Culture Media & Sport Select Committee

Establishing world-class connectivity throughout the UK inquiry

A submission from the Federation of Communication Services.

The Federation of Communication Services represents companies who provide professional communications solutions to professional users. Our members deliver telecommunications services via mobile and fixed line telephony networks, broadband, satellite, wi-fi and business radio. Our members' customers range from SMEs, home-workers and micro-businesses up the very largest national and international private enterprises and public sector users. FCS is the largest trade organisation in the professional communications arena, representing the interests of nearly 400 businesses with a combined annual turnover in excess of £45,000million.

In the context of this inquiry, FCS members are predominantly the wholesale customers, rather than the providers, of connectivity. But they have a deeply vested interest: without high quality, affordable and ubiquitous connectivity – preferably available from a choice of more than one supplier -- it is impossible to deliver the hosted databases, value-added call-handling and recording functionality and cloud-based software solutions which empower business growth and efficiency in the present age.

FCS is therefore pleased to have this opportunity to respond to this timely consultation from the CMS Select Committee. It has long been our view that the regulation of the UK markets for broadband and for both fixed and mobile telephony infrastructure need to be scrutinised from first-principles by Parliament. We welcome the breadth of the Select Committee's inquiry, and we look forward to helping inform the development of this work in the coming months.

Main concerns:

1. It is timely and correct that both the delivery of high-quality connectivity and the regulatory frameworks that surround it should be subject to first-principles Parliamentary scrutiny. The proposed BT/EE merger, currently with the CMA, highlights that Ofcom can only regulate the (EU defined) 'regulated' markets. But customers are consuming converged, technology-agnostic solutions. They don't have a preference for the technical platform. They just have a preference for it working. Regulation must radically re-align with the reality of converging solutions.

2. In particular, data now needs the same level of attention from Ofcom as voice. There is no requirement for data regulation in the EU directive.

3. The Committee's choice of the expression 'World Class' connectivity is both apposite and perceptive. The 2015 DCMS Digital Communications Infrastructure Strategy https://www.gov.uk/government/publications/the-digital-communications-infrastructure-strategy/the-digital-communications-

infrastructure-strategy sets an ambition of nearly all UK premises having access to download speeds of 100Mbps by 2020. Seen in the context of present levels of UK connectivity, this is an ambitious target. Seen in the light of the services already available in other international trading nations it is mediocre. Seen in the light of the EU Single Digital Market aspirations, it is a strategic commitment to the slowest broadband speeds in Europe.

4. Regulatory presumption to date has been towards service level competition. But not infrastructure-level competition. This has successfully created today's vibrant and hugely competitive resale market – a market might already justifiably be termed 'world class'. But it has also perpetuated the de-facto monopoly of BT's Openreach subsidiary as wholesale supplier in much of the country and hindered the entry of new entrants and innovative new approaches to delivering connectivity.

5. To create the kind of genuinely open and flexible market which is best able to cope with the changing and mutating demands of future businesses and consumers, we now need to empower competition at the infrastructure level — and to do so without allowing the creation of artificial barriers to switching supplier. Price-effective wholesale access to fibre backhaul infrastructure is the key enabler to unlock the next generation of connectivity.

Question 1: What role should Government, Ofcom and industry play in extending superfast broadband to hard-to-reach premises?

6. Firstly, we must consider whether this is really the right question to ask. "Extending superfast broadband to hard-to-reach premises" is language from the present state of the market. It is not the language of a 'world class' future.

7. In present public policy statements, 'hard to reach premises' are typically taken to be those addresses in the so-called 'last 10%' [or even 5%] which fall beyond the reach of BDUK's current Superfast Broadband Scheme. Many of these premises are geographically hard to reach (deeply rural, few dwellings, difficult terrain). But many are within cities or urban areas where for a variety of reasons it has not yet proved economically viable for incumbent operators to deliver connectivity.

8. Whatever the context 'premises' is an unhelpful shorthand. Premises which are occupied by business users, or which would ideally be used for business or commercial purposes within local structure and development plans, require different levels of connectivity to premises occupied by consumers. To empower small local start-ups or enable niche rural suppliers to sell on-line requires levels of reliability and stability which differ significantly from the demands of consumers who wish to watch on-demand television. In particular, UPLOAD speeds are often

more important to businesses wishing to sell than download speeds are to householders wishing to consume on-line content.

