This message is sent to respond to the consultation on the future USO.

The views expressed in this message are my own and are given as a customer and end user of broadband services in the UK. I am an individual.

I would start with the statement that BDUK on a technical and strategic basis makes sense, the desire to go straight to full FTTP is of course desirable but not practical for many reasons, we shall not dwell upon that in this message.

It must be recalled that the existing PSTN network in the UK has evolved over many decades and had never been envisaged as the data network it has become, to make amends for decisions made by the former GPO, now BT Group and legislation imposed by the UK Government, mainly via OFCOM, that legislation has to be looked at critically now to decide if that is providing the motivation to produce the end result desired by this consultation to provide a UK wide USO for Broadband and an aspiration to achieve large scale access to ultrafast speeds to the UK. The goal should be 90% access to ultrafast in Market 1 locations within 10 years of the first USO coming into being. In 2014, Dr Peter Cochrane former CTO of BT states in the 1990's the government at that time scuppered attempts for BT to roll out a national broadband, Dr Cochrane had the foresight to move the UK to an entirley fibre based network in the late 1970's, by the 1990's this was stopped because BT had a monopoloy. The irony of stopping BT from having the foresight to invest and pay for on a commercial basis, the roll out of a national fibre network, vs the subsidised BDUK process we have now should not go without notice.

How long for OFCOM after this consultation, to define what will become the specification of the USO? It seems to be expected the USO will not become defined by OFCOM until 2020 and does the requirement on the USP come into force the same year, my comments assume it does. Only then will the consumer will be able to start to request a USO capable connection. If so, by that time, the current 10Mb USO as proposed should not be considered sufficient. It is assumed that once a USO compliant connection is installed that it will always keep up to date with any revised USO specification. A more aggressive requirement should be mandated, it gives the USP confidence that once equipment is installed it will meet USO for the next 10 years to achieve acceptable ROI, which helps the country towards an ultrafast enabled future.

Should there be a truly universal USO? Although it would complicate the legislation, Yes and No, Yes there will a universal USO, but No it will not apply to the whole country, there should be two geographic categories. The category would be based on distance from nearest property and from nearest cabinet (an exchange, or other high speed data access point), for example if a property is less than 3km from a cabinet or less than 1km from a property classified as Normal USO, then it shall be in the Normal USO category, otherwise it is in the Basic USO category.

For the Normal USO category. Should there be a minimum speed *and* latency definition? There should. A value of 30Mb should be the minimum required download speed to exclude use of ADSL2+ so build an entirely VDSL (or better) network to simplify ANFP planning. Latency to any UK Internet Exchange Point (IXP) shall be less than 100ms, with a target or normally being less than 50ms. Latency is a real problem, more and more business is conducted globally, through use of VOIP and Web based conference calls, latency makes it

hard to have conversations as people start talk over each other. For the Normal USO the upload speed should be 5Mb or better, to cope primarily with sending large files, online back up systems and HD Web conferencing, which a telecommuting individual will need to carry out its essential work activities.

The Basic USO category, should only include those living in the remotest of locations, the Basic USO should provide a minimum download speed of 15Mb and an upload speed of 2Mb, latency to any UK IXP shall not be more that 300ms. If a person has located themselves 10 miles from anywhere and 6000ft up a mountain, communicating with the world is likely not their priority, satellite is their only option.

About MNO solutions. Are 4G and 5G networks being deployed or being designed by the well established MNO's the answer to any part of this problem? Could an MNO reliably meet the Normal USO requirements? If TV viewing habits move to streaming based, whether motivated by UK.gov and OFCOM policy or just through consumer desire, are the MNO and TV content producers building the systems required to support continous 5Mb video streaming by large numbers of people? If not, OFCOM should be sceptical of the networks deployed by an MNO. It is not to say 4G and 5G technology is inherently unsuitable for meeting the Normal USO, but an MNO has to design and configure the network for the kind of usage, which it may well not be doing today.

The far better solution for sparsely populated areas is Fixed Wireless Access (FWA), which will be those most in need of the USO. How to make FWA an option vs an MNO. MNO should prove they have packages designed/specified for domestic use.

FTTP is seen by many as the ultimate solution. It of course far exceeds the USO requirements. Will CityFibre, Gigaclear and Hyperoptic help serve small pockets of 8 or so houses which are in need of the USO to keep them from falling further behind the kind of broadband speeds found in urban areas? It seems unlikely they would. They have targeted large villages in areas BDUK has failed to provide a sensible solution.

How will the USO or future OFCOM legislation make it possible for a USP to compete with BTO in Market 1 locations? There is competition elsewhere in the country. These Market 1 locations are the majority of the rural and sparsely populated locations, Mr Vaizey states this consultation is trying to assist these locations the most, the USO and future OFCOM legislation should be shown to support that statement.

It is not obvious that the telcos who compete with BTO in non Market 1 locations (e.g. Virgin Media), typically urban locations, cities and larger towns, have any significant interest outside of the areas where they have deployed and installed broadband infrastructure to date. That interest is clearly not national. With that in mind. Market 1 locations, where BT are the only provider of fibre based broadband are the areas with least competition, which also makes them the simplest for radical overhaul because there is no 3rd party LLU equipment installed by other ISP's. Therefore this should be taken as a chance to make the largest changes to OFCOM regulations in these locations, for example, relax the need to provide a copper circuit, where no ducts exist more fibre via poles should be used to avoid road closures and earthworks.

