EE's response to Ofcom's Call for Input
'Measuring mobile voice and data quality of experience'

EE welcomes the opportunity to respond to Ofcom's consultation 'Measuring mobile voice and data quality of experience'.

Summary

- Ofcom should be taking a holistic approach to the provision of information to consumers. While EE agrees that relevant information at the right time and in the right format is important for consumers to make informed decisions, it is concerned that Ofcom is only adding to an already long list of existing information.

- EE believes that consumers are already being furnished with the relevant information to be able to make effective purchasing decisions. Too much information can create confusion in the marketplace.

- The mobile networks already respond to the needs of customers through self-regulation, including various codes of practice and Ofcom should not regulate unless there is a specific market failure or evidence of consumer harm.

- Third parties are providing access to relevant information, linked to individual customers' situations, in the form of tools and apps (e.g. OpenSignal, Speedtest.net). Ofcom should have regard to the information provided by these parties before launching into expensive data gathering activities which may only yield out of date generic results.

- Ofcom should only be collecting information if it has demonstrated that there is a lack of information in the market and that lack of information results in consumer harm.

- Ofcom should learn from past experience that its interventions in this area have resulted in significant costs with no consumer benefit. Any measurements being considered should reflect actual customer experience, i.e. must be relevant to the audience; and publication of information should be in a consumer-friendly format so that it is easy to understand if it is to fulfil the intention of effectively informing purchasing decisions.

Introduction

The UK mobile market is highly competitive with a market penetration of over 82 million subscribers[1]. It is a vibrant and innovative market delivering significant consumer benefits and choice. New services and devices are emerging all the time and customers are able to switch between providers with ease and in one working day. Technological change is continuing at a rapid pace, altering the functionality of access and core mobile networks as well as changing the performance of rival technologies. Complaints are low, customer satisfaction high and competition has increased the value for money for consumers over time.

The mobile market serves citizens and consumers well and competition is the most important stimulus for ensuring that they benefit from technological advances. These benefits include service and technology innovations, fair prices and investment. EE has seen strong growth in demand for capacity driven by the take-up of mobile broadband and 4G which offers higher network capacity and data rates, reducing the costs of delivering existing services, and enabling new services. This can be seen by the decline in voice minutes and sms volumes and the rapid growth in data as demand increases. Consumers have benefited hugely from the growth in data and new types of mobile devices and applications over the past few years. Some innovation has been driven by new entrants to the sector (such as Apple's iPhone, Facebook, Twitter and Skype). Other innovation has evolved from existing players.

EE is the first in Britain to offer superfast 4G mobile services alongside fibre broadband. EE is investing £1.5bn over three years to roll out superfast 4G mobile services currently covering 50 towns and cities[2], and extending to 72 by summer 2013. EE intends to reach 98% of the UK population by the end of 2014 (fixed and mobile coverage), with its fixed fibre broadband service already reaching 11 million households and businesses (at the end of 2012).

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[1] http://stakeholders.ofcom.org.uk/binaries/research/cmr/telecoms/Q3-2012.pdf
[2] As at 28 March 2013

According to Ofcom's Infrastructure report published in November 2012[3], data volumes over mobile broadband have more than doubled in the last year as more people are accessing the internet through smartphones and tablets. An average of 246MB of data was consumed for every active SIM over the last year. Although the absolute levels of data carried over mobile networks are still much lower than for fixed networks, the growth rate of mobile broadband is much higher and the commercial launch of 4G mobile services in the UK by EE will further accelerate this.

Ofcom should take a more holistic approach on information in order that it can deliver the right consumer outcomes. Whilst we agree that relevant information, at the right time and in the right format is important for consumers to make an informed decision, we are concerned that Ofcom is merely adding to a long list of already existing information. EE supports a more holistic approach to consumer information, driven by a more behavioural economics approach rather than an approach based on the assumption that more information equates to better decision making.

