Ofcom Digital Communications Review

Response from the Ofcom Advisory Committee for Scotland (the ACS)

The Advisory Committee for Scotland has recently produced a detailed response to the Culture Media and Sport Committee Inquiry into establishing world class connectivity throughout the UK, with a particular focus on the progress being made in extending and improving mobile coverage and services into hard-to-reach areas. In general, these are the areas of the Digital Communications Review (DCR) condoc where the ACS feels there is a specifically Scottish dimension, and so there is a considerable overlap between the points we would wish to make to this consultation, and the CMS response. Given the short timescales, the ACS has therefore chosen to make some additional points under specific questions, and then to reproduce our CMS response here, indicating on it which sections are relevant to the DCR questions which are important to us. The DCR questions we feel most relevant to Scotland are listed first, drawing attention to particular CMS response sections of interest with some additional comments. The CMS response is then given in full, annotated with the numbers of the most relevant DCR questions.

Our response to both consultations can be summarised by the following paragraph:-

The ACS believes that the stage one priority is not creating competition to drive up quality of service and reduce retail prices for the majority. It is ensuring that at least one supplier or a combined supplier initiative provides a satisfactory service to every consumer and business in the UK, which can then be further developed to match the quality enjoyed by the majority. Only then will the full benefits of digital connectivity be felt by all UK citizens.

Digital Communications Review questions with comments

Question 1: Do stakeholders agree that promoting effective and sustainable competition remains an appropriate strategy to deliver efficient investment and widespread availability of services for the majority of consumers, whilst noting the need for complementary public policy action for harder to reach areas across the UK?
See particularly sections 1 and 2 below

Question 2: Would alternative models deliver better outcomes for consumers in terms of investment, availability and price?
See particularly sections 1 and 2 below

Question 3: We are interested in stakeholders' views on the likely future challenges for fixed and mobile service availability. Can a 'good' level of availability for particular services be defined? What options are there for policy makers to do more to extend availability to areas that may otherwise not be commercially viable or take longer to cover?
See particularly sections 3, 4, 6, 7 and 8 below

Question 4: Do different types of convergence and their effect on overall market structures suggest the need for changes in overarching regulatory strategy or specific policies? Are there new competition or wider policy challenges that will emerge as a result? What evidence is available today on such challenges?

It is important going forward to look beyond mobile phones and ensure that spectrum is available for developing other uses, for example the Internet of Things. When spectrum auctions take place in future (e.g. 700MHz), not all of the spectrum should be allocated to the MNOs. In order to stimulate a market in other service providers some of the spectrum should be allocated to projects which concern the 'public good' or 'public benefit'. The large MNOs will go where they can achieve best return on investment. If spectrum was available at much lower costs to community groups or niche providers of service then they would be more likely to be able to deploy services in less economic areas than large multinational corporations who have shareholders to satisfy. Reserving spectrum for the public good and selling it at much lesser value (ie not maximising return from spectrum sales at all costs) could stimulate markets as yet unknown and allow niche service competition.

Question 6: What do you think is the scope for sustainable end-to-end competition in the provision of fixed communications services? Do you think that the potential for competition to vary by geography will change? What might this imply in terms of available regulatory approaches to deliver effective and sustainable competition in future?

Effectively Ofcom takes the view that there are two models for regulation in the UK – inside WECLA and outside of WECLA. The ACS suggests that for the rest of the UK this one size fits all approach is no longer fit for purpose. A more granular approach is required. One option would be that the whole of the UK be broken up into economic areas similar to the model in the USA – roughly speaking at Local Authority level. Regulatory intervention could then be tempered appropriately in each zone and remedy for breach be applied to suit local market conditions. This 'Local' approach to regulation would allow for removal of regulation where appropriate, completion as the basis for regulation where appropriate and recognition of Openreach's de facto monopoly where there are areas of infrastructure deficit brought about by market failure. The local approach is also more in keeping with the intent of the EU Single Digital Market Framework which makes allowance for 'local' differences in regulation.