9. In present public policy statements, what is meant by 'superfast' broadband is typically British Telecommunications Plc's FTTC (Fibre-To-The-Cabinet) product. 'Superfast' is currently "defined" as 24Mbps download speeds by HMG (or 30Mbps by Ofcom and the EU). Fibre optic cables are laid from a fibre-enabled exchange to a street cabinet. And delivery from the cabinet to each individual premises is via a traditional 'twisted pair' of copper wires. The quality of signal received at the individual premises is a function of distance from the cabinet (signal decays with distance) and of the number of other users accessing services from the same cabinet at the same time (signal weakens with contention). By the nature of the copper-based service, and as a reflection of the needs of consumer customers, the Download speeds available on this service are an order of magnitude larger than Upload speeds. The typically quoted 27Mbps average for 'Superfast' is a Download speed. Upload speeds are more typically 5Mbps.

10. 'Extending Superfast Broadband to hard-to-reach premises' therefore simply means extending current worst-in-class connectivity to customers whose present service is so poor that even modest upgrades will seem like a breakthrough.

11. A better question, in the context of this inquiry, would be to determine the extent to which it is possible to extend truly world-class connectivity to hard-to-reach premises. Such a move would help create jobs and encourage social stability in deeply rural areas of the UK. If it ultimately proves the case that nothing better than existing 'Superfast' speeds will ever be possible, irrespective of the level of investment, then at least we will have approached the question from the right end of the telescope. And rural communities will be able to plan their future development accordingly.

12. BDUK's existing Superfast Extension Programme is already funding innovative trials connecting these 'last 10%' areas. And Government already has some powerful learnings from the current BDUK Connection Vouchers scheme. A re-focusing of the same scheme into Rural Connection Vouchers of some kind would maintain the helpful principle of placing the decision as to how the state subsidy will be applied directly into the hands of the user who will benefit from it. This keeps decision making at a local, granular, sub-post-code level. And it ensures the decision is made on the basis of what will benefit the user, rather than what will benefit the supplier.

Question 2: Is there sufficient competition in these markets? If not, how can any market failures best be addressed given the investments already made?

13. Significant infrastructure investments have been made by BT as a result of the Rural Broadband Scheme. These investments have been underwritten by public money, and have resulted in the creation of some 2,000 new access nodes on the BT fibre network. These nodes should now be made available to enable non-BT infrastructure suppliers to access BT fibre backhaul at commercially viable rates. Ofcom is well capable and experienced in setting an appropriate pricing and service levels regime, in consultation with industry stakeholders.

14. Given the investments already made, policy must be to ensure all 'claw back' clauses in existing BDUK contracts are examined and actioned. All monies should be made available to local authorities to extend broadband availability in their own areas. All such projects should be let by competitive tender to ensure LAs receive the best possible choice. Competitive tender also ensures any improvements in technology or competition which have come about since the beginning of the original scheme can be harnessed for the benefits of the later adopters.

15. Creation of a 'Rural Broadband Vouchers' scheme of some kind would further encourage choice in supplier, and a better informed purchasing decision both from the end users themselves and the public servants who administer procurements on their behalf.

Question 3: What are the commercial, financial and technical challenges the programme faces in reaching the final 5%? What technologies exist to overcome them? What investment is required, by whom and for what return?

16. Companies who are directly engaged in the commercial business of rolling out connectivity solutions are better equipped than FCS members to comment upon the commercial issues. We merely note that there appears a strong body of evidence to suggest a willingness among inward investors to take a stake in a vibrant UK telecommunications infrastructure -- as long as there is reasonable certainty there will be no state-subsidised overbuild by the incumbent operator.

17. Cost-efficient wholesale access to fibre backhaul would ensure existing sunk assets are used efficiently. Several companies already have significant volumes of 'dark fibre' in the ground. The build and infrastructure costs have already been borne. What is needed is a regulatory and legislative environment which encourages the owners to press this sunk asset into use.

18. It should be noted that existing passive infrastructure (ie ducts and poles) used to carry utility services, railway signaling cables or local authority CCTV or traffic management exist in many parts of the country. Such infrastructure assets can often be accessed to carry additional fibre bearers, generating a rental income for their owners in the process. The Republic of Ireland has

obtained some impressive penetration into deeply rural areas by doubling up fibre bearers with electricity supply cables.

19. Markets can always be relied upon to access or develop the best possible technologies to meet customer needs. As mentioned above, BDUK is already funding a series of best-in-class technology trials using solutions like point-to-point wi-fi.

Question 4: Given that in practice a Universal Service Obligation could not capture 100% of households, what should a USO for broadband look like?

20. The de-nationalisation of BT came with a 'Universal Service Obligation' upon BT to provide a service delivering voice (originally over copper) to every UK premises upon request. FCS considers this obligation has now been overtaken by the mobile coverage obligation in Telefonica's spectrum licence under the 2012 'digital dividend' spectrum auction, and that it should pass to Telefonica at the end of 2015.

21. As a minimum, any new USO for broadband would have to deliver sufficient connectivity, with sufficient reliability and sufficient security to enable citizens to access all 'digital by default' public services on-line, without any risk of being disadvantaged in comparison to other citizens with faster access speeds.