Ofcom's objectives

Ofcom states that it has a statutory duty under the Communications Act 2003 to collect and publish certain types of data and that it seeks to provide advice and information to help consumers make better and more informed decisions about their communications services. However, one of its two general statutory duties provides that it must … 'further the interests of consumers in relevant markets, where appropriate by promoting competition'[4]. Ofcom should be more concerned with encouraging an already competitive market rather than imposing additional costly burdens on mobile operators. In addition, existing General Conditions of Entitlement already ensure consumers are provided with a substantial amount of information:

General Condition 21 requires providers to publish comparable, adequate and up to date information for end users on the quality of its services. It fails to expressly recognise that the Universal Services Directive actually states that competition can deliver the provision of information:

[3] http://d2a9983j4okwzn.cloudfront.net/downloads/infrastructure-report-2012.pdf

[4] S3 (1)(b) of the Communications Act 2003.

"Undertakings providing communications services, operating in a competitive environment, are likely to make adequate and up-to-date information on their services publicly available for reasons of commercial advantage..."

Furthermore, Ofcom states that a lack of information may lead consumers to make poor purchasing decisions, or inhibit them from switching provider. If such information is not readily available or is presented in a complex way, there may be a case for Ofcom to intervene to address issues in the interests of and to protect consumers.

However, EE believes that consumers are already being furnished with the relevant information to be able to make effective purchasing decisions. Too much information can create confusion in the marketplace. The mobile communications providers already respond to the needs of customers through self-regulation, including various codes of practice[5] and Ofcom should not regulate unless there is a specific market failure or evidence of consumer harm. Ofcom is at all times obliged to act proportionately in pursuing its objectives and it should only be collecting information if it has demonstrated that:

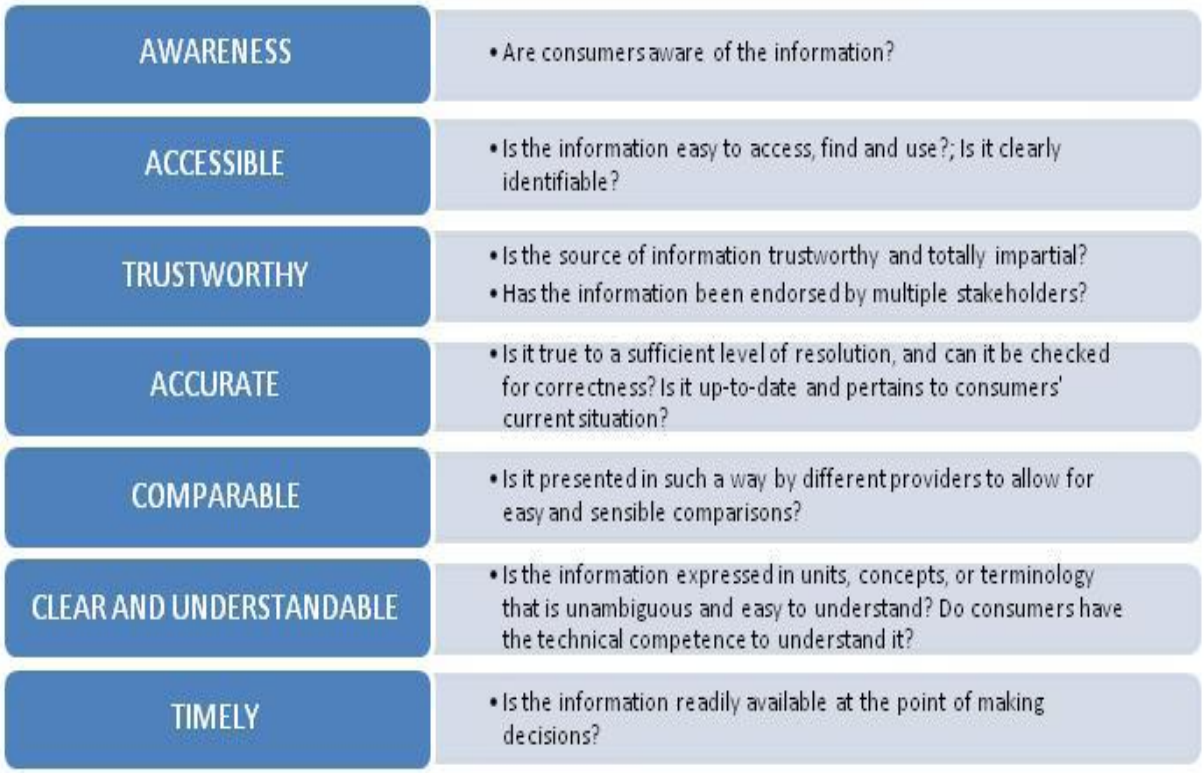
- There is a lack of this information; and
- that this lack of information leads to consumer harm.