Asking if there is Demand for USO is perhaps the wrong question, to have national access to the whole population to essential internet based services is needed, that is the requirement.

What should happen in non Market 1 locations? There should be no further BDUK funds, public money, EU grants or any kind of subsidy for broadband internet provision, made to properties which are not connected to a Market 1 exchange. The incumbent telco shall be required to meet or exceed the Normal USO requirements at their own cost. This will normally be those small groups of houses within larger towns which have been missed by the commercial roll out by that telco. With an exception as follows. If a property is not connected to a Market 1 exchange, and it fails to meet the criteria for being in the Normal USO category, it will be able to claim a subsidy for the cost of the upgrade. This is to catch those small villages and hamlets which are on the periphery of a large town, that have been missed out by both commercial and BDUK rollouts of FTTC within the large town.

It should also be looked at as to how to motivate the forward planning to support future developments in technology so the country does not get into the same situation in the future. This should happen through the Building Control and Planning process. The Building Control and Planning regulations shall require all new build sites (green or brown field) to make provisions for cabinets, joint boxes and ducting as required for all properties to include FTTP, no subsidy shall be made available for this, it shall be factored into the building costs. Also any property redevelopment of 3 or 4 buildings, or any existing property spilt into 3 or more apartments shall be equipped ready for FTTP, a subsidy may be provided for this to a developer who builds no more than 3 properties a year to a maximum of 8 apartments.

Quote from the DCMS USO Consultation [Ref1] document:

"The various interventions that Government has made to date, and the substantial commercial investment that has been made, have resulted in a fundamental shift in the extent of broadband coverage in the UK. Without further intervention however there will still be significant numbers of homes and businesses whose access to high-speed broadband will lag behind the majority.

One-off interventions do not allow for speed increases and changes in consumer expectations over time, and so a further roll-out programme similar in design to those already undertaken by Government would not address the problem in a sustainable way in the long term.

We believe that, for those premises that will not have been reached by commercial investment or by the Government's interventions by the end of the current planned programmes, the time has come for a demand-led approach. Given the high costs of providing broadband access to premises in remote areas it is right that this is done on request, rather than rolling it out and waiting to see if people in those areas want to be connected.

We know from the various interventions that the Government has made to date that it is unlikely that everyone will want to be connected, even if that option is made available to them, and so we do not believe that an additional broadband roll-out programme at this time is proportionate or would represent value for money."

The reading of the paragraphs quoted above suggest the following. This seems to suggest that

either there is no Phase 3 to BDUK or just that Phase 3 will be run very differently? The arguments given that a demand-led approach will be used in what I assume we are still calling Phase 3 are simple and clear. BDUK Phase 1 and 2 were led by Local Councils, so for Phase 3 is the council leading the demand generation or putting customers and suppliers in touch with each other?

The USO is also demand-led, stated on Pg. 12, so does that still allow providers to sell and market non-USO capable services. Does that make sense? Only if other rules about Building Regulation are implemented does this make sense so that newer buildings are already FTTP ready. What happens when the 1st person in a group of houses gets a USO line, will they foot the large bill and then nearby properties will not pay so much?

Need clarification that at a property, if BT meets the the telephony USO, a different provider may meet the broadband USO. Is it required that a provider of broadband USO must also meet the telephony USO? Assume the answer is no, if a consumer wanted a phone line, they would have asked for it, no point in burdening a supplier with the telephony USO too, this is adequately provided by BT.

It is also inevitable there will be a cap on the amount to be spent on a property for it to gain a USO connection. OFCOM should provide a review mechanism whereby if it is obvious that the cap has been exceeded due to poor planning of network infrastructure, the cap shall not apply and the telco shall provide a USO connection at their expense within 12 months of the USO connection being requested.

Summary:

As described above there should be a Normal and Basic USO defined, it is not reasonable for the remotest locations to receive subsidised provision of internet services.

The purpose of Phase 3 should focus entirely on Market 1 locations as these are the locations most in need of innovative solutions to the provision of internet services. If Phase 3 will be demand led, how will the demand be measured and the funds allocated? Because BDUK Phase 1 and Phase 2 have been managed by Local Councils, the assumption is that Phase 3 will also be managed by Local Councils. This is of great concern as it seems some Local Councils have been much more proactive during BDUK Phase 1 and 2, giving guidance to BTO (thereby deciding where the public funds are spent) and engaging with alternate suppliers of internet services where BTO would not provide internet services under BDUK. Some have let BTO plan the FTTC roll out with little or no guidance with Council staff allocated to managing BDUK on a part-time basis. Are Local Councils really that best place to manage Phase 3?

It is mentioned that a Phase 3 would be demand led. The criteria for that needs to be thought through. If 10 properties in a village of 20 ask for this, versus 10 properties in a town of 10000, which one is seen to have generate the 'larger demand'. How will be the people with the demand be matched with a supplier? Phase 3 needs to be a much more transparent scheme, people will for sure want to understand why Village1 received funds vs nearby Village2.

Outside of the Market 1 locations, we find mostly urban and city locations, there is competition and infrastructure to support the USO. We have seen new entrants into these areas from Gigaclear, etc whilst BDUK Phase 1 was ongoing, indicating the needs of these locations will be met.

The specification of the USO should happen in Primary Legislation, the UK Government should be held accountable for the state of the internet service provision until 99% of the locations eligible for the Normal USO is achieved and 100% looks likely to be achieved without relying on satellite.

References:

DCMS USO Consultation [Ref1] https://www.gov.uk/government/consultations/broadband-universal-service-obligation