

**Before the  
Federal Communications Commission  
Washington, D.C. 20554**

In the Matter of	)	
	)	
Comment Sought on Residential Fixed	)	CG Docket No. 09-158
Broadband Services Testing and	)	CC Docket No. 98-170
Measurement Solution	)	WC Docket No. 04-36
	)	
	)	
	)	

**THE UNITED STATES TELECOM ASSOCIATION - Comments—Consumer  
Information and Disclosure PN, DA 10-670**

**Introduction**

USTelecom appreciates the Commission’s decision to seek public comment on the methodology proposed by SamKnows, Limited (SamKnows), the vendor that the Commission has selected to begin the process of gathering a representative and statistically valid data sample to measure actual performance of fixed broadband services. As USTelecom has previously stated,<sup>1</sup> our members strongly support efforts to provide consumers with useful data that will help them to understand what to expect from their online experience and how best to judge what broadband Internet access service will best meet their individual needs.

As the Commission knows, this is an enormously complicated task that must be undertaken with input from industry, consumers and academics. It will involve an ongoing dialogue among providers of broadband Internet access services, public interest groups, academics, other affected stakeholders, and the Commission. USTelecom believes that these

---

<sup>1</sup> USTelecom Comments in re *Comment Sought on Broadband Measurement and Consumer Transparency of Fixed Residential and Small Business Services in the United States – NBP Public Notice #24*, GN Docket No. 09-51, Public Notice, 24 FCC Rcd 14120 (2009), filed Dec. 14, 2009, at 2-3; Joint Letter from USTelecom and TIA in *Consumer Information and Disclosure*, CG Docket No. 09158, CC Docket No. 98-170, WC Docket No. 04-36, Notice of Inquiry, 24 FCC Rcd 11380 (2009), filed March 29, 2010.

comments provide a first step in a productive dialogue. USTelecom and its member companies look forward to continuing the dialogue with SamKnows to refine the proposed methodology.

USTelecom agrees with NCTA that SamKnows' initial testing effort "should be viewed as a 'proof of concept' about broadband measurement."<sup>2</sup> It will also provide lessons on methodological issues that can be used as the Commission works with all stakeholders to refine and develop a final measurement methodology that can then be scaled to provide statistically meaningful data.

As a preliminary matter, USTelecom notes that the high-level summary the Commission has set out for comment provides a good first step in describing SamKnows' proposed methodology, but leaves many technical details unanswered. The devil, however, is in the details. Because wireline broadband providers use different broadband technology platforms, have different network architectures, employ various content delivery methods such as caching, content distribution networks, and peering, and penetrate into the in-home network to varying degrees, it is important that SamKnows provides further details as to how it will ensure that its testing architecture, methodology, and data-reporting are fair and comparable across broadband providers, networks, and technologies. There are many technical choices that must be made and many trade-offs about how and what to measure. It is not yet clear what choices SamKnows intends to make. For example, is it throughput or link "speed" that SamKnows intends to measure and which is most useful to the consumer? What protocols will be covered?

Moreover, it is important that an independent statistician review the process that SamKnows uses -- from the creation of the sample pool, to the collection and analysis of the data sets -- to ensure that the sample is representative and provides accurate data to the Commission.

---

<sup>2</sup> Letter from Steve Morris, National Cable and Telecommunications Association to Marlene H. Dortch, Secretary, Federal Communications Commission (April 30, 2010) at 2.

From there, the Commission should engage in a comment process to determine what types of data would be most useful for consumers and how they should be presented.

Based on the summary of the proposed testing methodology, we outline below several particular issues of concern with respect to panel selection, measurement methodology, and reporting of results.

**I. SamKnows' Proposal for the Development and Recruitment of a Panel of Respondents Should Be Revised To Ensure that the Panelists Represent an Unbiased Sample of Broadband Users that Mirrors the General Population of Internet Users**

SamKnows states that the panel “should be representative of the ‘broadband population’ in terms of technology, geography and service level.” However, SamKnows does not include as a criterion that the panel should also include users with different profiles so that there is not homogeneity with respect to type and level of use, technical knowledge, etc. SamKnows’ proposal to “solicit volunteers through a media campaign using social and traditional media, such as consumer and technology press, alongside Twitter and independent bloggers and opinion formers” is not likely to recruit an “average” broadband user, but a more technically savvy, plugged-in user group that is unrepresentative of the general population. Rather than using these recruitment tools, SamKnows would be better advised to use the geographically and demographically diverse panels that have already been developed by sources including opinion research organizations, such as Nielsen or National Family Opinion or other entities that have reported generally on broadband use in the United States, such as the Pew Internet and American Life Project. It is important that the panel represent a geographically diverse set of users because distances between the subjects’ homes and the test servers can be an important variable that should not be distorted by a geographical skewing in the panel. It is important that the panelists be demographically diverse as demographics may affect usage patterns and familiarity with the Internet.

The user's level of satisfaction with his or her service should also be taken into account when selecting the panel. It would skew the results if users who are frustrated by atypical service quality problems are overrepresented on the panel. There are surveys conducted by such organizations as J.D. Power and Associates, that provide a profile of overall consumer satisfaction levels and this factor should, to the extent possible, be reflected in the panel.