Question 8: Do you agree that full end-to-end infrastructure competition in mobile, where viable, is the best means to secure good consumer outcomes? Would alternatives to our current strategy improve these outcomes, and if so, how?
See particularly section 8 below

Question 9: In future, might new mobile competition issues arise that could affect consumer outcomes? If so, what are these concerns, and what might give rise to them?
See particularly section 9 below

Question 11: What might be the most appropriate regulatory approaches to the pricing of wholesale access to new and, risky investments in enduring bottlenecks in future?

Ofcom does not currently know what return on investment is reasonable from investment in infrastructure, where the infrastructure investment currently is and what the gap is. There are few facts or indeed metrics and we are left with hypotheses. Ofcom should be able to compel the industry to disclose the locations of their assets, maintain a record of where assets and service availability actually is, forecast in conjunction with operators where they intend to invest voluntarily and therefore be able to measure and quantify the extent to which the market has failed in certain areas. Then and only then can coverage obligations and universal service provision be considered in the light of real world information. For comparison, we refer to how detailed the knowledge of

OfGem is in relation to the location and value and return on investment on plant in the electricity network, now and in the next 5 year regulatory period.

See also section 4 below

Question 12: How might such pricing approaches need to evolve over the longer term? For example, when and how should regulated pricing move from pricing freedom towards more traditional charge controls without undermining incentives for further future investment?
See particularly section 4 below

Question 14: Are there wider concerns relating to good consumer outcomes that may suggest the need for a new regulatory approach to Openreach?

The ACS has concerns around the governance of Openreach. The Equivalence of Access Board (EAB) was set up to be independent and transparent regarding the governance of Openreach – it has failed to be either. Its members are largely from outside the industry and do not have sufficient knowledge of the basis of competition between companies. We would suggest a more effective EAB would include representatives from Non Execs from Openreach's largest customers such as Sky and Vodafone as well as independent Non Execs. We would also argue that there should be a regional element to Openreach's governance along the lines of the Nations and Regions structure – as this is where the largest problems are occurring. Finally, the KPIs that are produced in respect of Openreach should not be complaints based but performance based, in terms of investment, provisioning, fault restorations etc - i.e. about customer experience.

See also section 7 below

Question 17: What do stakeholders think are the greatest risks to continuing effective consumer engagement and empowerment?
See particularly sections 3 and 8 below

Question 19: What options might be considered to address concerns about consumer empowerment at each stage of the decision-making process (access, assess, act)? What more might be required in terms of information provision, switching and measures to help consumers assess the information available to them? What role may Ofcom have to play compared to other stakeholders (including industry)?
See particularly section 1 below

Question 20: Are there examples in competitive or uncompetitive sections of the market where providers are not currently delivering adequate quality of services to consumers? What might be causing such outcomes?
See particularly section 2 below

Question 21: What further options, if any, should Ofcom consider to secure better quality of service in the digital communications sectors?
See particularly sections 1, 2, 6, 7, 8 and 9 below

ACS response to the Culture Media and Sport Committee Inquiry into establishing world class connectivity throughout the UK

Scotland Context

Proper digital connectivity is key both to the well-being of many communities and to Britain's economic future. Looking at the rural economy as a whole, it is these areas which should offer the biggest return on investment in faster broadband, in terms of reduced cost of healthcare, education and other service. Yet many people and businesses are unable to receive the digital access and services they need. The major issue is to find a way to best serve the interests of the last 5%, who typically live in rural areas with low population density. Scotland has the most rural landmass in the UK and, despite the Digital Scotland Superfast Broadband Programme (DSSBP), which will run until early 2018, it is likely that there will still be a large proportion of the last 5% of premises in Scotland, mostly in the Highlands & Islands but also many other areas, with a poor broadband and mobile service. In addition there will be a much larger proportion of Scotland's landmass without mobile broadband coverage. The MNOs have promised to provide data coverage by all 4 networks to 85% of the UK landmass by 2017 – likely to mean coverage for around 70 % of Scotland's landmass[1].

