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FEDERAL COMMUNICATIONS COMMISSION
Washington, DC 20554

In the Matter of	)	
	)	
Improving International Comparisons	)	IB Docket No. 10-171
Required by the Broadband Data	)	
Improvement Act	)	

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TABLE OF CONTENTS

Page

INTRODUCTION AND SUMMARY 1

I. THE DATA COLLECTED IN THE IBDR ARE INACCURATE AND INCOMPLETE IN SEVERAL WAYS 2

II. THE IBDR DATA SET IS NOT SUFFICIENTLY RELIABLE OR COMPREHENSIVE TO BE USED AS THE BASIS FOR DECISIONS ABOUT BROADBAND POLICY IN THE UNITED STATES 13

CONCLUSION.....15

INTRODUCTION AND SUMMARY

AT&T believes that the Commission can learn valuable lessons from the broadband experiences of other countries, and fully supports efforts to collect comprehensive and reliable data regarding broadband service offerings around the world. The first International Broadband Data Report ("IBDR") is an important step in that process.[1]

Nonetheless, the task given to the Commission by the Broadband Data Improvement Act – comparing broadband services in at least 25 other countries along a variety of metrics (speeds, price, technology, demographics, regulatory models, etc.) – presents many formidable challenges. There are countless different factors that affect the price, speed, and availability of broadband service, many of which are not easily quantified. This inherent difficulty of measuring broadband performance is only compounded by the fact that the quality and comprehensiveness of data collection — as well as the ways in which that data is reported — vary widely across countries (or communities within a country), making it extremely difficult to perform reliable, apples-to-apples comparisons of broadband service offerings in different countries.

Given these significant challenges it is not surprising that, despite diligent efforts by Commission staff to collect the requisite data, the inaugural IBDR data set is flawed, skewed, or incomplete in several key ways, many of which may tend to overstate the qualities of foreign broadband service offerings vis-à-vis service offerings in the United States. Among other issues, the IBDR: (1) does not appear to have used a well-defined or reliable methodology for choosing the communities and service offerings that were included in the sample; (2) collects data based

[1] First Report, *International Comparison Requirements Pursuant to the Broadband Data Improvement Act, International Broadband Data Report*, GN Docket No. 09-47, DA 10-1348 (Int'l Bur., Aug. 27, 2010).

only on *advertised* broadband speeds, rather than on *actual* speeds, the latter being what the Commission has chosen as a benchmark for U.S. policymaking;[2] (3) includes data on monthly usage limits that are inaccurate or incomplete; (4) fails to examine whether the sampled services were available throughout an entire community or were available only in certain areas; (5) fails to collect sufficient data regarding other services, such as voice and video, that are "bundled" with broadband offerings; (6) fails to collect adequate data about promotional prices or discounts that were applied to the sampled service offerings; (7) uses purchasing power parity ("PPP") to convert local currencies into U.S. dollars, even though PPP is not well suited for this purpose; (8) fails to explain why no wireless broadband offers were included in the sample; (9) provides inaccurate information about the type of provider offering each service; (10) fails to provide sufficient information about government policies in each country, particularly about taxes or subsidies that apply to broadband service offerings; (11) fails to provide information about the average age of residents in each community, and provides incomplete data about education levels; and (12) contains data that are already more than a year old.

In light of these specific shortcomings with the IBDR data set — as well as the more general problems inherent in assessing the factors driving broadband performance — the current IBDR data cannot reasonably be used as the basis for broadband policymaking in the United States.

I. THE DATA COLLECTED IN THE IBDR ARE INACCURATE AND INCOMPLETE IN SEVERAL WAYS

As the IBDR recognizes, much of the data collected in the report are inaccurate or incomplete in several key ways, which undermines the usefulness of that data in performing

[2] As discussed below, in some countries advertised speeds tend to be significantly higher than actual speeds.

objective comparisons of broadband service offerings in different countries. These problems are likely to misstate the qualities of foreign broadband service vis-à-vis broadband service in the United States. The problems with the data set include:

Choice of Foreign "Communities" and Offers: The IBDR does not appear to use a well-defined or consistent methodology for choosing the "communities" or offers to be included in the data set. In selecting communities and offers, the IBDR states that it focused on two criteria: inclusiveness and data availability. With respect to "inclusiveness," the IBDR set a goal of "embracing communities from all parts of the world," *see* IBDR ¶ 18, but it provided few details about the methodology it used to select such communities for inclusion. In addition, the number of service offerings polled in different countries varies widely. For example, 44 offers are polled from Australia, 50 from Bulgaria, 40 from Latvia and 57 from Lithuania; but only 11 from France, 10 from Italy, and none from New Zealand, Switzerland, India or Russia, or any country in Africa or the Americas. Furthermore, within the selected communities, offers from many broadband providers with a significant customer base are missing from the data set.[3] Because the report fails to explain why it chose some communities over others, and why it chose some provider offers over others, it is impossible to determine whether the IBDR's data set is a statistically representative sample of generally available services.

Indeed, the IBDR's other criterion for selecting communities — data availability, *see* IBDR ¶ 18 — suggests that the sample is likely to be statistically unrepresentative. As a matter of convenience, it is obviously preferable to focus on communities with readily available data. But there is likely a strong correlation between data availability and other factors driving broadband deployment, such as income and education levels, and the quality of governance in

[3] For example, no offers from Numericable are included for France, none from Kabel Deutschland for Germany, and none from Lyse for Norway.

the area. Thus, by focusing on communities for which comprehensive data are available, the IBDR's sample may well be biased toward over-including areas with the *best* broadband service, thus overstating the average quality of service in foreign countries.

Actual vs. Advertised Speed: As the BDIA recognizes, in any comparison of broadband service offerings in different countries, the speed of the service is an important consideration. In measuring broadband speed, the IBDR observes that the Commission has emphasized the importance of focusing on the *actual* upload and download speeds that are offered to broadband customers.[4] The IBDR, however, collected information about the speed of broadband service offerings in foreign countries based on "advertised speeds." *IBDR* ¶ 8 n.24. Advertised speeds are generally listed on an "up to" basis, which means that they describe only "peak" or potential speeds, rather than the speeds that are consistently available to customers.

The IBDR acknowledges that "[a]ctual performance experienced by consumers can vary from the advertised speeds." *Id.* As AT&T has explained at length, reliance on advertised speeds instead of actual speeds significantly overstates broadband performance in a large number of foreign countries relative to the United States. For example, when advertised speeds were compared to actual speeds, certain providers in South Korea were found to have overstated their advertised speeds by more than 400 percent, and certain providers in Japan had overstated broadband speed by a factor of ten.[5] To the extent the Commission relies on actual speeds in

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[4] IBDR ¶ 8. *See Development of Nationwide Broadband Data*, 23 FCC Rcd 9691 ¶ 22 (2008) (noting that "considerable potential value exists in knowing actual broadband connection speeds that consumers experience").

[5] *See* AT&T Comments, GN Docket No. 09-47, at 18-20 (Nov. 16, 2009) (AT&T Berkman Comments); *see also* Criteria for OECD Broadband Price Collections, http://www.oecd.org/sti/ict/broadband/prices (noting that advertised broadband speeds on operators' websites "likely do not correspond to typical throughput").

assessing broadband performance in the United States,[6] but advertised speeds in assessing foreign broadband service offerings, that analysis may significantly overstate the comparative virtues of the foreign services.

Even if actual broadband "speeds" in other countries were collected, this would still not be fully informative because service quality is also affected by other factors that are not included in the IBDR data set. For example, broadband speed can vary substantially depending on whether it is measured at peak or off-peak times of day. Moreover, the speeds experienced by an end-user customer may be affected by many factors beyond the broadband provider's control, such as the quality of internal wiring, the hardware and software being run by the customer, and the customer's distance from the provider's facilities. Any comprehensive and reliable comparison of broadband speeds across different communities must be robust enough to consider the effects of these factors.