22. By definition, therefore, any USO would have to at least aim to capture 100% of households. Experiences from the farming community (where requirements to fill in forms and upload reports on-line require a degree of connectivity in excess of that available to many rural premises) suggest the cost and hassle of using 'agents', simply because they are located in areas of better connectivity, is working to the detriment of efficiency and productivity in the sector.

23. To build out to these spot users requires cost-efficient wholesale access to fibre backhaul.

24. We therefore submit that the question, as worded, already presumes the answer. A better question might be: **What would industry, Ofcom, Government and Subscribers need to do to ensure a minimum level of connectivity for all premises in the UK?** eg: Para 29 below.

Question 5: What are other countries doing to reach 'not-spots'? How affordable are their solutions?

25. There is ample evidence of cost-effective Fibre-To-The-Premises solutions having been delivered at scale in Scandinavian countries, Eastern Europe and in the Republic of Ireland, even to deeply rural locations. In some instances, 'affordability' has undoubtedly been a function of EU funding, coupled with the lack of a reliable legacy copper network, which has effectively allowed a technology leapfrog without significant retirement costs for the incumbent operator.

26. Wi-fi repeaters, local 'pico-cells' or 'femto-cells' on lamp-posts or street furniture have been deployed in urban areas to create mesh wi-fi networks. The issue here is that operators need to be guaranteed cost-effective access to fibre backhaul.

Question 6: Should Government be investing more in research and development into finding innovative solutions to meet the communication needs of remote communities?

27. No. It is the role of Government to create a regulatory environment in which commercial operators can create a commercial case to invest in R&D in order to gain advantage.

Question 7: Are BT and other communication companies investing sufficiently themselves in reaching these groups?

28. Evidence from the market place suggests that BT's commitment to investment in innovation is a function of the extent to which new commercial challengers threaten its ability to trade. But the question is still being posed from the wrong end of the telescope.

29. Instead of the carrot, how about the stick? Rather than starting with the status quo and seeking to encourage investment, a Government which truly wished to see universal connectivity extended to all users might institute some kind of 'connectivity intensity penalty' scheme. Something similar to the carbon trading regime. The inability of an incumbent supplier to deliver acceptable connectivity to a customer should attract a penalty. This penalty should rack up geometrically year on year, in accordance with a pre-published programme. Performance in reducing 'connectivity intensity' would be required to appear in the network's annual report to shareholders, in a manner similar to environmental reporting.

30. Suppliers could then decide whether to invest in improving connectivity, or sell the book on to an alternative provider, or invest in offsetting schemes (for instance providing the services of those farming 'agents' free of charge as service to their customers).

31. It is important to create the right incentives for improvement, rather than tolerate excuses for the status quo.

Question 8: What investment and progress are the mobile network operators making in improving mobile coverage across the UK and enabling a swifter process when users choose to change provider? How could these best be improved?

32. Like British Telecommunications Plc, the Mobile Operators have a two-pronged business model: the supply of mobile handsets and retail voice/data, and the ownership of the mast-sites and hence the connectivity over which they are delivered.

33. Because mobile network operators own the mast sites, there are large patches of the country where one or other of the networks enjoys a monopoly position, simply by dint of having a mast site in an area where its rivals do not.

34. Because mobile network operators own the mast sites, wholesale access to mobile connectivity is severely restricted. With no regulatory presumption in favour of equivalence of inputs (as is the case in fixed line telephony), wholesale mobile minutes are essentially in the gift of the operators, and wrapped around with contractual constraints. This works to the detriment of consumers, inhibits the development of specialist or niche resellers, and sustains what amounts to a complex monopoly at the network level.

35. A universal roaming obligation should be placed upon the mobile network operators. It is absurd that UK businesses are having to use Belgian SIM cards because EU 'roam like at home' requirements deliver a better coverage to a Belgian tourist than to a UK national with a SIM from one of the UK networks.

36. An equivalence-of-access style regulatory regime should require mobile operators to allow wholesale access to their networks on the same basis as BT Openreach's current obligations.

37. DCMS's existing commitment to 'Gaining-Provider-Led' switching, as used in everything from retail banking to fixed line telephony, should be introduced without delay.

Question 9: How have the existing Government broadband programmes been delivered?

38. UK Government and BDUK can be proud that Britain currently points to some of the best availability, most competitive pricing and fastest download speeds of many EU nations. As far as it goes, this is an excellent achievement, and the last two successive governments can take great credit for it. As far as it goes.

39. How have the existing programmes been delivered? Against tight short-term deadlines, and with little thought to future-proofing the nation's needs beyond 2020.

