personal information online. The staff paper also deduced that "[t]his is one factor linked to their lower likelihood of adoption" and there was "significant positive correlation between high levels of worries about personal privacy and non-adoption" of broadband. 108 We seek comment on the staff paper, including the use of a consumer survey as a basis for such findings and whether the work can be validated.

Yes the is absolutely valid. Just because they do not have connections does not make these people dumb. They are some of the wisest with regard to security.

> What is the correlation between such worries and non-adoption today? Are there other more recent studies or surveys that may complement or contradict the staff paper's findings? How does the data from 2009 compare to the Commission's recent status reports on Internet Access Services? Are there differences in levels of concern in accessing the Internet in general, as compared to accessing it via broadband? If so, what would justify these differences? What is the relevance of privacy and/or security to our section 706(b) determination? Do concerns over personal privacy or security deter consumers from adopting broadband?

Look no further than the Snowden revelations and the various news reports of other countries not wanting to do business with us. These are very real concerns and they are extremely valid. We need a secure and private web that has all of our rights, for example protection from unwarranted searches and seizures.

> If so, how are broadband providers addressing these concerns? What other factors or concerns about privacy and security may account for broadband adoption by consumers? Do these other factors have a greater correlation to the lower likelihood of adoption and deployment? What do consumers know about providers' current privacy or security practices and how much of their understanding is accurate?

Broadband providers are not doing anything to address these concerns. They only say "trust us" and then go behind our backs to ink deals with state insecurity agencies. Consumers do not know enough. Some of those without service are the most acutely aware of the risks of having service.

> What information do broadband providers voluntarily share with consumers about their privacy and security practices, including regarding their security risk management programs? If privacy and/or security statements are offered voluntarily, are there any obligations, contractual or otherwise, for broadband providers to comply with such commitments? Are there other obligations regarding privacy and/or security which broadband providers may be subject? If so, what are these, and what relevance, if any, would they have to our determination? What is the relationship, if any, between increased consumer awareness of online privacy and security practices and adoption of broadband? How, if at all, do the answers to these questions differ between urban and rural consumers, or between customers of large or small companies?

Broadband providers will sell packages (including home security) meant to offer peace of mind but no real security. Privacy and security statements must be required under the law including immediate acknowledgement and resolution of security intrusions. Consumer awareness of online privacy and security will boost broadband adoption, not harm it. The lack of security and privacy will stymy broadband adoption.

> 49. Under section 706, if the Commission finds that broadband is not being deployed to all Americans in a reasonable and timely fashion, then the Commission must "take immediate action to accelerate deployment of such capability by removing barriers to infrastructure investment and by promoting competition in the telecommunications market."113 The Commission has previously identified numerous barriers to infrastructure investment. We seek comment on what immediate actions we could take to accelerate deployment by utilizing "price cap regulation, regulatory forbearance, measures that promote competition in the local telecommunications market, or other regulating methods that remove barriers to infrastructure investment."114

Removing every state barrier to municipal broadband networks will greatly spur adoption.

> 50. We also seek comment on the relationship between adoption and deployment of broadband service.115 We seek comment on the following: (1) costs and delays in building out networks; (2) broadband service quality; (3) lack of affordable broadband Internet access services; (4) lack of trust in broadband and Internet content and

services, including concerns about inadequate privacy protections; and (5) lack of access to devices and other broadband-capable equipment.116 To what extent do these factors affect broadband deployment and availability? Are there other barriers we should consider in the next report? How can we reduce the impact caused by these barriers? What actions should the Commission take to accelerate broadband deployment and availability? Should those actions be different in rural and non-rural areas? Tribal lands face unique challenges and significant obstacles to the deployment of broadband infrastructure.117 We seek comment on how the Commission can better accelerate broadband deployment on Tribal lands.118 What additional concrete steps should the Commission take to assess and improve the state of broadband on Tribal lands?

Local computer-use and benefits programs will aid adoption, especially in rural areas. More aggressive actions should be taken in rural areas particularly with regard to price. Deployments do not cost more for rural areas. They simply do not make the return on investment as fast as urban areas.

Connecting tribal lands is a challenge. One opportunity is to route new and additional internet backbone near tribal lands which would permit more direct connections and provide far better access.

Thank you for your diligence,
Joe