Bandwidth Limits: While the IBDR does contain a column that purports to report the monthly bandwidth usage limit for each offer, it appears to be populated sparsely or inaccurately. For example, the data in this column incorrectly suggest that the only countries whose broadband offers contain usage caps are Australia, Portugal and the UK.[7] But a comparison of the IBDR's data with that reported in the OECD *Communications Outlook 2009* shows substantial discrepancies on this point.[8] Numerous service offerings that appear in both reports show no bandwidth caps in the IBDR, but are depicted with (often low) bandwidth caps in the OECD

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[6] In its own reports, the Commission sets thresholds for broadband availability based on *actual* upload and download speeds. *See* Sixth Broadband Deployment Report, *Inquiry Concerning the Deployment of Advanced Telecommunications Capability to All Americans*, GN Docket Nos. 09-51, 09-137, ¶ 5 (July 20, 2010).

[7] The report also references a single offer in Hong Kong that incorporates a 200 hour usage limit.

[8] *See* OECD, *Communications Outlook 2009*, at 302-09 (Table 7.14) (rev. Aug. 2009), *available at* http://browse.oecdbookshop.org/oecd/pdfs/browseit/9309031E.PDF

report. A spot examination of provider websites confirms that these service offerings are, in fact, subject to caps.[9] Without accurate data on usage limits for these various foreign offers, the usefulness of the IBDR data for comparison purposes is significantly undermined.

In addition, data use limits may take various forms beyond strict caps. Some service offerings may have a "soft cap" that allows overages for an extra fee. Other service offerings may allow continued usage, but only at reduced throughput speeds, and some usage limits may be qualitative rather than quantitative in nature. Without addressing the specific limits associated with each offer, valid comparisons among different offerings are extremely difficult to make.

Availability: The IBDR contains no information about whether the listed broadband service offerings are available throughout the entire stated "community," or are available only in certain areas. It is obviously much more difficult to provide fast and reasonably priced broadband service in rural areas than in densely populated urban areas. Further, the most advanced broadband services offered by providers (such as FTTx builds) often have a limited geographic scope within a community. This is especially true for such services offered by smaller or new providers. By failing to include information about the geographic scope of each service offering, the IBDR omits a variable that is critical to a reliable comparison of broadband service offerings in different countries.

Along similar lines, the IBDR data set contains no information about how many customers actually use each listed service. A service that is widely used throughout a community may be more relevant for comparison purposes than a niche service that is taken only

[9] For examples of service offerings in English, see: Eircom http://www.eircom.net/broadband/products/ ; Irish Broadband http://www.irishbroadband.ie/product_summaries.php?cid=3 ; Digiweb http://www.digiweb.ie/home/broadband/dsl/index.html.

by a small number of users or a specialized set of users, but the IBDR does not provide the data necessary to make these comparisons.

Pricing: There are several potential problems with the pricing data included in the IBDR:

First, broadband service is rarely purchased in isolation; many of the broadband service offerings in the IBDR data set were part of a "double-play" or "triple-play" bundle that also included voice, video, and/or wireless services. But it is unclear how the broadband prices listed in the IBDR account for the complexity of such bundling. Indeed, the authors of the IBDR noted that "we encountered numerous variations of bundled service offerings in different countries, making it more difficult to compare prices between communities and countries, or even between competing offerings of different providers within a single community." *IBDR* ¶ 13. One broadband-video bundle may include only basic free-to-air television service, while another may include premium movie channels and extensive video-on-demand content, yet both would simply be classified as "double-play" in the IBDR data set.[10] *See id.* Appendix C. Moreover, in addition to voice and video services, broadband providers may bundle internet access service with additional software or services such as e-mail, firewall software, virus protection, networking support, parental controls, online storage capacity, access to proprietary content, and many other features. The IBDR does not account for these additional services and features. In the absence of more detailed information about the types of services included in each bundle —

[10] The technical and financial conditions under which video programming is acquired by broadband operators for the video service offerings of their double- or triple-play packages can also vary significantly across countries. In some countries, there may be few regulations on which, if any, content an operator must provide and how much they must pay for the content, but in other countries, there may be very significant regulations (e.g., distant signal, must-carry, retransmission consent, PEG) that may limit an operator's flexibility in content choice and raise significantly the cost of acquiring and distributing video programming.

and the relative value of those services — the IBDR's data regarding broadband "prices" is not reliable.