The Scottish Government's (SG)'World Class' connectivity remains a vision, rather than a defined target, and as such, is open to constant revision and interpretation. SG has indicated that 'World-Class 2020' will deliver a longer term plan, developed in parallel with the DSSBP, to ensure Scotland has the right mechanisms, partnerships and commercial models in place to deliver world-class infrastructure in a sustainable way and in partnership with industry.

The SG vision of what a world class digital Scotland will look like is as follows:

- People choosing digital first, having access to digital technology and being capable and confident in its use at home, at work and on the move. They no longer worry about access to the Internet, caps on usage, slow upload or download speeds, patchy mobile coverage or mobile signal dropout.
- Scotland's businesses having the skills and the confidence to exploit digital technologies, an economic environment that encourages digital innovation and supports the creation, growth and digital transformation of businesses. Businesses take advantage of real time data to deliver innovation, greater productivity and provide better services.
- Scotland recognised as being seen as an attractive place for inward investment in digital technologies.
- All appropriate public services being delivered online, with partnerships being encouraged and valued as a source of innovation and service improvement. Healthcare, education, energy supply and provision, transport, and waste and environmental management have been transformed through the adoption of new technologies, information and ubiquitous access.
- The "internet of things" enabling local Government to manage congestion; maximize energy efficiency, enhance public security; allocate scarce resources and support education through remote learning. Data is being collected and turned into information and knowledge that is further transforming service delivery.

[1] http://www.mobilemastinfo.com/2014/mobile-operators-agree-plan-to-boost-coverage-across-the-uk.html

- A future-proofed digital infrastructure supporting any device, anywhere, anytime connectivity across Scotland. This infrastructure is less visible to people, because a majority connect to the internet wirelessly e.g. on mobile devices (tablets, smart phones, etc) or through wireless platforms (e.g. PCs and laptops through home or public space WiFi).[2]

It is clear that these benefits will not be available to people living in Scotland's hard-to-reach areas without significant public investment and long term planning.

The following questions are those posed by the Culture, Media and Sport Inquiry into World Class Connectivity. While the ACS feels that all of our responses here are relevant to the DCR, the numbers after each question are the DCR questions we feel are particularly addressed by our answers here.

1. What role should Government, OFCOM and industry play in extending superfast broadband to hard-to-reach premises? DCR 1, 2, 19 and 21

Both the UK and Scottish governments must continue to play a key role in extending superfast broadband to hard-to-reach areas. The SG is leading the DSSBP, which when combined with existing commercial roll-out plans, is expected to deliver access to fibre broadband to around 85% of premises in 2015/16 and at least 95% of premises by the end of 2017. By August 2015, the DSSBP had passed 365,000 premises (around 50% of the total in Scotland). Some £283m of public sector funding, including contributions from the SG and local authorities, the DCMS (BDUK) and EU has already been committed, alongside £144m from BT.

Government has a responsibility to ensure that in the digital age, the population enjoys equality of access and opportunity to digital services. A more imaginative, but pragmatic, solution is still required to reach the last 5% in Scotland. The ACS believes that Scotland is disproportionately disadvantaged because of geographic and demographic factors. This solution is likely to combine focused public and private sector investment in fibre, mobile and satellite, along with effective, proportionate community engagement and a more specific regulatory approach from Ofcom to recognise the needs of rural communities where there is market failure.

One key Ofcom issue is how it regulates to ensure that the Treasury's desire to maximise income from, for example, the sale of spectrum, does not affect MNO investment in hard-to-reach areas, particularly as the number of MNOs is set to fall, and competition, arguably, along with it.

ACS believes that an outline plan should include the following:

<u>Fixed Infrastructure</u>

- Increasing push of fibre nearer to the premises. - avoiding wasting resources and time by trying to make better use of copper (eg BT Gfast), which ACS believes is simply a means to defer deeper fibre deployment. One way to do this would be to give councils the responsibility of doing a 'fibre audit', as part of any works. If, every time a road was dug up for water or gas works, 'dark fibre' was put in alongside the pipes, it could make a huge difference to the viability of expanding networks. The actual fibre is not expensive, but

[2] http://www.gov.scot/Topics/Economy/digital/Digital-Dialogue/ExploringDigitalDialogue

getting it into the ground is. It is notable that a similar recommendation was recently accepted by the White House[3]

- Compulsory installation of open access fibre in all new buildings, and where reasonable connection of that fibre; in the same way as energy efficiency is now enforced as part of planning regulations.
- Incremental build by stages, but with a commitment to getting there in the end e.g. all schools to be fibre connected by 2020.
- All new public sector buildings to be fibre connected by 2020.

