Scottish Affairs Committee
Inquiry into digital connectivity in Scotland

Evidence from Mobile UK

Summary

- Mobile connectivity is now an essential service, with 94% of adults now using a mobile. In policy terms it should be treated on at least an equal footing to fixed connectivity.

- Efforts to extend coverage should focus on places where people live, work and travel, not a general geographic footprint.

- Extending coverage must be balanced with the need to add capacity where there is existing coverage, in response to rising demand for mobile, and the need to lay the groundwork for roll-out of 5G.

- The industry is committed to further development and innovation and would like to engage closely with the respective Governments to create a regulatory and policy framework that stimulates investment.

- Mobile UK supports the Mobile Action Plan for Scotland, but would urge the Scottish Government to push on more aggressively with the individual elements set out in the plan, such as the 4G infill programme and granting access to public assets on the basis set out in the reformed Electronic Communications Code.

- 4G can be considered as a general connectivity option in hard to reach places, where mobile coverage exists and it is uneconomic to deliver fixed coverage.

Mobile UK

Mobile UK is the trade association for the UK's mobile network operators - EE, O2, Three and Vodafone. Our goal is to realise the power of mobile to improve the lives of our customers and the prosperity of the UK as a whole. As mobile increasingly becomes the device of choice for running daily life both at home and at work, customers, quite rightly want better coverage, more capacity and greater capabilities.

Our role is to identify the barriers to progress, seek solutions and work with all relevant parties to bring about change, be they Government, regulators, industry, consumers or citizens more generally.

Introduction

1. Mobile UK welcomes the opportunity to submit evidence to the Scottish Affairs Committee for its inquiry into digital connectivity. This response will concentrate on the <u>mobile</u> aspects of connectivity, although it is worth emphasising that fixed fibre connectivity is also very important to the mobile network operators, as fibre provides (and will increasingly provide) the backhaul network that connects the mobile transmission sites into the core network.

2. Mobile communication is part of the UK's critical infrastructure and is integral to people's lives. At the end of December 2016, there were 92 million mobile connections (including 52.4 million 4G mobile subscriptions)[1]. 94% of the adult population has a mobile phone.

3. 87% of premises in Scotland have indoor telephone call coverage from all four mobile networks and 82% have indoor coverage for mobile data services. (82% in Scotland). These figures are up from 84% and 75% respectively last year.[2]

4. The increase in coverage, capability and capacity of mobile networks has led to an explosion in demand for mobile data. 4G is driving greater volumes of data usage. A total of 156 petabytes was sent over all mobile networks in June 2017, a 47% increase over the previous year. The average volume of data consumed per subscriber now stands at 1.9 gigabytes per month up from 1.3 gigabytes in 2016.[3] The average mobile subscriber use is predicted to grow to 18 gigabytes by 2021.[4]

5. Improved 4G services, and the rollout of 5G has the potential to increase this demand further. It is expected that 5G will form the critical backbone of many of the UK's key services such as e-health, the internet of things and autonomous vehicles. Mobile networks are the modern-day highways and as such are critical to the nation's economic wellbeing.

6. Mobile operators have played a central role in driving this progress by continually investing in their networks, value added services, and subscriber acquisition. In the current cycle mobile operators are investing around £2 billion per annum in new coverage, capacity and capability. In turn, business and consumer customers have shown extraordinary ingenuity in harnessing the power of mobile, to be more creative and productive, to offer new services, and to improve lives.

7. The industry is remains strongly committed to further development and innovation in the UK and wishes to continue engaging with the respective Governments on how best to create a regulatory and policy framework that stimulates investment. The global competition for capital is intense.

8. It is therefore necessary that mobile operators work with reasonable regulatory certainty and that the demands placed on them are properly balanced and prioritised with an understanding that the private capital they invest is finite and must be focussed accordingly.