Therefore if consumers are able to make fully informed decisions about products and services, it is not necessary to impose more onerous, formal and costly approaches. Ofcom fails to take into account that third parties provide QoE information, which often can be tailored to individual customers' needs.

In its review of consumer remedies[6], Ofcom identifies a range of characteristics that appropriate information remedies might be expected to take into account (see table on page 5).

[5] e.g. 'Principles of good code of practice for promoting and selling mobile broadband'; 'code of practice for the self-regulation of new forms of content on mobiles'; 'code of practice for allocation and management of cross-network shortcodes'.

[6] 'A Review of Consumer Information Remedies' published 12th March 2013



Data provision and collection are resource-intensive exercises and Ofcom should minimise the impact on networks by utilising whatever is already available or attainable, and targeting any areas of concern or gaps in provision of information in the market. Ofcom should also demonstrate:

- the relevance of the collected data to consumers' decision making;
- that the information is filling a gap; and
- that the specific gap needs filling.

If Ofcom finds evidence of a gap it should also consider which data provision obligations it should roll back.

Understanding the consumer experience

Based on the information in Ofcom's Call for Input document, there does not appear to be a major issue in this area:

- Unsurprisingly, customers expect to make and receive calls;
- the majority of customers are satisfied with their service; and
- many end users don't experience any problems at all.

QoE is also referred to in the industry as 'Quality of Service' ("QoS") which is a more subjective measure of a customer's overall experience of products or services using parameters. The key factor for measurement of quality today is data as more and more data-hungry services such as high definition video are launched. **[✂]** Consumption of content drives mobile broadband growth, tablets being the main source of growth. The proliferation of high-end handsets, tablets, and laptops on mobile networks is a major generator of traffic, because these devices offer the consumer content and applications not supported by previous generations of mobile devices. A single smartphone or tablet generates far more traffic than a basic-feature phone. The explosion of mobile applications and increased mobile connectivity is fuelling the growth and adoption of 4G globally.

Ofcom concludes that its research indicates that some consumers are not wholly satisfied with the QoE of their mobile service and refers to its 2010 Quality of Service research report which found that consumers particularly valued information on price and network quality of service. In a fast moving market, with rapid technological change, Ofcom should update its research and ask customers today specifically what information they would like to see that would influence their purchasing decisions and which are not available today on any website. In addition, Ofcom could try to use focus groups to better understand how people act when given certain types of information, mimicking real-life situations and using an approach based on behavioural economics. More generally, we have suggested on several occasions that Ofcom should develop a more holistic approach to consumer information, rather than looking at individual parameters in isolation. In this respect we believe all of the General Conditions of Entitlement with a requirement to provide consumer information should be reviewed.

Coverage vs quality

EE strives to give each of its customers the best communications experience possible from the moment they begin their journey with us. Customer satisfaction in every activity and part of the customer journey is important right from the time a customer switches on their phone to after sales service. This includes making a call, sending a text message, making a video call, browsing a website, watching a movie on a device, and walking into an EE store or phoning us for help.

