Ofcom Call For Input – measuring mobile voice and data quality of experience (published 23rd January 2013)

BT response

Introduction

1. BT welcomes the opportunity to respond to Ofcom's Call For Input.

1.1 There have been significant changes to the communications market in recent years (primarily the advent of superfast fibre broadband, and the proliferation of smartphones and tablets etc.) This has driven how consumers access the internet: they increasingly use mobile devices (as Ofcom observes, (para 1.8) data via mobile devices more than doubled between 2011-2012). These developments mean consumers are now presented with a meaningful choice of technologies when it comes to choosing their broadband service. There is, however, less parity between the range and quality of objective information available to consumers to help them make a sensible choice between fixed and mobile internet, or even between different mobile providers. 4G is being positioned in the market as an alternative to superfast fixed-line broadband, therefore it should be compared in the same measurement survey so that consumers can make valid comparisons.

1.2 Ofcom's own research indicates that the main factors for consumers are price and speed. Price is usually relatively easy for consumers to compare even across technologies, but speed less so, even between mobile operators. In the fixed arena, Ofcom's own fixed-line broadband performance (Speed) report helps consumers compare all large operators' performance on speed and other metrics. Additionally Ofcom's Broadband Speeds Code of Practice ensures that potential customers are given a good indication of the speed they are likely to get, and factors which may affect it, should they sign up to a particular service. None of this speed-related information is available to consumers contemplating buying, or switching to, a mobile broadband service, leaving customers to rely largely on the mobile networks' own marketing.

1.3 To help empower consumers to make optimal purchasing decisions, we believe mobile data/broadband services (to include 3G and 4G) should be included in the biannual Ofcom (fixed-line) broadband performance report (re-naming the report accordingly), and in a suitably amended Broadband Speeds Code of Practice.

We note that the CAP (Committee for Advertising Practice) has already amended its Broadband Advertising Guidelines to include 4G.

1. **What information would be valuable to consumers when purchasing mobile services?**
2. **What data would be required to produce this consumer information?**

2.1 Mobile (smart) phones (as well as other devices) are increasingly being bought by consumers who want to be able to access the internet in their homes. From our experience as a fixed provider, we believe these consumers want, and should be able, to compare speeds between different providers (mobile or fixed) before they buy. Consumers should also know the reliability of such internet connections, as for mobile services (voice and data), reliability is a key factor – there is a tendency for failed or dropped connections, and as this is likely to be an important consideration for the majority of

consumers, comparisons between different services and operators would help consumers drive quality improvements through better-informed purchasing and switching decisions.

2.2 Mobile and fixed broadband are increasingly substitutable products (depending on the end user's specific needs and the capabilities of the device they are using), so we suggest Ofcom considers the substitutional impact of 4G technology for fixed (especially ADSL) broadband, especially in the home (using dongles). The advent of 4G mobile technology - already being positioned as "superfast"* - will provide greater choice for consumers, making it all the more important that they are able to make comparisons across both fixed and mobile technologies.

*Typical speed 6-12Mbit/s, which is 5x faster than 3G (average 1.5Mbit/s) [source EE marketing]

2.3 Quality of Experience metrics

We suggest the following are measured (for both fixed and 4G/3G mobile):

- Access speeds (maximum speed as in Ofcom fixed-line broadband performance report/CoP)
- Download speed (throughput)/upload speed (peak time and 24 hour)
- Latency
- Jitter
- DNS Resolution
- Packet loss

For 4G/3G mobile, it is key that measurements are taken at different distances from the network base station, so that metrics are available for both rural and urban locations, both inside and outside the home, and on the move. Tests should be carried out at a large and varied number of locations, at different times of day etc., for a minimum duration, and across different parts of the UK, by region/nation.

Latency and jitter can be just as important as speed for certain real-time applications like gaming etc. However presenting these metrics in more readily understandable terms for consumers would be helpful, for both mobile and fixed.

2.4 To make comparative metrics even more meaningful to consumers, we suggest the following could be measured for both technologies (fixed and mobile):

Quality of Experience for:

- Web-browsing;
- downloading and uploading files (music, film or photos);
- watching streamed video (iPlayer, YouTube);
- using VoIP;
- multi-player gaming applications;

We know this is something Ofcom has been considering for fixed broadband, and it would be beneficial if there is consistency of the metrics used for both. We suggest these metrics have 95% confidence limits, as is the case for existing Ofcom performance reports for average and maximum speeds.