9. Moreover, they must have flexibility to allocate resources in response to evolving market demand. For example, areas already covered must be maintained and upgraded on a constant

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[1] Ofcom – Communications Market Update, Q4 2016
[2] Ofcom – Connected Nations, 2017
[3] Ofcom – Connected Nations, 2017
[4] CCS Insight, 2017

basis as customers use more mobile data. Thus, a focus on one area of policy, such as geographic coverage, will have implications on other areas such as urban densification. Policy needs to be sophisticated and multifaceted to recognise these competing needs.

What level and standard of mobile coverage does Scotland need to achieve to maximise the economic and social benefits of greater connectivity? To what extent do current plans for the rollout of mobile coverage in Scotland meet these needs?

10. The answer to this question evolves over time and is not uniform across the country. The coverage, data speeds and capacity that would have been acceptable ten years ago, would not be acceptable now. The last ten years have seen an extraordinary change in the market, as geographic footprint has extended, and data speeds and capacity have increased. This has been driven by customers' enthusiastic adoption of smartphones and the upgrading of networks from 2G (second generation) to 3G and now to 4G, where average download speeds are at around 14mbps (megabits per second), and up to 60mbps can regularly be achieved.

11. In Scotland, there are very particular challenges, where the average population density is 65 people per square kilometre[5] (as against 407/sqkm in England). The Highland Council region has a population density of 8 people per square kilometre and 78% of the surface area of the nation has an average population density of less than 17 people per square kilometre (i.e. an average of 4.25 customers for each operator to serve, where the revenue does not as a rule cover the marginal cost of provision, a cost which, as Ofcom confirmed in its Economic Geography study[6], is higher where the local topology is challenging, as it is in many parts of Scotland).

12. As such, macro measurements of geographic coverage in Scotland, particularly when compared to England, have a limited usefulness. The focus of deployment has to be on where people live, work and travel.

13. Ofcom's Connected Nations Report for 2017 (based on June 2017 data), gives the following data for Scotland:

Scotland: Coverage from all 4 operators

	Voice	Data (3G/4G)
Indoor premises	87%	82%
A & B roads	46%	38%
Motorway network	96%	88%

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[5] https://www.nrscotland.gov.uk/statistics-and-data/statistics/statistics-by-theme/population/population-estimates/mid-year-population-estimates/archive/mid-2005-population-estimates-scotland/population-density

[6] https://www.ofcom.org.uk/__data/assets/pdf_file/0029/95708/Economic-Geography-2016.pdf

14. Furthermore, only 1% of premises have no indoor voice coverage from at least one operator (0% urban, and 8% of rural premises)[7]. And, by the end of 2017, O2 has a regulatory target to provide at least 95% 4G indoor coverage in Scotland. Other operators have indicated to Ofcom that they will match this. Around 67% of A & B roads have voice data coverage from at least one operator and EE has a contract to meet road coverage criteria for the Home Office's Emergency Services Mobile Communications Programme (ESMCP), which will also support greater commercial use.

15. All these data points represent considerable improvement over prior years, albeit recognising there is further work to be done.

16. As the question implies, mobile connectivity is important for social and economic benefits. From a national point of view, the main social benefits are: safety, inclusivity (ability for people to access work, public services etc) and efficient delivery of public services. For the purposes of meeting the social purpose of mobile connectivity, Ofcom's benchmark of 95% 90 second call completion and a data service of 2mb/second is appropriate and the focus of further efforts to extend the footprint should be on unserved premises and **road** coverage, as opposed to a more general 'geographic' footprint (with Scotland's large regions of wilderness).

17. (Rail coverage also needs to be addressed, but this will have to be done in conjunction with Network Rail, the Train Operating Companies and the rolling stock manufacturers, because of the absolute necessity to get access to the trackside to deploy mobile infrastructure. This topic is subject to a separate Call For Evidence by DCMS. Mobile UK will forward its response to the Committee by separate cover, very shortly.)