In summary, get more fibre deployed to extend its reach and then keep building on that reach

Mobile Infrastructure

- 4G deployment covering all transport routes, key destinations, 'hot spot' areas, all settlements over 500 population (deployment of more fibre should help reduce barriers to 4G deployment).
- A replacement project for MIP which has failed to deliver any benefit for Scotland in coverage to 'not spot' areas, and whose budget remains unspent.
- Increasing use of small cell technologies to complement macro cells.

See also responses to Q3, 5, 6, 7, 8 and 9 below for more detail.

2. Is there sufficient competition in these markets? If not, how can any market failures best be addressed given the investments already made? DCR 1, 2, 20, 21

Outside of the Central Belt and major cities in Scotland, there is no effective wholesale infrastructure competition for BT and, whilst other players like Virgin Media and City Fibre have announced network expansion plans, these will continue to be centred on commercially viable communities.

One suggestion might be for OFCOM to commission an independent mapping exercise across the hard-to-reach areas to determine what infrastructure actually exists, rather than rely on the hypothesis that, apart from BT, there is not very much. Market failure could then be addressed with the benefit of an evidence-based platform.

The ACS believes that the basis of regulation through the imperative of competition is still a basis for regulation in the UK as a whole, where it is capable of delivering in areas where markets are strong. However in areas where there is market failure due to uneconomic return and where this market failure is likely to continue, (much of Scotland's rural areas) then this should be explicitly recognised. The basis for competition is these areas should be different. Recognising the de facto continuing monopoly of Openreach in these areas, the imperative should be to enable competition at the downstream service level in as open a manner as possible.

There is improving competition between MNOs in hard to reach areas, but 'not spots' are still common and OFCOM coverage obligations, whilst increasingly prescriptive, are still inadequate. An effective solution might be one which, in the short term at least, provides a satisfactory service from

[3] http://arstechnica.com/business/2015/09/broadband-is-a-core-utility-like-electricity-white-house-report-says/

a single supplier, at a reasonable price. ACS does not consider that OFCOM's competition led solution is appropriate for the last 5%. The deal negotiated by the UK government with the MNOs last year to provide 90% coverage of UK premises by all four MNOs by 2017 has effectively abandoned the last 5%. It indicates to MNOs that what is important is ensuring that any investment goes into resolving partial not spots, rather than improving the situation for complete not-spots in very rural areas by getting coverage from at least one provider.

ACS also considers that resolving market failure in the last 5% means engaging local people in the process of finding tailored solutions with bigger players. There needs to be a regulatory requirement on the bigger players to co-operate and facilitate in offering more local, and flexible, solutions to ensure these communities are not left behind.

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? DCR 3, 17

Infrastructure investors cannot obtain an acceptable return on the necessary investment in the last 5% of homes in Scotland. The key issue is the low population density and terrain in rural Scotland and the lack of adequate back-haul to the core network. A typical new build infrastructure model even in economic areas is 10 years, with no cash flow generated until year 5 and no profit generated until year 7. This will never encourage commercial infrastructure deployment in the hard-to-reach areas. As there is no demonstrable commercial case, public sector funding will continue to be necessary and there are competing financial priorities for government at every level.

Scottish Futures Trust (SFT) was appointed to help the Scottish Government deliver its 2020 'World Class' vision and its work includes scoping and modelling digital infrastructure requirements and looking at how efficiently the backhaul to remote areas issue can be addressed, in order to offer downstream services.