40. There is little point at this stage re-visiting the shortcomings of the Rural Broadband Scheme procurement, except for what they might teach us about the future. Government had deadlines and targets in mind, which over-rode what ought to have been normal commercial warning signs when only one single bidder won 100% of the lots. Of greater concern is what the legacy of

the combined BT-centric commercial and state-subsidised fibre roll out means to the UK going forward.

41. 'Superfast' broadband is a fit-for-purpose solution for present-day consumers who wish to watch catch-up TV, stream movies and participate in on-line gaming. It is skewed in favour of consumers, both because of its asymmetric download/upload speeds, and because of its geographic penetration: even in areas with state aid, roll-out to cabinets in business postcode areas has lagged significantly behind roll-out to neighbouring postcodes with high densities of households.

42. 'Superfast' broadband also represents the limit of what BT's current delivery infrastructure is capable of delivering without significant additional investment. The BDUK investment fuelled what amounts to little more than a fast-tracking of a scheduled update of the existing legacy copper infrastructure.

43. At the same time, the level of investment and the focus on equipping the UK for a digital future has encouraged the emergence of new entrants to the market place. Companies like City Fibre, Gigaclear and Hyperoptic are delivering Fibre-To-The-Premises solutions, lit with a minimum 100Mbps service, with synchronous upload and download speeds. From nowhere, these new contenders have arrived at a point where they already pass 1.2m premises, and are on track for 10m by the end of 2017.

44. Where local authorities have taken the initiative to seek competitive tendering around BDUK Superfast Extension Programme schemes, it has proved possible to deliver FTTP at scale to rural communities with a level of state aid intensity of around 20%. (For example, Gigaclear FTTP delivery to 'last 5%' in West Berkshire)

FCS Suggestions:

The aggregated responses to the Committee's questions should provide a rich understanding of the current state of play. The most important question is: what about tomorrow?

At the beginning of the last Parliament, David Cameron was talking in terms of a vision of 2Mbps to every UK home. Within weeks, it became clear we would have to set our sights higher. Now, alongside his first Budget speech of the present Parliament, George Osborne unveiled a vision of 100Mbps to just about every UK home by 2020. This is broadly in line with the EU's Digital Single Market strategy. So it essentially represents a vision of 'no worse than anybody else in Europe'. That 100Mbps benchmark is, of course, a download speed. There is no corresponding commitment for synchronous upload speeds.

The big question, therefore, is: are we convinced that 100Mbps is as high as any progressive, inward-investing organization will ever need us to go? Are we convinced that delivering more than 100Mbps is simply a waste of resource? Are we convinced that countries who deliver more are simply making themselves price-uncompetitive?

All the evidence points in the opposite direction. To take simply the most recent example: in the City of York, where City Fibre already passes 70,000 homes. TalkTalk and Sky are already talking about how they use their wholesale access to develop 'gigabit products' which will engage their subscribers in new and unique ways – and, of course, lock them in to their existing suppliers comes renewal time. Yes, 'gigabit' products. Partly marketing hype. But partly, also, a reflection of the fact that once you have fibre to the premises, boosting the signal is simply a matter of adjusting the hardware at either end. It is future-proof, passive infrastructure, of no interest to metal thieves, ready to deal with the demands of an as yet unimagined tomorrow. As long as the electricity stays on, of course.

The UK 'Fibre Roll-Out' of the last Parliament represented a rush to be less medicocre, a little faster, than anybody else in G7 Europe. It should perhaps be seen as the last and the greatest classic old-school public sector procurement: shoring up the existing incumbent operator's legacy copper network and sinking 1.7bn pounds of taxpayers' money into yesterday's technology.

BT argued in the last Parliament that running fibre to every premises in the UK would cost tens of billions. FCS has no reason to dispute this assertion, though we are not aware of any Government procurement exercise which tested that estimate against real market conditions at that time.

But the question of how to pay for it is never far from Parliament's lips these days. So what would the pay-back of having truly not just world-class but world-beating connectivity look like for UK plc? Compared with, for instance, some of the other projects already on the Government's stocks? FCS stands ready to help provide some of the figures if required -- though there are many excellent reports already in the public arena, and BT, to their great credit, already have some very well-attested statistics about the demonstrable socio-economic benefits of the current fibre roll-out. One independent starting point for the Committee might be the New Economics Forum's report, suggesting FTTH across the UK represents significantly better value for the taxpayer than HS2.
http://www.neweconomics.org/publications/entry/high-speed-2-the-best-we-can-do

However we pay for it, and however steep the glide-path, fibre to the premises is the future for UK plc. Affordable wholesale access to backhaul is the key that unlocks it.

The Parliamentary and regulatory levers which would need to be pulled are modest. And as we are already among the leaders in Europe, UK plc is in the happy position of being able to set the pace of transition with a view to ensuring we are always two steps ahead of our nearest commercial neighbours – albeit constantly watching what's going on in Korea, Singapore and Hong Kong.