EE's view, and this is evidenced by Ofcom's report, is that users want to make and receive calls and are therefore interested in coverage. In addition, they want to browse their favourite sites and quickly download programmes, games and videos. As Ofcom acknowledges, the UK already has a high level of mobile signal coverage. Ofcom has estimated that 99.7% of UK premises receive an outdoor 2G signal from at least one operator and 93.6% of premises receive a signal from all operators. The Government has announced an initiative aimed at extending existing mobile voice coverage further still through its Mobile Infrastructure Project (MIP) recognising the importance of mobile services to citizens and the economy. The many initiatives undertaken which are listed below on pages 11-12 have so far not addressed the core issue at heart, which is quality of experience related to coverage and not-spots. It has taken the MIP to address these issues.

Ofcom concluded in the statement that followed the second consultation document on the Mobile Sector Assessment, Mostly Mobile[7] in July 2009:

"We found the mobile market to be effectively competitive in 2003; since that time, the number of network operators, retailers and distributors has grown. In the light of the degree of competition in the market and the significant costs that a market review would impose, directly on operators and indirectly on consumers, we do not intend to conduct a market review at this time".

Each operator has had commercial reasons for focusing on different coverage issues (e.g. a basic level of coverage across the entire country, in-building coverage, and faster data speeds etc). In certain areas it is not commercially viable for operators to build out a network, and government initiatives can reduce the number of not-spots and limited coverage areas.

[7] http://www.ofcom.org.uk/consult/condocs/msa/

In October 2011, the Government announced £150m capital expenditure for MIP. The project which runs until at least 2015 will address the coverage and quality of mobile network issues for the 5–10% of consumers and businesses that live and work in areas of the UK where existing mobile network coverage is poor or non-existent; and aims to extend coverage to 99% of the UK population.

The key areas to be addressed are:

- How local development priorities can be used to inform how not-spots are prioritised;
- What challenges need to be addressed in the acquisition of suitable sites on public land, what planning challenges exist and how best to address them sympathetically; and
- The ways in which communities and others can contribute towards the development and operation of mast sites.

As Ofcom states, the extent to which operators are incentivised to improve their consumers' QoE is in part related to the competitive advantage that they can gain from offering the higher quality. We agree that consumers must be able to take the QoE offered by different operators into account when making purchasing decisions, but the parameters must be relevant to them otherwise information is being provided for information's sake and consumers are unable to differentiate the information most relevant to them.

Customer insights

For communications markets to work well consumers must be able to make informed choices. Making clear, relevant, accurate and understandable information available will aid those decisions. Ofcom's accompanying research document 'Attitudes towards mobile phone functions including reception' seems to only cover the consumer experience in relation to mobile phone reception issues but doesn't take into account other relevant factors that may influence customers' purchasing behaviour.

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Customers need up to date information with the right level of detail in order to make well-informed purchasing decisions. The fact that there are few dedicated independent third party quality of experience comparison services could suggest a number of things:

- there is little consumer demand for this information (customers are already satisfied with the information available);

- the information is too hard to compare as there are so many different variables, which may be used to different extents by different customers.

It is accepted that mobile communications providers will be interested in this information for competitive commercial reasons, but this may also be attributable to the difficulty in extracting information that can be deemed "comparable" and the significant start up cost involved in producing this information.

Data collection

Many mobile communications providers undertake their own technical measurements or use third party organisations. These studies are not necessarily for public consumption but rather used to inform internal business decisions. **[✂]**

As mentioned already, there are tools and Apps available in the market which also measure quality of service. OpenSignal is an Android App[8] with a simple concept which is to (1) see where the mobile signal comes from; and (2) try to measure its quality. If the signal is weak it provides a quick and simple way to refresh the phone's connection and then reconnect to a stronger connection. The main interface is a single dashboard with data on reception, wifi networks and data performance. There are also maps of cell tower locations (it currently has 824,297 cell towers, 825 cellular networks, 1,230,834,497 wifi points and 5,186,324,530 signal readings[9]). It has a built-in speed test for wifi or mobile connection and allows customers to keep track of monthly usage.