18. With respect to the economic benefits to be derived from extending mobile coverage in Scotland, the picture is more complex, as operators also have to continue to invest in capacity in urban areas in response to the rapidly rising demand (it is no use having a signal, if no capacity sits behind it), to upgrade to 4G and to prepare the groundwork for 5G in due course.

19. It is very important that mobile operators have the freedom and flexibility to deploy infrastructure where demand is greatest, both for the ongoing requirement for 4G capacity but also with 5G, when that is launched. This is not only what customers expect but also what provides the cashflow, scale and momentum that allows operators to build out coverage to a critical mass.

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[7] Ofcom Connected Nations 2017 – Scotland report

What are the barriers (economic, technical, regulatory, other) to delivering improved mobile coverage in Scotland? What steps could be taken overcome these challenges?

20. As identified in its Economic Geography[8] study, Ofcom confirmed that practically all the variations in coverage between urban and rural areas are accounted for by population density (i.e. potential revenue) and topography (height above sea level being a good proxy for cost).

21. Many sites that mobile operators currently deploy are 'loss making' (Across the UK perhaps around 50% and in Scotland, in the remoter regions, heavily loss making), in that the cost of building and operating is not covered by the extra revenue gained, both directly by the extra customers covered and indirectly as a result of operators being able to demonstrate the most comprehensive coverage in a competitive market. The extent of coverage is one of the most important factors considered by customers at the point of sale, even if the customer never intends to visit some of the places covered.

22. But 'loss making' coverage increases operational costs, which in turn is reflected in consumer price, another key sensitivity and so mobile operators have to make a very careful judgement on the competitive advantage of extra coverage v the disadvantage of extra running costs.

23. In addition to the economic barriers, mobile operators can also be faced with very challenging technical barriers in rural areas, where there may be a lack of suitable transmission sites with access to power, backhaul and access tracks. They also face competition from wind turbines, which are not suitable hosts or neighbours, as the movement of the blades interferes with the radio signals.

24. As the fibre network extends further through Scotland, this will go some way to addressing the backhaul issue. And power and access can be addressed if enough money is spent, but this can often be very disproportionate in terms of the extra service delivered.

25. In rural areas, particularly in protected areas, there can also be problems with planning permission. Mobile UK is in discussions with the National Parks Authority and the National Trust in England, with a view to overcoming such difficulties. We would like to extend such agreements to Scotland as soon as we can. Visitors to National Parks and Trust properties expect connectivity and so the hosting organisations must bear their responsibility for providing sites that are suitable for the mobile infrastructure.

26. In urban areas too, there is a continued need to keep reforming the Permitted Development regime for telecommunications apparatus (Section 67). Looking forward, the great bulk of 4G and 5G infrastructure being deployed will be small and unobtrusive and not 'development' in any meaningful sense. With the very large numbers of new installations expected for extra 4G capacity and 5G, already stretched planning departments will be overwhelmed, unless the PD regime is further reformed (e.g. eliminate differences between fixed and mobile

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[8] https://www.ofcom.org.uk/__data/assets/pdf_file/0029/95708/Economic-Geography-2016.pdf

infrastructure; more rights in designated areas where other controls exist, such as listed building consent.)

27. With respect to other operating costs, Mobile UK has welcomed the reform of the Electronic Communications Code, which came into force in December 2017. It is too early to say how or when this will have a downward impact on the compensation that landowners are paid for the use of their land and buildings. The Scottish Government has indicated that they wish to offer public assets at a very 'competitive rate'. However, they should be offering assets on the basis set out in the new Code (i.e. on a compensation basis, comparable to what happens for other essential services – which mobile is now recognised to be – such as electricity pylons or water pipes).

28. If the Scottish Government were to do this, it would help the whole sector move from a 'market based' scheme (which was tenable when mobile was a 'nice to have' service) to a fair compensation for loss and inconvenience based scheme, which is appropriate for essential services with regulatory obligations.