A recent HIE (Highlands and Islands Enterprise) survey found that people are increasingly looking to access broadband services through mobile devices, rather than through devices which are primarily home based. This indicates that a change in our approach towards identifying a more 'fixed' mobile based solution could not only be beneficial in developing a more economic investment case for the last 5%, but also be more relevant for all users. As consumers increasingly deploy smart phones and other mobile devices, we should be reviewing where investment is centred, perhaps less on fixed and more on mobile, with more investment in backhaul infrastructure. This also moves the emphasis away from coverage in or directly outside premises to coverage across geographic areas Scotland is unusual in the UK in having large unpopulated areas separating densely populated settlements. Mobile coverage has to include the transport links between these areas, or it is not relevant to those going about their daily lives.

Community Broadband Scotland (CBS) is tasked with playing a significant role in securing connectivity to the areas not included within the current 95% coverage programme. CBS, which is hosted by Highlands and Islands Enterprise, is actively working with 85 communities across Scotland to get access to faster broadband. CBS has a budget of £10m and the additional £18m from BT will help, but it will need more funding and a more supportive and co-ordinated approach from the SG and HIE, in order to succeed.

CBS is building knowledge around what works for local communities and trying to establish a model which can be deployed in similar communities across Scotland, and indeed across the UK. However, it is important that communities are not expected to become technical experts and function as ISPs

using unskilled voluntary labour, while still having to justify that their community network is financially sustainable from a revenue perspective when the reason it is being developed is because of market failure. There are good examples of where it is working well, but these are often down to some individuals in a community with a specific interest or expertise. For very many communities this is simply not an option.

Another dimension to this debate is added by the plans to replace the designated emergency services radio system Airwave with a 4G Emergency Services solution on commercial networks, potentially from 2016.[4] Originally this included plans for a 'lot 4' which would ensure coverage in 'extended areas' ie beyond where the commercial operators were likely to cover. This plan was dropped, based on

- the mobile network operators commitment to provide 98% in building coverage by population
- the mobile network operators commitment to provide 90% geographic coverage
- the mobile infrastructure project, a government initiative to improve rural mobile coverage'

As discussed elsewhere in this paper, the Mobile Infrastructure Project has largely failed in Scotland, and it is becoming clear that the MNOs commitments are based on flawed assessments of required signal levels, and are likely to be reassessed. A new consultation is currently underway looking at how else coverage of these 'extended areas' can be achieved, presumably in light of these issues. [5]

A positive way of looking at this is that the new emergency services solution could provide a driver for reaching much of the last 5%, and certainly many of the geographic areas likely to be left without coverage by the MNOs. The ACS is concerned though that the Home Office and the DCMS do not seem to be working together on this, let alone working with the SG.

4. Given that in practice a Universal Service Obligation could not capture 100% of households, what should a USO for broadband look like? DCR 3,11, 12

The ACS would not accept this as given. In 2011 Parliament put legislation in place to ensure a postal USO which effectively captures 100% of households. The ACS would argue that access to broadband was even then, and is certainly now, more essential to being able to participate as a UK citizen than post. The cost of ensuring a USO for broadband needs to be set against the possible savings which could be gained from being able to assume that every household has broadband. These include online access to government services, to further and higher education, and to tele-healthcare. In general, the savings would be highest in rural areas where transport is most expensive. There are also the economic benefits of stabilising populations in our most fragile communities by making remote working possible.

There is a conflict due to the imperative set by HMT to maximise revenue from spectrum sales. There are two possible approaches to ensuring world class connectivity for the whole of the UK:-

i) sell spectrum with stringent coverage obligations and recognise that that this form of spectrum licence is less valuable and will raise less revenue

or

ii) maximise the revenues from spectrum sales and recognise that public sector intervention with its attendant costs will have to happen.

[4] https://www.gov.uk/government/publications/the-emergency-services-mobile-communications-programme/emergency-services-network

[5] https://www.gov.uk/government/consultations/additional-telecommunications-coverage-for-the-emergency-services-network

This is essentially a question of economics – which approach is the most efficient? It is not possible to continue to maximise revenue and have stringent coverage conditions. The ACS considers that i) is the most economically efficient route, but accepts that the auction process does not lend itself to this approach.