Second, broadband prices are significantly impacted by discounts and promotions, but the IBDR fails to address these issues consistently across the communities in the sample. Several broadband service offerings have a "yes" in the "promotional price" column in Appendix C, but have no further information about the value or duration of the discount, both of which are critical pieces of information in computing the "true" price of the broadband service. For many other offerings, the "promotional price" column is blank, which suggests that it is unclear whether the listed price includes discounts or promotions. Other prices are listed as including "some discounts" or "free installation," but there is no information about the value of those promotions. The IBDR also noted that it was "not able to determine which offers are regularly available and which are significant departures from regularly available." *IBDR* ¶ 10 n. 29. Given the ubiquity of promotions and discounts in broadband service offerings, the IBDR's inability to obtain comprehensive and consistent data about these matters casts significant doubt on the reliability of the data set.

Third, the IBDR has "converted all prices in local currencies to U.S. dollars based on purchasing power parity (PPP)," which is a currency conversion ratio that compares the prices of baskets of goods and services in different countries. IBDR ¶ 9 & n.27. But PPP is of limited use in this context, and may systematically skew the comparisons between foreign countries and the United States. For countries that have more expensive price levels than the United States — such as Western Europe — PPP conversions will often make those countries appear to have low

prices for individual products when no such conclusion is warranted.[11] Indeed, conversions based on PPP give EU countries approximately a 21% to 28% discount compared to the United States (with even larger discounts for certain Nordic countries).[12] PPP is also unreliable for intertemporal comparisons, given that spending patterns in different countries inevitably change over time.[13] Finally, the PPP conversion factors used in the IBDR are based on *2007* prices,[14] which are significantly out of date, particularly given the severe worldwide economic dislocations that have occurred over the past three years.

Wireless Providers: Wireless broadband providers now offer speeds that equal or surpass many wireline broadband speeds, but the IBDR appears to contain no data about any wireless broadband service.[15] The IBDR does not explain why it included no wireless service offerings or how the lack of data about such offerings will affect the usefulness of the data set. More fundamentally, given the rapid increase in the availability and use of wireless broadband, such services must be included in any meaningful analysis of broadband. That is particularly true with respect to international comparisons because much of the broadband investment now taking place is centered on wireless technologies. Further, in many developing countries, broadband deployment will occur primarily over wireless networks and it would be useful for the Commission to include developing country comparisons in the IBDR. The U.S. is a leader in

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[11] *See* R. Ludema, *Nominal Prices, Real Prices, and Faux Prices: The Perils of Comparing Individual Prices at Purchasing Power Parity Exchange Rates*, available at http://ssrn.com/abstract=1575745, at 2 (Mar. 19, 2010).

[12] AT&T Berkman Comments at 23.

[13] *See* Ludema, *supra*, at 2.

[14] *See* IBDR, Appendix C, Purchasing Power Parity Conversion Factors.

[15] The IBDR incorrectly classifies certain offerings from BT and BskyB in the UK as being "wireless" with speeds up to 20 Mbps. According to the websites for these providers, the service offerings are actually wireline-based. See http://www.productsandservices.bt.com/consumerProducts/displayCategory.do?categoryId=CON-TOTAL-BB-R1; http://www.sky.com/shop/broadband-talk/broadband-options/.

3G, new 4G services, smartphones, and WiFi; thus, it is critical that foreign wireless broadband services be examined if accurate and useful comparisons are to be made to U.S. services.

Type of Provider: In the IBDR data set, each provider is classified as either an "incumbent" or an "entrant." For European companies, the source of this classification is a report prepared by a consultant for European Commission ("EC Report").[16] For a number of reasons, the EC Report does not provide a useful data set for the IBDR.

First, the definition of "Incumbent" versus "Entrant" used in the EC Report does not comport with the common understanding of those terms in the U.S. for broadband service operators. The EC Report defines Incumbents as "the organisations enjoying special and exclusive rights or de facto monopoly for provision of voice telephony services before liberalisation, regardless of the role played in the provision of access by means of technologies alternative to the PSTN."[17] Thus, it would appear that under this definition, only ILECs would be considered "Incumbents." In U.S. usage, broadband "incumbents" are typically considered to be both ILECs and cable companies. Indeed, because cable modem broadband service generally was introduced before residential xDSL service and enjoys a larger market share today, it would be odd to consider ILECs, but not cable companies, to be incumbents.

