

## Google response to ACCC consultation paper

### ***Broadband performance monitoring and reporting in the Australian context***

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Australian Competition and Communications Commission  
By email to [BroadbandPerformance@acc.gov.au](mailto:BroadbandPerformance@acc.gov.au)

### **Broadband performance monitoring and reporting in the Australian context**

Dear Ms Larsen

Thank you for the opportunity to provide these comments to the ACCC's consultation paper on broadband monitoring and reporting in the Australian context. Google supports broadband measurement as an information tool for internet users, and welcomes the ACCC's decision to consult on the development of a program for measuring and reporting on the performance of broadband internet services in Australia.

#### **Introduction**

Google believes that fast and affordable broadband services are essential to help people and businesses get online and to make the most of what the internet has to offer. We also believe that people should have access to good information to help them choose what broadband service is best for them. This is in the interests of internet service providers, the companies that offer 'over the top' services - and most importantly, end users.

Google believes that the availability of clear and accurate information about broadband internet access services is essential for a free and open internet. Markets rely on information in order to function properly. Transparency systems are becoming an important regulatory tool, so that policy makers can assist in improving the information flows between service providers and users. Transparency empowers consumers to make the best choices, but it also enables accountability, as more information allows service providers to be held responsible for their actions.<sup>1</sup>

As the United States Federal Communications Commission has observed, "accurate information plays a vital role in maintaining a well-functioning marketplace that encourages competition, innovation, low prices, and high-quality services".<sup>2</sup> As such, Google supports the development and adoption of measurement tools and other technologies to ensure that

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<sup>1</sup> See generally Richard S. Whitt *Adaptive Policymaking: Evolving and Applying Emergent Solutions for U.S. Communications Policy* 61 F.C.L.J 483, 585-88 (2009)

<sup>2</sup> Federal Communications Commission *In the Matter of Consumer Information and Disclosure: Truth-in-Billing and Billing Format; IP-Enabled Services; Notice of Inquiry*, 24 FCC Rcd 11380, ¶ 5 (2009)

consumers have access to clear, accurate and useful information about broadband offerings to understand what they are paying for. Broadband measurement is a necessary and complementary part of improving broadband transparency. Measurement can serve other important roles as well, including advancing network research.

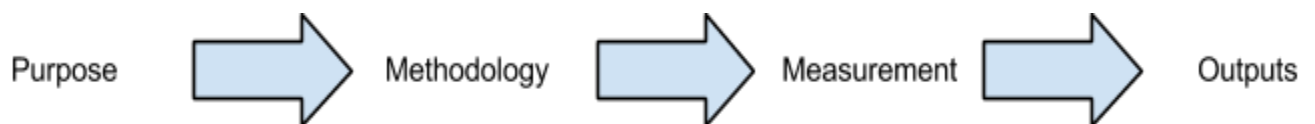
As part of its commitment to the measurement of broadband data, Google actively supports the work of Measurement Lab (M-Lab): an open, distributed platform on which researchers deploy Internet measurement tools. Internet users use the tools on M-Lab servers to test their broadband connection, including measuring speed and evaluating the performance of certain applications. When users run a test, they also provide data back to researchers and the public. The goal of M-Lab is to advance research and empower the public with useful, *verifiable* information about the performance of local and global networks.

All of the data collected on M-Lab is released in the public domain. Researchers, regulators, and anyone else with the time and skill can use M-Lab to study many different aspects of network performance. For example, one important aspect is understanding how broadband providers' network management practices differentiate between types of traffic.

Last year Google also supported the Research and Education Advanced Network New Zealand to create and host the NZ Broadband Test. This test uses Measurement Lab tools to help people measure their overall broadband experience and compare their internet connection with the experience of other consumers. Google would be pleased to discuss with the ACCC the possibility of developing a similar initiative in Australia.

## Developing a monitoring and reporting program for broadband services in Australia

Google believes that there are four phases in developing and implementing an effective broadband measurement program:



A great deal of the discussion in the Consultation Paper is concerned with issues concerning methodology and measurement. However Google believes it is critical to first identify with a high degree of clarity the purpose for which measurement is being conducted, as a clear definition of 'Purpose' will necessarily impact on the approach to 'Methodology' and 'Measurement', as well as the nature and approach to designing and publishing 'Outputs'.

Google's detailed comments at this initial stage of consultation are confined to some thoughts about the purpose and rationale of establishing a broadband measurement and reporting program, as in our view, it is difficult to form a view about technical considerations or methodology and measurement without a more detailed understanding of the ACCC's objectives, priorities and resource constraints in establishing a program. We have provided some less detailed thoughts about the ACCC's approach to methodology and measurement. However we would be pleased to have a more technical discussion with the ACCC about questions of methodology and measurement and any possible assistance that Google could provide in developing this program.