29. The Government could also consider how to use spectrum fees to achieve policy objectives. Ofcom has indicated that it will be looking at how best to auction the 700MHz band. Mobile UK recognises that there needs to be a fair and transparent means to promote spectrum efficiency but it seems a bit contradictory for respective Governments to push for greater coverage, while at the same time charging the industry £250 million pounds per annum in annual licence fees. Mobile UK recommends that consideration should be given to how mobile connectivity objectives could be better achieved with this money.

Is the level of funding for mobile phone coverage in Scotland sufficient given the geographic and demographic challenges Scotland faces?

30. In August 2017, the Scottish Government launched a new 4G Infill Programme designed to deliver coverage to some of the most under-served areas of Scotland. Phase 1 of this programme is expected to enter procurement in early 2018 and will address a limited number of regions where there is currently no mobile coverage. The Scottish Government, Mobile UK understands, intends to invest up to £25 million in this phase, partly drawing on European Regional Development Fund resources. SG is also working in partnership with the Scottish Futures Trust to develop a second, more comprehensive phase of procurement, expected over the next 18 months.

31. Mobile UK understands that the results of the consultation and procurement will be announced in February 2018.

32. The question of whether this is a sufficient level of funding will depend on what the Scottish Government wishes to achieve. But the proposed sites are in underserved areas which would likely be 'loss making' to serve commercially. Given that the wider social and economic

benefits would be captured by the nation as a whole, as opposed to the service provider, it is appropriate to support public policy objectives in this manner.

How well do the different stakeholders (UK Government, the Scottish Government, service providers) work together? Are there ways these relationships could be improved?

33. From the perspective of Mobile UK, the industry has a very good, constructive engagement with both the UK and Scottish Governments.

34. Mobile UK and its members were closely involved with the development of the Mobile Action Plan for Scotland and we very much welcome its contents and programme of work. SG has followed through on a number of the proposed initiatives but would urge that it pushes on more aggressively with the individual elements set out in the plan, such as the 4G infill programme and granting access to public assets on the basis set out in the reformed Electronic Communications Code.

35. Mobile UK and its members also work closely with the UK Government; it would be remiss not to mention, though, that at the time all the MNOs agreed to deploy 90% geographic voice coverage by the end of 2017, the Government agreed to reform the EC Code, to assist with the rollout, make it easier to access public assets and direct Ofcom to consider the incremental costs of roll-out in their level of Annual Licence Fees. The former was delivered 3 days before the end of 2017 and so was of no practical help. We are still working on the 'public asset' point (initial proposals from the Government Property Unit are not based on the reformed ECC and are disappointing.

36. The approach to of the UK Government to mobile, while improving, must follow through more rapidly if the UK is to achieve the goal of being a leading digitally connected economy. Moreover, a much more sophisticated approach to policy is required that joins up the several departments of government, as well as the devolved governments, and the regional and local authorities.

37. If better progress is to be made, the deployment of mobile infrastructure must, in policy terms, be taken every bit as seriously by respective governments as the deployment of fixed digital infrastructure.

What technology options are available to increase connectivity in rural, and other hard to reach, areas of Scotland? What support is needed to develop and deliver these solutions?

38. A 4G connection has an average download speed across the UK of 14mbps and speeds of around 60mbps can regularly be achieved. It thus can provide a very serviceable broadband experience.

39. Mobile UK notes that 6% of households in Scotland struggle to get a fixed broadband speed exceeding 10mbps. Some of those households will perhaps also be among the 5% of households in Scotland that will not have 4G indoor coverage yet. But where there is 4G mobile coverage, it should be regarded as a suitable technology option.

About *Building Mobile Britain*

40. Building Mobile Britain is a campaign created by Mobile UK seeking to work with national and local government, as well as interested industry groups to overcome the challenges we face with expanding the existing mobile networks, while also developing innovative services for customers.

41. For further information – www.buildingmobilebritain.org.uk or #BuildingMobileBritain

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