An acceptable and workable broadband coverage solution needs to incorporate urban, rural and very rural communities, as well as different technologies. It is likely to be achieved by a requirement for more demanding minimum provisioning, under fixed and mobile licence obligations, together with perhaps higher levels in urban areas. A practical response is necessary, for example with a basic USO requirement which is linked to the average available broadband rate across the whole of the UK, and is reviewed on a yearly basis. Areas with higher population densities might then have higher minimum provisioning above this floor level. Capacity management metrics could also be included in such a USO for more densely populated areas.

Clearly this approach must not imply permanent disadvantage for some areas, but will allow a functional level of broadband for all **now**, alongside an acceptable lag in reaching the highest levels of connectivity and digital access as these goalposts move.

The last 5% continually suffer from a lack of transparency and a succession of announcements of 'improved' coverage which tend to disguise the lack of success to date in meeting their needs. The ACS welcomes this inquiry, as a means of rebalancing reality over perception and advocates more specific and more demanding regulation in relation to hard to reach areas, under a practical basic USO for all, with additional requirements for different geographic areas.

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

In April 2014, the SG published its World Class 2020 report. This stated that successful broadband development programs generally emanate from a confluence of market forces, government initiatives and user cultures. It looked at Ireland, Sweden, Lithuania, South Korea and Australia.

If government intends to "force" broadband operators to extend their coverage to what they consider commercially non-viable areas, it is useful for the government to also stimulate or otherwise facilitate the emergence of the respective demand. Broadband development has generally called for supra-regulatory initiatives on the government side, as a traditional regulatory approach often results in procedural stalemates.

4 options were outlined to foster access in rural areas with different affordability implications:

- impose strong coverage conditions in the service licenses
- require infrastructure sharing
- provide subsidies to one or more operators by means of a tender
- outright government funding of "middle-mile" or "last-mile" connections in rural or other under-served areas.

To stimulate demand for and take up of digital services, 3 actions were highlighted:

- programmes aimed at increasing adoption and use of internet connectivity
- programmes which seek to transform public-sector institutions, such as schools, hospitals, and government itself, by means of new online systems and practices
- programmes which stimulate business use, in particular online retailing.

Of these, online retailing is very strong in rural areas in the UK, the only threat to it being rising delivery costs to remote areas. There are programmes in place aimed at increasing adoption and use of internet connectivity, and the numbers of users are still rising in all areas of the UK. The focus for the UK and Scottish Governments needs to be on seeking to 'transform public-sector institutions, such as schools, hospitals, and government itself, by means of new online systems and practices'.

Scotland would like to be regarded as a leader in telecare and telehealth, and has made a commitment to engaging the public sector in pursuing a digital agenda. The ACS considers that these national ambitions are more likely to succeed if government recognises the need for a co-ordinated implementation plan, as well as a strategic vision.

6. Should Government be investing more in research and development into finding innovative solutions to meet the communication needs of remote communities? DCR 3, 21

SFT is looking at a range of projects under the Demonstrating Digital work-stream. The purpose of Demonstrating Digital ('DD') is to position Scotland as a country that welcomes and encourages world class innovation in mobile, wireless and fixed technologies as a potential stimulus to economic growth. It is doing this by undertaking pilot projects trialling innovative technologies and alternative sustainable business models. An important element of the DD programme is the provision of technical advice and support, project management consultancy and delivery assurance to a range of partners.

DD focuses on trialling innovative technological solutions, as well as synergies which might arise from, for example, combining the case for improved connectivity in order to drive higher business start ups with the need for improved connectivity to support remote clean energy projects.

SFT is looking at the cost of building sufficient macro and micro cell sites (with adequate power) to cover all of Scotland's hard-to-reach and 'not spots' and is encouraging the SG to commission an academic study of the potential for 5G in rural Scotland.

CBS has a range of web based advice for communities looking to improve local connectivity, though clearly this will not be accessible to those who currently do not have local connectivity. This advice often involves setting up a suitable investment vehicle, local community investment and commitment to take up, local infrastructure mapping, market engagement, demand stimulation and on the other side, access to funding, be that local, national or EU.