But in addition to using a narrow definition of "incumbent" versus "entrant," the EC Report also appears inaccurate in applying this distinction. In Finland, for example, the EC Report classifies Elisa and Sonera as incumbents, which is correct. But the EC Report is incorrect in classifying DNA and Finnet as entrants. These companies are amalgamations of

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[16] See footnote 26 in the IBDR. The referenced EC Report source for the IBDR's data can be found at: http://ec.europa.eu/information_society/eeurope/i2010/docs/benchmarking/broadband_access_costs_1st_half_2008.pdf .

[17] *Id*. at footnote 11.

regional ILECs that serve areas other than those served by Elisa and Sonera.[18] Under the EC Report's definitions, their correct classification should be as incumbents.

An examination of the classification by type and technology that the EC Report provides for U.S. and Canadian operators provides additional reason to doubt the reliability of this data source. For the U.S., the EC Report defines AT&T and Verizon as xDSL and/or FTTH incumbents (which is correct), and, following its unorthodox definitions, Charter, Comcast, Cox and Time Warner as entrants; but states incorrectly that both Charter and Cox use xDSL technology, not cable modem technology. And in Canada, Bell Canada is listed as an xDSL incumbent, but Telus (the monopoly ILEC in Alberta and British Columbia) is defined as an xDSL *entrant*. Shaw and Videotron are both defined as cable incumbents. While these two companies do in fact use cable technology, describing them as incumbents (while correct in U.S. parlance) directly contradicts the definitions the EC Report purports to use. Finally, Rogers is deemed a cable *entrant*, despite the fact that it has been offering cable service since the late 1960s.

But even if the type and technology classifications imported from the EC Report were correct (and they are not), using a binary classification oversimplifies the variety of different providers that can offer broadband service. Some "entrants" may be reputable and well-financed corporations that are looking to expand into new businesses. Others may be nascent companies with unsustainable business plans that hope initially to attract customers with "too good to be true" offers. If a particular broadband service offering is not financially or technically viable in the long run, inclusion of that offer in the IBDR may not offer useful or reliable comparisons.

[18] See http://www.lvm.fi/fileserver/finnish%20telecom%20policy.pdf .

Government Involvement: The extent of government involvement (such as regulation, taxation or subsidy) in telecommunications markets is highly relevant to any analysis of broadband service offerings in different countries. Obviously, there is substantial variation across countries in terms of such government involvement in broadband. In its discussion of government policy in Appendix E, the IBDR often refers to "broadband plans" in various countries, but — other than big-picture goals such as universal access and faster speeds — it is unclear exactly what those plans entail and whether (and how) they will actually be implemented.

Government investment, taxes, and subsidies have a significant impact on the price, speed, and availability of broadband service.[19] Many of the broadband service offerings listed in Appendix C may be heavily subsidized — or heavily taxed — pursuant to a universal service program; those taxes and subsidies are clearly relevant to a reliable comparison of different offerings, but the information necessary to make such comparisons is not included in the IBDR.[20]

Age and Education Data: The IBDR's demographic data in Appendix D contains no information about the average age of residents in each community. It is well-established, however, that populations with a lower average age tend to have higher rates of broadband

[19] Moreover, policies such as geographic rate averaging can have the same effect as taxes or subsidies in that they require some customers to pay higher rates in order to subsidize other users.

[20] For example, South Korea, Japan, and Sweden have invested massive sums of government money to promote broadband deployment and uptake. *See generally* AT&T Berkman Comments at 41-43. The IBDR briefly describes the broadband "strategies," "plans," and "roadmaps" in those countries, *see* IBDR Appendix E, at 21-23, 33-34, but provides no information that could be used to determine how those government policies *specifically* affect the price, speed, and availability of the broadband service offerings listed in Appendix C.

penetration.[21] Moreover, for six countries in the sample, no information is available about the education levels of the respective communities, even though education is closely correlated with broadband use.[22] In the absence of this information, the IBDR data set cannot reliably be used to determine the reasons for varying broadband penetration rates across different communities.