In summary, Google believes it is critical that the ACCC's approach is open: open about *why* it wishes to collect data, open about *what* is collected, open about *how* it is collected, and open about *access*, to details of the methodology as well as all the data collected and the results.

## Purpose

Section 1.2 of the Consultation Paper identifies many of the rationales and benefits for undertaking a broadband measurement and reporting program that would provide information on the real-world performance of broadband services. Google believes that these can be categorised as four broad rationales:

1. Improved consumer information and choice
2. Improved ISP accountability to regulators
3. Better information to enable network diagnostics and capacity improvements
4. Better information to enable ISPs to differentiate their product offerings.

Google submits that it is critical for the ACCC to carefully prioritise which of these rationales are the most important drivers for developing a broadband measurement program. There are multiple ways of measuring and reporting broadband performance, and the most appropriate methodology may be different depending on which of these rationales is considered the most important. Resources, sample size and network constraints may mean that it is not possible to design a methodology that is equally suitable for each of these five rationales.

For example, if the ACCC's primary purpose is collecting information to facilitate greater consumer information and choice, high levels of geographical aggregation may not be appropriate. Information that is collected on an aggregate level about consumer broadband experiences in 'regional Victoria' may not be sufficiently disaggregated to assist a consumer who wishes to make purchasing decisions about acquiring a broadband service in Geelong or Ballarat. High degrees of aggregation may also not sufficiently take into account for example, backhaul arrangements in a particular area or the physical geography of individual locations.

In contrast, if the ACCC's primary purpose is collecting information to facilitate regulatory oversight of broadband claims, or to compare the more general performance of ISP A with ISP

B, a higher level of aggregation may be acceptable. For example, it may be sufficient for a purpose of regulatory oversight to assess at a more general level that across an identified geographical zone, ISP X meets its speed claims n% of the time. Or for the purposes of ISP product differentiation, it may be sufficient to have information that ISP A is able to meet its peak download speeds n% of the time but ISP B can only meet this metric n-10% of the time.

Similarly, a different methodology may be required if the primary purpose for collecting data is to provide a diagnostic tool assisting prioritisation of service provider investment decisions.

Even within the purpose of 'Improved consumer information and choice', it is essential to clarify why information is being collected and to what potential uses a consumer might wish to put the information. For example, consumers may wish to know information such as:

- how fast is my broadband connection "right now"?
- if I buy a broadband service from ISP A that promises n speeds, what percentage of the time will I get those speeds?
- if I move to a particular suburb, how fast are the broadband speeds offered by the various ISPs that serve my suburb?
- I mostly use the internet in peak times. What are the real world speeds offered by the ISPs in my area at peak times?

Answering the first question would be best done by a consumer-side measurement tool, such as those hosted on M-Lab. The other questions may well be addressed by a measurement program, such as that contemplated by the Consultation Paper. However in designing the program methodology, Google submits that the ACCC must have a clear understanding of whether its measurement program would attempt to provide answers to some or all of these (or other) potential consumer questions in relation to broadband performance. Assessing these and other 'purpose' questions is a critical first step to designing a methodology and selecting a measurement tool.

## The importance of broadband information to consumers

As well as facilitating greater consumer choice, Google submits that improved access to information about broadband has an important competition role to play. This is particularly important in reducing switching costs in a digital economy.

Dr Robert Harris has identified seven categories of switching costs that may be relevant to consumer acquisition of internet access services: compatibility costs, contractual costs, transaction costs, search costs, learning costs, uncertainty costs and shopping costs.<sup>3</sup> In the

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<sup>3</sup> Dr Robert G. Harris *The Role of Switching Costs in the Markets for PC Operating Systems, Online Search, Internet Access and Mobile Service: implications for Australian Competition and Consumer Protection Policy*.

context of consumer internet access, 'search costs' and 'uncertainty costs' can be particularly critical:

- search costs: for example, in deciding whether to change provider, a customer must search for alternative carriers, information about quality of service on a network, or whether there are lower priced plans available;
- uncertainty costs: for products that are difficult to evaluate without experience ("experience goods") such as internet access plans, the differential between the experience a customer has had with the current supplier and the lack of experience with alternative suppliers can represent a switching cost. Uncertainty about the degree of risk in switching exacerbates these uncertainty costs. When other switching costs are moderate or high, uncertainty costs can amplify other switching costs.<sup>4</sup>

Dr Harris identifies that an increasingly important method of reducing uncertainty costs is the use of consumer ratings and reviews of products and services, made easily available by the internet. User experiences - and the "pooling of experience" among users - can reduce uncertainty costs to the point at which consumers are willing to switch. Google agrees with Dr Harris' conclusion that on the whole, public policies should promote such activities.<sup>5</sup>

A broadband measurement tool such as that proposed by the ACCC could become an important part of this consumer information matrix. Google submits that a primary consideration for the ACCC in identifying the purpose of its program is the extent to which improved broadband information can assist in reducing the search and uncertainty switching costs experienced by consumers in assessing broadband services.