The ACS considers that additional, and specific, UK government funding is necessary to support the development of these ideas in partnership with the SG and its agencies. This will not necessarily be Scotland specific funding, but there needs to be an acceptance that in Scotland, UK government additional investment aimed at the last 5% would be best used to support and extend existing Scottish initiatives, rather than try and work in parallel with them on a UK wide basis. The failure of the MIP project is a case in point where project scope and definitions were isolated from local initiatives and outcome objectives – which significantly contributed to its inability to become effective. A more local approach to infrastructure solutions needs to be adopted. There should also be encouragement for such Scottish initiatives to share knowledge with similar initiatives in other parts of the UK.

7. Are BT and other communication companies investing sufficiently themselves in reaching these groups? DCR 3, 14, 21

BT is not investing directly in reaching these groups, but it is noted contributing £144m to the DSSBP. The lack of infrastructure competition in Scotland is highlighted by the fact that BT was the only viable bidder for the DSSBP contracts – indeed it has won all of the DCMS/BDUK contracts across the UK. It assumed take up rates of only 20% in its initial demand analysis, but recently announced a further £18m of investment, because take up rates in these areas were consistently over 30%.

BT has a raft of cash priorities before it gets to investment in infrastructure and the hard-to-reach areas are at the end of that list. As such there is very little voluntary BT or other commercial investment which is likely to deal very effectively with the last 5%. Consequently, the SG is using CBS, SFT and its own digital team to look at ways to generate a "significantly improved" service to these remote communities. It is clear that government has a responsibility to address the problem of inequality of education and opportunity in hard-to-reach areas, caused by the lack of access to digital services. There needs to be a long term solution with hard delivery dates, rather than a best endeavours plan.

A concern is BT's lack of interest in working with rural communities to help themselves. BT is really an organisation which has shown itself incapable of responding flexibly and adequately to approaches by small communities. It is often an issue not just for communications companies, but for other utilities too. An example would be when a very remote community on Skye was having a water main dug from the nearest settlement, across some 14 miles of moorland. They suggested BT could work with Scottish Water to put in fibre at the same time, and even offered to pay for the fibre themselves if it could be installed. They could not find anyone willing to make the required decision to get it done, so a once in a lifetime opportunity was lost.

The ACS noted the announcement of the new BT vision on 22 September, which included promises to '"never say no" to providing faster broadband to communities', claiming this is 'building on its previous record'.[6] However we do not view this as an indication of any real change in BT's strategy in this area. Given its consolidating market dominance, particularly in more remote areas, BT should be regulatorily compelled to develop a `small tailored solutions' dimension to its infrastructure provision, to work in partnership with communities, local authorities and others in fully meeting the needs of the final 5% and in recognition of the obligations they carry as a dominant supplier. The total separation of Openreach and BT would not necessarily lead to any improvement in investment in hard-to-reach areas, but it is worth exploring the investment case based on establishing a pure infrastructure wholesaler offering a bond like return with a near monopoly of infrastructure ownership.

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? DCR 3, 8, 9, 17, 21

Not spots and poor voice, never mind data, services remain commonplace in Scotland. The £150m, DCMS sponsored, Mobile Infrastructure Project ("MIP") has failed in Scotland, because

- The scope of the project meant that all 4 MNOs were intended to be connected to all MIP sites
- The MNOs were supposed to be engaged in delivering 2G voice services to the MIP sites but in reality the economics of deployment meant that the MNOS looked at 2G and 4G combined to make it cost effective for them – thus increasing complexity, timescales and backhaul requirements.

[6] http://www.btplc.com/news/#/pressreleases/bt-ceo-delivers-vision-for-britain-s-digital-future-1222020

- The mobile operator groups will not share backhaul so MBNL and CTIL both had to have backhaul links
- Other public sector interventions, other infrastructure solutions that could assist local communities and other local projects were not considered as part of the scope and hence solutions were not optimal value– this holistic approach is significant in very remote communities.

Essentially the methodology used to determine where investment was justified excluded the vast majority of rural mast sites in Scotland, mainly because the transmission distance to both core MNO networks is too long.