Another area of concern is that SamKnows appears to rely on a high degree of self-reporting by panelists. First, SamKnows is apparently going to rely on panelists' self-reporting to determine the service tier to which the panelist subscribes. This approach can result in gross inaccuracies because consumers are not always aware of the actual level of service to which they are currently subscribed. Second, SamKnows states that it will survey the panelists about how they are using their Internet service. SamKnows does not explain who in a household of Internet users will be reporting on the usage of that household, which may contain both parents with different usage patterns and children of different ages who will have dissimilar patterns of use. There is good cause to be worried about the accuracy of such reporting: it has been demonstrated that users who are reporting on television viewing habits are quite unreliable, even though, compared to Internet usage, assessing telephone usage requires a relatively straightforward type of usage report.

The suggestions above are merely preliminary adjustments to be made in developing a statistically valid sample group. It is imperative that the panel selection process and the resulting panel be reviewed by an independent statistician with experience in this field. This safeguard will ensure that, from the beginning, SamKnows has a representative pool that is capable of generating a statistically valid sample.

## **II. Data Collection and Tests Methodology Should be Explained at a More Granular Level and Should Provide Comparable Measurements Across Technologies**

SamKnows describes the tests that its white box can perform, but does not provide any technical specifications describing how the white box functions and interfaces with different network configurations. Also of concern is the overall reliability of the SamKnows white box and whether it has the potential to negatively impact service. Since it connects between the customer's home network and the modem, a failure in the white box potentially could disrupt service. Does the white box have automatic cut through that will keep the customer connected in case of a white box failure? If a white box failure generates a customer trouble report resulting in the service provider dispatching a technician, will SamKnows compensate the service provider? In addition, will the white box automatically cease its hourly test when the customer is actively using the Internet?

Further, SamKnows lists the types of data that it will collect as follows:

- Data speed (being a combination of the Download and Upload Speed)
- Data usage
- Download speed
- Upload speed
- Latency
- Jitter
- Availability
- Packet loss
- DNS resolution time (measured in milliseconds)
- DNS failures (measured as a percent of total DNS requests)
- Web page load time (measured in milliseconds)

Some of these terms are relatively straightforward, but others are not. For example, "speed" means a number of things and can be measured a number of ways. SamKnows does not explain what it is measuring or why it believes that its choice will provide the most useful data for consumers. Further, SamKnows states that it is going to provide "a combination of Download and Upload Speeds" as a measurement of "data speed" without explaining why it believes that this information will be useful,

rather than confusing to consumers. Before USTelecom can provide a meaningful set of comments on this aspect of the proposal, more information describing technical parameters is necessary.

SamKnows has said that its test methodology is “scalable” and will produce comparable data for different types of providers. But SamKnows does not explain how it will ensure that its testing architecture, methodology, and data-reporting are fair and comparable across broadband providers, networks, and technologies.

### **III. Data Analysis and Presentation: Test Data Should Be Viewed as a “Proof of Concept” Rather Than a Statistically Valid Data Set for Consumer Use**

As USTelecom stated in the introduction to these comments, SamKnows’ proposed testing is most properly viewed as a “proof of concept.” As such, it would be misleading to present data derived from the initial testing to consumers as an accurate and reliable measurement of what can “typically” be expected of various providers’ broadband Internet access service. The statistical sample that SamKnows proposes may not be large enough to provide statistically valid data on the various tiers of service offered by the 15-20 service providers that will be tested. Given that there is no common agreement among providers as to a definition of “speed” as it is currently advertised, USTelecom does not know how SamKnows intends to make an apples-to-apples comparison of speed in these circumstances. Moreover, as USTelecom noted above, customers may inadvertently misreport their speed tier and the proposed independent verification of the consumer’s report through one speed test is highly unreliable and cannot correct for customer error.

SamKnows has not explained what speed measure it intends to report for consumers. As we learned in high school, the median, mean, and mode provide very different information (although many of us have forgotten the difference). What is most useful to a consumer? It is likely that the consumer would like to know what speed he or she can expect at least 50 per cent

of the time. The consumer may also prefer to know that the speed will exceed 80 or 90 per cent of the time. These important issues need to be carefully considered before any measurements are reported.

Moreover, SamKnows says that data will be shared with the provider before it is finalized. It is very important that this review be done in such a way that the provider can work with SamKnows to correct any outliers or anomalies early enough in the process for it to be meaningful. After that provider's review, an independent statistician should review the methodology and results and that critique should be incorporated into the final data sets to be provided to the Commission.

SamKnows' testing will be useful as a "proof of concept." With this in mind, the Commission should proceed with caution before making any public use of the data. Consumers do and should be able to trust government reported data. It is important that the Commission consult with the stakeholder community before publication of data. Any data reported should be presented in a format that is fair, simple and easy for the consumer to understand. It is also important that the Commission describe clearly what the data can and cannot tell the consumer. Consumers must be aware that any data reported is only an approximation and that they can expect their actual Internet experience to vary due to a large number of factors.

### **Conclusion**

USTelecom thanks the Commission for the opportunity to comment on the methodology that SamKnows proposes. USTelecom and its members look forward to working with the Commission and with SamKnows to develop the correct methodology. We agree with the Commission that accurate information enhances competition. USTelecom is committed to

working with all stakeholders to ensure that consumers have transparent, accurate, and comparable information.

Respectfully submitted,

UNITED STATES TELECOM ASSOCIATION

A handwritten signature in black ink, appearing to read "Jonathan Banks". The signature is fluid and cursive, with a large initial "J" and a long, sweeping underline.

By: \_\_\_\_\_

Jonathan Banks  
Genie Barton  
Its Attorneys

607 14<sup>th</sup> Street, NW, Suite 400  
Washington, D.C. 20005  
202-326-7300

May 4, 2010