

Mobile networks and spectrum: Meeting future demand for mobile data

Ofcom's future approach to mobile markets

Welsh Government Response

There can be no doubt that the importance of mobile connectivity continues to grow across Wales as it does across the whole of the UK. The growing demand includes not just traditional voice and data services but also demand for newer technologies that support the internet of things such as LoRaWAN, for example. Residents, businesses and the public sector all stand to benefit from the innovation arising from this consumer appetite.

The issues raised in both papers are inextricably linked and the issues faced in Wales are relevant to both discussion papers. Therefore, the Welsh Government will submit one response to both papers.

Coverage

There appears to be a narrative in both documents that the Shared Rural Network will solve coverage issues and the focus is therefore on increasing capacity through technology upgrades, use of existing spectrum holdings (including pro-active re-farming) and new spectrum.

Whilst the focus on increasing capacity to meet future demand is important there are areas of Wales which do not have good 4G connectivity and for whom the Shared Rural Network is entirely irrelevant. The SRN will leave 20 per cent of the landmass of Wales without good connectivity from all four operators and in mid and west Wales it will be 22 per cent. This connectivity gap still needs to be addressed if residents and businesses are to adopt and benefit from mobile connectivity and if the public sector is going to be able to develop new services that take advantage of new technologies, particularly in ultra-rural areas that may suffer power outages post PSTN switch off rendering even emergency calls impossible.

At the macro level, the mobile market in the UK is competitive bringing many advantages for the majority of consumers, including driving down prices and driving up innovation. However, it is clear that competition has not delivered robust connectivity options in many rural and remote areas. The Future Approach to Markets paper states that:

While competition has helped drive network investment and deliver widespread mobile networks, there have been limited commercial incentives to roll out networks in some rural areas...

The Networks and Spectrum paper sets out the potential for mobile connectivity:

In the years ahead, we expect network quality to become more important as dependence on mobile internet access grows, and people expect faster, more reliable connections on the move, not just at home.

...connected vehicles will likely increasingly use mobile networks to access things like real-time HD maps, traffic or hazard warnings, and entertainment while travelling. Looking further forwards, consumers, businesses and public services may make greater use of mobile networks on the move; healthcare workers may run diagnostics and upload information from remote locations for real-time processing at a hospital, while engineers may receive real-time support or information via augmented reality headsets.

Ensuring equity of coverage will be essential to ensure equity of access to new uses and new services and to ensure that people get the faster and more reliable connections they need while on the move. Coverage gaps cannot be tolerated and must be eradicated across all mobile networks if we are going to realise this fully digital future.

Where competition and the market has failed, and where planned public sector interventions will not reach 100% geographic penetration, there is a need to do more. The economic and engineering challenges of deploying infrastructure in rural and remote areas are well understood, however, there are approaches that should be considered to further coverage beyond the SRN commitments. Regulation can provide a key tool to addressing continued poor or no mobile connectivity in rural and remote areas alongside the other levers that the Welsh and UK Governments can bring to bear.

Some form of financial incentive should be considered to drive connectivity further into unserved and underserved areas. One such inducement could be a reduction in the amount paid for either new spectrum through the auction process or the annual licence fee in return for a commitment to extending coverage in rural and remote areas. This would mean bidders not only bidding on cost but also on coverage commitments. Whether through the auction process or annual license fee progress against coverage in these areas would need to be tracked to ensure that any commitments made are delivered.

Taking this approach to its conclusion would require a fundamental change to the basis of spectrum auctions or the annual license fee but could precipitate a larger coverage uplift across the UK and establish equity of coverage. This would provide a real financial investment to deploy in rural and remote areas.

Turning to regulation more broadly, at the moment there is a one size fits all approach to regulating mobile markets across the UK. Whilst regulation based on competition is appropriate for the majority of the country those areas where competition and the market has not provided mobile connectivity need a different approach to encourage further deployment.

A geographically differentiated approach to regulation should be considered, regulating different areas of the country in different ways. While this will require further consideration in mobile markets a precedent has already been set for this approach through the changes to regulation resulting from the Wholesale Fixed Telecoms Market Review 2021-26.

Further discussions between the Welsh Government and Ofcom would be welcome to explore how a geographically differentiated approach to regulation can help rural and remote parts of Wales and similar areas across the UK.

Spectrum

Growing numbers of premises in rural areas rely on 4G for home broadband connections, as stated in the Future Approach to Markets paper:

There may also be some increase in the use of mobile services to provide internet access in the home via Fixed Wireless Access (FWA). We expect to continue to see some use of FWA in fixed broadband not-spots, but also in households that prefer the shorter contracts available with FWA compared to many broadband connections. More generally, however, use of FWA is likely to be focused on locations where fixed broadband is not available (for example, in more rural areas where securing a connection would be prohibitively expensive) and where there is a good enough mobile signal.

This is already being witnessed in applications to our Access Broadband Cymru scheme where 4G broadband connectivity is now the dominant technology deployed by suppliers offering solutions to the applicants. To underpin this there needs to be a focus on how existing spectrum frequencies can be used, particularly in rural areas, to support access to fast and reliable mobile broadband at home. In particular by ensuring routine access to higher frequency bands (bands 1, 3 and 7) that support high speed broadband.

It would also be useful to understand how successful shared access licences have been in supporting alternative mobile providers address notspots in rural areas and if appropriate how the licenses could be improved to encourage more providers, including new entrants, to provide connectivity.

2G and 3G sunseting

The Future Approach to Markets paper states that:

Some MNOs have announced plans to switch off their 3G networks, and they have confirmed to the Government that they do not intend to offer 2G and 3G mobile networks past 2033 at the latest. Switching off these networks may impact customers who have not upgraded their 2G/3G devices yet, as well as services that currently rely on these legacy technologies. It is therefore important that, as MNOs start to switch off these networks, adequate mitigation is in place to minimise the impact on customers. Ofcom will work with mobile providers to support the process and help make sure issues are identified and addressed with the aim of protecting customers from harm and minimising disruption.

This is welcome. The sunseting of 2G and 3G needs to be carefully planned and managed. There are still consumers, business and monitoring uses that rely on 2G and 3G connectivity. For example, consumers in rural areas that do not have access to 4G and so depend on earlier generations to stay connected for voice and text

services, withdrawing 2G in particular would mean they are less connected than they are now.

5G

The Future Approach to Markets paper states:

MNOs are likely to continue to focus their 5G deployments of greater additional capacity (including 5G SA) in higher demand areas (for example, more urban locations), including by deploying higher frequency spectrum in those areas. They will therefore be well placed to offer services that require very high speeds and the other capabilities of 5G SA in such areas. In contrast, they may not have commercial incentives to offer such services in areas where low frequency spectrum is being relied on. There may therefore be some geographical variation in customer experience, with those in low demand areas potentially not experiencing the same very high speeds and responsiveness as in high demand areas.

Ensuring access to high frequency spectrum 5G coverage will need to be carefully considered if geographical variation is to be minimised. For example popular tourism destinations must also be taken into account as some areas populations significantly increase and no longer just in the six week peak season.

While it is recognised that access to the spectrum in all areas is probably unrealistic given the properties of the spectrum smaller populations such as market towns, agricultural and industrial sites should be addressed. This could form part of the incentive and geographical differentiated approaches set out above.