There are essentially two different core mobile networks, offered by the consortia MBNL and CTIL, each supporting two MNOs. Thus, once an area has coverage by one MNO, a second can be added quite cheaply. The costs of adding a third and fourth operator via a second consortium however are likely to be significant, as it requires a completely different network to be extended to that rural area. This is one reason why the MIP project has struggled in very rural areas. Any future initiatives aimed at improving rural coverage should focus on getting two MNOs to offer services in an area, rather than requiring all four. Even if a single MNO can be enabled then this should be considered a successful outcome. In a not spot area, extension of coverage should have a higher priority than ensuring that there is adequate competition. Over time, once an MNO infrastructure exists, the economics of rural coverage will mean that a natural pressure exists which compel MNOs to share infrastructure

Ofcom should consider very carefully how it sets the conditions to encourage the sharing of Radio Access Networks (RAN) in rural areas which would reduce cost and promote competition at the service level.

As part of the recent licence renewal process with OFCOM and the UK Government, the 4 MNOs have committed to invest £5bn in improving their networks, but the widely held view is that this simply amounts to a re-statement of previous investment intent. As discussed above under Q2, the deal negotiated by the UK government with the MNOs in Dec 2014 to provide 90% coverage of UK premises by all four MNOs by 2017 will probably have a negative impact on the last 5% in Scotland. It indicates to MNOs that what is important to government is ensuring that any investment goes into resolving partial not spots, rather than improving the situation for complete notspots in very rural areas. An additional emerging concern is that the signal level chosen as a measure of 'sufficient coverage' in an area to ensure compliance with the agreement appears to be between 5 and 10 times too low. The ACS hopes the government will be robust in its renegotiation of this agreement with the MNOs in light of this.

There is a lack of transparency in the way that mobile coverage is determined. Scotland has huge swathes of land with very low population density, so coverage targets, relative to overall population, are not a good approximation of rural and very rural coverage. The ACS is frequently surprised by OFCOM reports and maps of high customer satisfaction on mobile services in rural areas, where anecdotal evidence and personal experience suggest a less than satisfactory service. It seems likely that the reason for this is simply that expectations of rural customers are far lower than those in urban areas. There is a need for objective data on quality of mobile coverage in rural areas, rather than relying on subjective responses to surveys. We have long supported limited roaming agreements for rural areas, as one practical way to get at least a basic voice service working in remote and rural locations, where neither private sector investment nor public sector intervention, has generated much success, but it is recognised that there may be significant network engineering

and commercial interest hurdles to cross. An alternative approach which would achieve the same outcomes without the technical difficulty for devices would be to encourage/compel sharing of RAN.

The ACS believes that the stage one priority is less about creating competition to drive up quality of service and reduce retail prices and more about ensuring that at least one supplier or a combined supplier initiative ensures the provision of a satisfactory service, which can then be further developed to match the quality enjoyed by the other 95%.

9. How have the existing Government broadband programmes been delivered? DCR 21

See also answers to Q3, Q6 and Q8.

The SG has set its own Digital Agenda under the Step Change initiative with local and specialist government agency support working alongside the UK government through the DCMS / BDUK agencies and the EU. BT has been the primary private sector partner in rolling out the broadband programme. There has been a lot of criticism, not least from the UK Government's Public Accounts Committee, of BT's approach and the DCMS's apparent willingness to support BT, as the sole roll out contractor across the UK, without adequately establishing clear value for money and protection against the risk of abuse of monopoly power.

The perception in Scotland is that there are a range of different broadband initiatives at a Scottish and UK wide level, referred to by a bewildering array of acronyms. A key recommendation would be that there should be a single informed point of contact for anyone who wants to find out how to get improved broadband in their area, allowing the public to easily access the most appropriate information.

At government level too, it would seem sensible that there be a single person who is responsible for having oversight of all broadband related initiatives, including those currently underway by the Home Office, the DCMS and the Scottish Government, maximising synergies and ensuring there is no duplication of effort. The ACS noted the creation of the new Digital Infrastructure Ministerial Taskforce and will monitor its progress in this area with interest.

Ofcom Advisory Committee for Scotland

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