Speedtest.net is another available tool for iOS, Android and Windows Phone devices for fixed and mobile broadband testing which allows customers to find out their upload and download speeds. The service is free and measures hundreds of testing locations around the world. The data can be shared if permission is granted and customers can view their service's performance history across wide or

[8] Soon to be available for iOS

[9] Figures taken from www.opensignal.com

narrow areas. It performs over 50 million tests every month, and is available on the web, on the iPhone and Android mobile platforms.

'Low level of understanding' is not a sufficient justification for such exercises. Data collection must be undertaken in a cost-effective way and must lead to consumer benefits. There have been a number of initiatives aimed at presenting consumers with 'useful' information on quality of service to inform their purchasing decisions. As Ofcom acknowledges in its recently published report 'A review of consumer information remedies'[10] not all have been successful in terms of usage statistics (e.g. TopNet), yet in all cases mobile communications providers have incurred significant costs.

"1.12 Some types of information may turn out to have limited effectiveness, for example, when it is presented in a way that is not helpful to consumers. For example, Ofcom was involved in initiatives such as Topcomm and Topnet, when we sought to make information on various aspects of providers' quality of service available. However, it was presented in a format which was not as readily comparable as it could have been. This was compounded by low overall awareness of the information's availability. Consequently, consumers tended not to seek out this information."

We are concerned that this could happen again. The previous schemes which have all incurred significant costs and delivered, in our opinion, limited benefits are discussed below. We recognise that Ofcom has a statutory duty to publish the Infrastructure report (although not as frequently as it has decided to do so), but the data collection for the report has been incredibly resource-intensive. Ofcom's decision to publish annually and the resultant burden on operators should be borne in mind.

Previous schemes include:

- Oftel drive surveys;
- TopNetUK;
- The work of William Webb (on behalf of Ofcom);
- 2G network testing by CRFS;
- Mobile broadband speeds testing by Epitiro;
- Mobile broadband speeds testing by SamKnows; and
- Ofcom's Infrastructure report.

[10] http://stakeholders.ofcom.org.uk/binaries/research/research-publications/information-remedies.pdf

Each of the above initiatives was conducted either by the mobile communications providers themselves, or a third party acting on behalf of Ofcom. There were varying levels of success and collaboration as well as concerns about collection of data, relevance and comparability across the mobile communications providers and its presentation to the end user. A key concern for all mobile communications providers was data integrity. As early as 1997 when the Oftel drive scheme was underway there was a perception that signal and reception problems, as well as coverage not-spots, caused customers to complain about quality of experience. The market has rapidly moved on since then and by the time the TopNetUK scheme launched, each operator was delivering at least 98% population coverage, so the results became meaningless to customers. In addition, there were suspicions as to the integrity of the results. The scheme was eventually disbanded in 2009 because of lack of consumer demand. The fixed networks were also measuring performance (Topcomm scheme) but that also disintegrated eventually as the data was not comparable. Mobile customers saw no value in the TopNetUK scheme and the mobile communications providers themselves questioned whether it was actually meeting the regulatory objectives as originally set out. Such initiatives were encouraged by the regulator but unfortunately those involved in the scheme tended to be focussed on its technical aspects and it proved difficult to obtain changes that could have been beneficial to consumers. Any future scheme would need to be truly independent, reflective of actual customer experience and deliver information that customers need.

In Autumn 2009 Ofcom announced in its Mobile Sector Assessment, Mostly Mobile[11], that it would be undertaking a piece of further research related to mobile network coverage. Ofcom highlighted that the causes of mobile not-spots were likely to be commercial, technical, planning or a mix of these, and that Ofcom wanted to research not-spots to illustrate and evidence how these factors played a role in determining whether a particular location had mobile coverage. Ofcom wanted to investigate the scope for solutions in those areas, such as:

- Whether it would be possible that commercial barriers could be overcome if mobile networks shared networks, masts or developed roaming arrangements in particular not-spots
- Whether capital subsidy from a local organisation help to make the case for investment
- Whether technical solutions were available that could help deliver mobile coverage, e.g. on medium-to-long train routes, would boosters on trains combined with alternative backhaul, be a feasible alternative

[11] http://www.ofcom.org.uk/consult/condocs/msa/ , published on 8 July 2009

- Whether the not-spot would be covered if a planning decision was overturned

Ofcom recruited William Webb, PA Consulting and CRFS to undertake various parts of the research. At that stage Ofcom was mainly concerned about mobile not-spots and the possible commercial, technical and planning-related causes and whether it had a role to play in overcoming the barriers such as whether capital subsidy from a local organisation could help to make the case for investment. 2G performance and drive testing was managed by an independent project manager and the actual testing was outsourced to CRFS. A trial was conducted in Devon in September 2010 (after months of delay) along with many discussions about methodology, vehicles for testing, devices and aerials used, quality of information and audit processes, as well as the output and how it would be interpreted and used. From the outset EE was not clear about the purpose of the exercise and what it was trying to achieve as it was open for the mobile communications providers to improve the network coverage in that area in order to improve their results.

Ofcom appointed PA Consulting to examine a number of mobile not-spots in the UK in different regions and in areas that were populated and unpopulated. Mobile communications providers were interviewed separately about each not-spot (mainly 2G because 3G rollout had not completed). The information that was gathered was compiled into a research report with recommendations from the case studies, including whether solutions were actually possible in some of the case studies. Ofcom planned to use the findings to potentially develop some short guidance for the public sector on the potential to address not-spots in particular contexts.

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Ofcom began looking at mobile broadband speeds testing with Epitiro under quality of testing in line with the fixed broadband speeds testing. EE pointed out some fundamental flaws with the methodology; including the assumption that mobile broadband behaves like fixed broadband, which is clearly not the case. Ofcom saw the fixed broadband speeds testing as a success and wanted to replicate it.

Technical performance metrics

Once Ofcom has assessed the nature of the current information provision and if it has identified that there is a need for more information which consumers are likely to use, EE believes that an independent body should carry out the testing. We believe the data collection should meet the following criteria:

- It must be carried out in a cost-effective way;
- The tests must mirror actual customer experience;
- The tests should not be based on theoretical measures;
- Mobile communications providers should not be able to influence the testing, as was the cases with Oftel/Ofcom testing.

In addition, EE would like to know how work undertaken previously in this context (e.g. by SamKnows) will be used to inform Ofcom's decision in order for previous efforts in collecting exhaustive amounts of data not to be wasted. We also recommend that Ofcom monitors the usage of published data, not only in respect of this initiative, should it go ahead, but more generally, on consumer information provided through its website.

All tests and tools used should reflect actual customer experience regardless of the underlying technology. Ofcom should be trying to understand tools already used by mobile communications providers as well as those available in the market, and the way that they incorporate real-world data and the corresponding issues associated with assembling and comparing such data across the mobile communications providers. In order to be useful, the measurements must be truly comparable and should be based on where and when consumers actually use their mobile devices. The results of such tests should be presented in a customer-friendly format which is easy for consumers to understand and that cannot be misused or misrepresented.

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Data disclosure

There is a very real risk that any confidential and commercially sensitive information that EE may be required to provide to Ofcom may be released into the public domain. There are various laws which impose the release of information on public bodies, e.g. the Freedom of Information Act 2000 (FOIA), Environmental Information Regulations 2004 (EIR) and Re-Use of Public Sector Information Regulations 2005. Some regulations give Ofcom the authority to demand data from Operators, e.g. the Communications and Competition Acts which can then be released following FOI and EIR requests. There are only very limited exemptions allowed to reject an EIR request and these have been narrowly construed, Even commercially confidential information must be released. We would have concerns about the impact of these laws and regulations on any coverage information provided to / produced by Ofcom and we have detailed all these concerns in previous responses to Ofcom.

Annex 1

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Annex 2

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