Time Lag: Few, if any, markets are more dynamic than the market for broadband service, which has been characterized by near-constant change and innovation. The pricing data in the IBDR was collected between July and August 2009, and the final report was released on August 27, 2010. There will always be some time lag between data collection and publication of that data, but any delay will inevitably reduce the usefulness of the data set. For example, between December 2008 and December 2009, the number of subscribers to AT&T's U-verse high-speed broadband service doubled.[23] AT&T and other providers are constantly improving their wireline and wireless broadband services, and year-old data would fail to capture the full extent of that innovation. Even if some time lag is unavoidable, any such delay will still reduce the explanatory power of the data.

II. THE IBDR DATA SET IS NOT SUFFICIENTLY RELIABLE OR COMPREHENSIVE TO BE USED AS THE BASIS FOR DECISIONS ABOUT BROADBAND POLICY IN THE UNITED STATES

In light of the many inaccuracies, gaps, and ambiguities discussed above, the data currently contained in the IBDR cannot reasonably be used as the basis for decisions about broadband policy in the United States. In assessing how domestic broadband service offerings

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[21] *See* Pew Internet & American Life Project, *Home Broadband Adoption 2009*, at 13 (June 2009) (finding that, in 2009, 77% of individuals aged 18-29 had broadband access at home, compared to 30% of individuals aged 65 and older).

[22] *See id.* at 14 (in 2009, 30% of adults with less than a high school degree had broadband at home, compared to 83% of adults with a college degree).

[23] *See* AT&T U-verse TV Marks 2 Million Customer Milestone, http://www.att.com/gen/press-room?pid=4800&cdvn=news&newsarticleid=30203 (Dec. 9, 2009).

compare to service offerings abroad — and in analyzing the reasons why some services are "better" than others — it is essential to perform apples-to-apples comparisons that include all potential explanatory variables. The IBDR data set does not yet meet these criteria. As explained above, there are significant problems with the data regarding many key aspects of broadband service such as type and technology of company, speed, monthly bandwidth limits and price. And the IBDR contains little, if any, information about other facts that are essential to a reliable comparison of broadband service offerings: the availability of each service within the community, the average age of residents of that community, and the extent to which the government has regulated, taxed or subsidized the service.

While many of these identified data problems simply make the data inaccurate and unreliable, certain of them tend to make foreign broadband services appear "better" than they actually are. Inclusion of only those communities that have comprehensive data available will skew the sample in favor of the communities that are most likely to have well-developed markets for broadband service. In some countries, reliance on "advertised" speeds may significantly overstate the speeds that are actually achieved by consumers. Use of purchasing power parity to convert foreign prices into domestic prices will make many foreign broadband services appear cheaper than they actually are; similarly, failure to account for the effects of government tax policies or subsidies will understate the true cost of many of the services listed in the sample. And inclusion of services offered by small entrants at possibly unsustainable prices sheds no light on the services that are actually seen as attractive offers by a meaningful portion of consumers in foreign countries.

In sum, the IBDR *does* clearly illustrate one point — the sheer diversity of broadband offerings around the world, and the difficulty of collecting comprehensive and reliable data about

the factors driving broadband use and deployment. But the IBDR data set is simply not adequate for drawing inferences or conclusions about whether broadband service offerings in other countries are "better" or "worse" than the services available in the United States. Such comparisons would not provide a reasoned basis for making domestic broadband policy.

CONCLUSION

AT&T agrees with the Commission that it is important to have comprehensive and reliable data about broadband service offerings in communities around the world. We also recognize the difficulty of the task of comparing international broadband service offerings that the Commission was given in the BDIA. Nonetheless, the data set compiled in the inaugural IBDR contains unexplained selection biases, gaps, inconsistencies, and poorly matched comparisons. That data should not be used by the Commission or other government agencies as the basis for decisions regarding broadband policy.

Respectfully submitted,

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