Enabling the information society

BCS, The Chartered Institute for IT
Consultation Response to:

OFCOM: Measuring mobile voice and data quality of experience
Dated: 1 April 2013

BCS
The Chartered Institute for IT
First Floor, Block D
North Star House
North Star Avenue
Swindon SN2 1FA

BCS, The Chartered Institute for IT

The Institute promotes wider social and economic progress through the advancement of information technology science and practice. We bring together industry, academics, practitioners and government to share knowledge, promote new thinking, inform the design of new curricula, shape public policy and inform the public.

As the professional membership and accreditation body for IT, we serve over 70,000 members including practitioners, businesses, academics and students, in the UK and internationally. We deliver a range of professional development tools for practitioners and employees.

A leading IT qualification body, we offer a range of widely recognised professional and end-user qualifications.

www.bcs.org

OFCOM: Measuring mobile voice and data quality of experience
Dated: 1 April 2013

Consultation Document:

Consultation Questions/Answers:

Summary of BCS, The Chartered Institution for IT Position

1. The Institution believes that Mobile Communications is a critical national capability and an essential element of the overall infrastructure development to support the successful expansion of the UK Economy. Our Members expressed concerns regarding the current and future delivery of mobile and fixed broadband in the UK and the potential digital exclusion of large parts of the UK population and economy. Additional concerns were expressed regarding the general effectiveness of current mobile network, operational performance, coverage and quality of services for Smartphone and Tablet applications which are increasingly becoming embedded in UK business processes. The current high level of "not spots" experienced, particularly "SOS only", in urban as well as rural areas is of concern.

2. The lack of actual data on the operational performance and coverage of Mobile Networks has been an issue for most of our members. The de facto position is that the UK Telecoms operators are essentially self-regulating in terms of coverage and the performance level they deliver. We believe that coverage is largely judged by operator supplied prediction maps, and there has been no real independent benchmarking for three years in the UK. Hence there is no commercial driver for MNOs to work to improve network performance. This is in our view is leading to a reduction in effective competition, which is contrary to other national Regulatory Authorities, where actual coverage and performance are conditions of license and where the Regulatory Authorities carry out their own audits, holding defaulting operators to account.

3. The Institution recognises the cost of providing an effective means of monitoring network quality of service. However with the introduction of smartphone technologies, GPS and detailed GIS databases of the UK we suggest that there are now available low cost and objective means of monitoring the quality of service, network coverage and service performance of mobile networks from a user perspective. This capability we know is in the process of being adopted by one UK Mobile Network Operators (MNO) and several other international MNOs. Given the major changes in the telecommunication landscape, the 4G roll out and future 5G initiatives, we recommend that Ofcom initiate a programme for the continuous and independent performance monitoring of the quality of Mobile Quality of Experience as soon as possible. The Institute would welcome the opportunity to work with Ofcom along with similar interested and independent institutions in establishing low cost and practical ways of implementing such a regime.

Detailed Response

What information do Users (Consumers) need?

4. The Institution generally concurs with the information provision that Ofcom proposes. We would emphasise that objective Information is required based on actual user experience. It should be made clear what information is from predictions and/or gained from user surveys or limited "drive through" surveys. Currently most network provider coverage checkers are based on predictions and not actual measurements. The following information should be considered as providing an objective view of quality of service and experience:

    - Voice Service Quality and Call Performance
    - Data Availability by Network Technology (2G, 3G or 4G)
    - Data upload and download speeds, reliability and any latency

- Timeliness of text message delivery
- Service/Signal Availability and Quality by Network Technology
- Geospatial Information: Specific Area Usage and Performance down to a granularity of 10m x 10m
- Handset Model and Operating System (E.g. Android, iOS, BlackBerry) Performance by Network Operator
- Network Performance in Traffic Hotspots (e.g. travel centres, exhibitions)

This information should be collated on a daily basis down to at least post code level – or agreed GIS polygons.

Proxies for QoE metrics

5. While the Institution agrees with Ofcom's list of proposals we believe that this list should be extended to make use of all available information. We recommend that measurement of Quality of Experience should be gained using data from three main sources:

    - MNO Sourced Data – Predicted Coverage and best mobile server
    - User/Consumer Sourced Data – Handset measured performance, consumer surveys using "Crowd Sourcing" techniques
    - Open Source – Census information, GIS databases

    It is important that the data is collated and reported on by a third party independent of the MNOs.

Predicted v Actual Performance data

6. The Institution recommends that actual performance data should be the prime means of judging Quality of Experience. Current Smartphone technologies are capable of acquiring the necessary data which can provide accurate information even when travelling and there are a number of Apps on the market that deliver this capability. The Apps can record details of, for example, "Not Spots" to be analysed using existing geo-spatial databases. This type of analysis is already in use in other countries.

7. The Institution believes that adopting a "crowd sourcing" approach will enable the rapid establishment of an independent real time, low cost data collection capability. A suitable App loaded onto the personal mobile phones of selected "volunteers" from a cross section of the socio-economic mobile users, type of phone and geographic location will enable the acquisition of actual performance data through the monitoring App rather than using network operators' predictive data. While this user base should remain independent of Mobile Industry Service Providers and suppliers, the process could be automatic and the potential number of volunteers massive.

8. The resulting data will not only enable comparisons to be made in network Quality of Experience but will assist in the development of future UK Telecoms policy; it need not be costly or intrusive if supported by "crowd sourcing" techniques and will provide additional important socio-economic data. Crowd-sourcing is already one of the acknowledged trends of this decade. It's become prevalent because, to state the obvious, it serves the purpose of the mass market. The key advantage of crowd-sourcing, in the context of network coverage and performance, is that the UK will have a data source that is relevant to almost the entire population and it is constantly updated. Linked to Geo

Social data bases the data can be used to support other detailed research, such as the current Imperial College investigations into health impacts of mobile phone usage.

9. In preparing this response the Institution has called on the experience and expertise of the Communications Management Association (CMA) which has been incorporated into the BCS, The Chartered Institute for IT.

End