For all measurements a consistent methodology across mobile and fixed should be used.

2.5 For all metrics, there is an added factor for mobile that is different from fixed, as speeds are typically less constant. It would be useful therefore if consideration could be given to looking at minimum/maximum speeds over a period of time. An example of why this information would be useful is that if a consumer is uploading photos to Facebook from a mobile, the first one may upload quickly, whereas subsequent photos may take much longer or not at all. These are real issues that consumers need to be able to compare and judge.

2.6 Traffic Management

We also believe it is vital for consumers to be able to fully understand ISPs' traffic management policies (including throttling and blocking), which are increasingly important. They need to be fully transparent, explaining for example, the effect on applications used. A recent EU report shows that: "at least 20% of mobile Internet users in Europe experience some form of restriction on their ability to access VoIP services, although there are differences by country".

As a signatory of the voluntary Traffic Management and Open Internet Codes of Practice, we support not only the publication of KFIs by ISPs, but also the safeguarding of access to legal services. We therefore believe that traffic management should not be deployed to block VoIP or other over-the-top services that are designed to work over data paths.

2.7 Tethering

"Tethering" is the use of a mobile handset or other internet-enabled mobile device - as a modem for another device, e.g. laptop or tablet. All Mobile Operators must make clear if this is possible, or if there are any restrictions or additional charges (and what they are). Any limits imposed by operators on download speeds should also be made clear.

2.8 Devices

The device used to access the internet itself can have an effect on the customer experienced. Any testing should clearly specify the device, model and operating system version used (maybe a small standard "set" of popular devices should be used, to be refreshed annually). (We are happy to share our research on this aspect). Any measurement should be undertaken with dongles, tablets and smartphones (and of late "phablets" – a smaller tablet, or larger mobile handset).

2.9 "Superfast"/"ultrafast"

4G Providers are already positioning the service as "superfast" (EE marketing), or even "ultrafast" (3 marketing). Although primarily an advertising issue and of greater interest to the ASA, it is important for consumers that there is a common understanding of what these terms might mean, especially when comparing fixed and mobile data speeds. This will mitigate against customer confusion and detriment. It is not practical or advisable to have a separate definition for "superfast 4G" as opposed to "superfast (fixed line) broadband" - they should be one and the same. Ofcom may want to look to BDUK/DCMS for a standard definition (e.g. at least 24Mbit/s to 30Mbit/s), and in particular BDUK's recent guidance on requirements of wireless technologies in meeting NGA state aid obligations published here:

https://www.gov.uk/government/publications/fixed-wireless-technology-broadband-delivery-uk-guidance

This would align with the EU's Digital Agenda target of a minimum download speed of 30Mbit/s by 2020.

We note that in its fixed-line broadband performance reports Ofcom qualifies superfast connections as those "with an advertised speed of up to 30Mbit/s or more".

3. <u>When and how Ofcom could best collect the necessary data?</u>

3.1 Our limited research shows that initial 4G speed results (whether using handsets or dongles) are good but not consistent. These results are affected by low cell-fill, and availability from only one operator at present (EE). We have observed a wider range of speeds being measured now, depending on when (time of day)/where (geographic location) the measurement is carried out.

3.2 We note from Ofcom's Press Release of 20th February 2013 that it will be carrying out research to measure the performance of 3G and 4G networks, probably around December 2013 (with results published in Spring 2014). We urge Ofcom to undertake this research, plus additional metrics, much sooner, and not wait until the end of the year. Not only should consumers be able to compare the performance of 4G against 3G using a wide range of metrics, but consumers need to compare 4G & 3G against fixed broadband too.

3.3 Ofcom may wish to consider enlisting the help of the current experts in the field for broadband measurement – in particular Sam Knows and Rootmetrics – and establishing whether any measurement of 4G/mobile has been done outside the UK. We understand Rootmetrics has measured speed, in the context of a crowdsourcing provider. Opensignal and Epitero are other experts that could be considered. In addition there is a range of widely used smartphone apps and website speed tests (such as Speedtest.net from Ookla) that could provide useful indicators, and Ookla's NetIndex.com website provides useful comparative data. The apps are available for the most popular smartphone platforms (iOS, Android, Windows Phone 8), and also track fixed broadband speeds.

Jeremy Benson, BT Retail, 28th March 2013