## Methodology and Measurement

As discussed above, Google would be pleased to have a more detailed discussion with the ACCC about program methodology when we have greater clarity about the driving policy rationales for the program. As such, at this stage, we limit our comments to the following brief observations:

- Measuring consumer information.  
Our impression is that there are four key factors internet users value most in identifying information about and comparing broadband services:
  - Service name
  - Average speed (peak, average and minimum, for both upload and download)
  - Service charge
  - Set up charge

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<sup>4</sup> Ibid at pp 9-10

<sup>5</sup> Ibid at p10

- Measuring a ‘real-world’ experience

The Consultation Paper does not address whether the program intends to measure ‘on net’ or ‘off net’ experiences. Given the ACCC’s stated goal of measuring and providing information about the real-world performance of broadband services, it is important to give consideration to both. On-net measures can provide valuable data for assessing the strength of a particular ISP’s network. Off-net measures may come closer to the “real world” experience of an average user. Measurement of performance of particular applications may also offer value to consumers.
- Measuring small business and consumer experiences

The importance of small business connectivity to the internet is critical to digital participation and the digital economy. Recent research found that small businesses with higher digital engagement have better business outcomes than those with lower engagement, with a \$350,000 or 20 per cent increase in annual revenue.<sup>6</sup> Google believes that the consumer benefits of better access to broadband information apply equally to small businesses.
- Ensuring a broad range of measurement metrics

Depending on its identified priorities, the ACCC could consider at least the following metrics in its measurement methodology: peak and average throughput, upload and download speeds, latency, jitter, diurnal patterns, the impact of network management practices on application and content performance. Measurement could also consider the impact on performance of different protocols and applications, eg HTTP and VoIP traffic, or geographical considerations such as the quality and length of copper runs in various locations.
- The ACCC’s program should build on existing tools.

Google is supportive of the ACCC’s consideration of developing its own measurement efforts - but it should also build on existing ones. This could help reduce the costs of the program for the ACCC and open the way to comparisons with robust global data. As the consultation paper identifies, a wide array of network measurement tools already exist that may assist the ACCC’s efforts. Google believes that the ACCC should consider the complementary ways in which it can rely on multiple data sources and methodologies. For example, publicly-available user-initiated web-based tests, such as those available via M-Lab, can provide helpful information to consumers, but by themselves the resulting data are not adequate to fully understand the state of the broadband market. Because these tests can be designed so that they are relatively easy for users to run - often requiring just a single click - they can facilitate testing across a large number of users and provide indicators of actual conditions. However, selection bias and other confounding factors (e.g. other traffic on the user’s local network) can limit the utility of

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<sup>6</sup> See Deloitte Access Economics Connecting Small Business report 2013.

the aggregate data. As such, software and hardware tests such as those discussed in the Consultation Paper, across a representative sample of users, can provide essential further information.

## Outputs

The ACCC should adopt policies that maximise the openness and transparency of its broadband measurement. An important aspect of this is open availability of raw result data, as well as measurement/analysis methodologies, to enable third parties to “look under the hood” of the tools and techniques on which the measurement relies, and make collected broadband data openly available to re-use. This will allow researchers and others to independently verify and provide feedback on the measurement methods, as well as analyse and build upon the results.

Google believes that the ACCC should develop the outputs of its broadband measurement program with three primary goals in mind:

1. The creation or adoption of a consumer tool providing clearly accessible and searchable results
2. The importance of making available the raw data (or, de-identified raw data where required to protect personal information) for further analysis or innovation by researchers, the public and entrepreneurs<sup>7</sup>.
3. The publication of aggregated data identifying analysed results and trends (for example, a regular ACCC report assessed against consistent and identified metrics)

## Conclusion

Google welcomes the ACCC’s recognition of the benefits of greater information and transparency about broadband internet services in Australia. Google believes that transparency of information is critical to improved consumer choice and participation in the digital economy, as well as the general success of the open internet.

While these comments are necessarily of a high level, Google would be pleased to provide further information about any of the issues raised in this submission, or to explore ways that Google may be able to assist the ACCC as its plans progress.

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<sup>7</sup>4. Google believes that this would be consistent with the Government’s overall ‘Gov 2.0’ goals and the proven benefits that can flow by making data sets openly available via websites such as [data.gov.au](http://data.gov.au)