

Future Telecoms Infrastructure Review

Introduction

Broadway is pleased to offer its thoughts on the Future Telecoms Infrastructure Review (FTIR). These are consistent with, and build on, its previous submissions to the USO Consultation and Scottish Affairs Select Committee, included with this paper.

The Issue

While the UK enjoys a leadership role in the defining of technical standards, in the practical business of spectrum-sharing, and in the development of applications, it is only a minor player in the underlying technology of 5G. In the absence of a significant exportable manufacturing or design capability, the UK needs a 'Big Idea' to project to the world, to demonstrate its leadership in policy thinking, at least comparable to the CBRS development in the US – which Big Idea politicians should have the courage and imagination to embrace in a post-Brexit world (otherwise, what's the point?). In the meantime, a 30-year market failure in rural mobile and broadband can be fixed.

The Idea – joined up thinking on spectrum

The development of a mechanism and process to ensure the most efficient allocation and use of spectrum – the world's most valuable naturally renewable resource – could be the UK's gift to the world.

Worldwide, it is widely accepted that spectrum is not efficiently allocated. The past and current UK practice of auctioning to the highest bidder may serve to maximise proceeds to HM Treasury in the short term, but it also has the effect of stifling investment in innovation and coverage, suppressing economic activity, raising artificial barriers to entry, and ultimately reducing proceeds to the Treasury in the longer term. The process of allocation and sharing is also cumbersome, wasteful of spectrum, and administratively inefficient. The UK can do better than this – and, having virtually invented (certainly perfected) the auction process back in 2000, the UK owes the world something better.

Given 5G's requirement for large swathes of new spectrum, and the continuing economic and opportunity cost represented by the gaps in 4G geographic coverage, there is a clear case for a more efficient and market- and needs-responsive approach to spectrum allocation.

Broadway believes that the technology exists (spectrum sensing and adaptive radio, with distributed ledger/blockchain), to allow a more efficient allocation and sharing of spectrum in rural areas, allowing the development of a range of potential regulatory and commercial models, thereby addressing the market failure that has afflicted rural areas since the inception of mobile 30 years ago. For example:

Use it or lose it For existing and future allocations of spectrum, national MNOs could be required to make unused rural spectrum available for third party use – for example, by requiring them to sub-lease or to share the under-utilised rural segments, on a 'use it or share it or lose it' basis. Broadway's own discussions with operators suggest that they are open to the idea of cooperative use of rural spectrum, and that there could be appetite for a 'nudge' in this direction as long as the move is coordinated at scale. Government has a role here.

Regional auctions Alternatively, and for future auctions, rural spectrum could be subject to a separate auction to that of 'urban' spectrum, as proposed by many sensible commentators, and the focus of the forthcoming paper from UKWISPA/INCA, written by Plum Consulting – which we would expect to be thorough in its analysis and convincing in its arguments.

National Resource Alternatively, and even more interestingly, a National Spectrum Trust could be established, with 5G spectrum bands in rural areas 'gifted' to the Trust. Potentially

accessing the Digital Infrastructure Fund and other institutional sources, or even becoming the vehicle for a new 'Digital Savings Scheme', the Trust would then oversee the development of infrastructure and use of spectrum on a neutral hosted basis, with wholesale capacity and services sold to mobile operators and WISPs at wholesale prices benchmarked against standard inter-operator and MVNO rates.

The challenges are obvious – but so are potential solutions.

- A good starting point for defining 'rural' could simply be those areas not currently served by at least two competing mobile networks. Ofcom has the maps.
- Equally, the Trust could adopt the Ofcom 'Designated Provider' approach to developing the infrastructure – and indeed, it could absorb the Broadband USO obligation into the 'neutral hosted' function, given the significant overlap in infrastructure needs. The benefits are clear of a joined-up approach to spectrum allocation and delivering world-class connectivity (at a minimum 30Mbps) to 100% of the population. This is further discussed in Broadway's USO submission.
- The incentive to meet coverage obligations could be embedded in the principle that the Designated Provider receives only half of the 5G rural spectrum available, with the remainder remaining freely available on a 'first come' basis, analogous to the current TV WhiteSpace regime.
- Incumbent mobile operators would be natural beneficiaries of a neutral hosted regime, being relieved of the regulatory and commercial obligation to build uneconomic networks in low population density areas, while remaining free to compete on a territory-by-territory basis.

Clearly, this approach represents a significant departure from the conventional auction approach, and resistance can be expected from within Ofcom to these proposals: indeed, Ofcom's recent Stakeholder Briefing session (25th May) on the forthcoming 700MHz and 3.6-3.8GHz auction made it clear the adherence by senior officials to the conventional national auction approach.

But if institutional objections can be overcome, this new approach could provide the model for the distribution of spectrum on an optimally efficient basis, to the benefit of all, as well as stimulating the development of a highly exportable expertise.

While radio spectrum is a perpetually renewable resource, it is also a wasting asset – for every day that a square kilometre of spectrum is not used for delivering rural broadband or 4G services, there is an opportunity cost of economic inactivity, inefficient delivery of public services, and social exclusion. The UK's digital future is too important for this, and Government should intervene.

Conclusion

Broadway strongly believes that, with the imminent allocation of 5G spectrum, the opportunity exists right now for Government to make a significant difference to the direction of spectrum and communications policy.

The current 5G Pilot programme, of which Broadway is proud to be a part, is stimulating cooperative development activity between a broad range of academic institutions, large corporates and SMEs, and demonstrates what can be done by Government taking an enabling rather than directly interventionist role.

With respect to the national strategic resource of spectrum, however, a more direct role is required, and Broadway believes the allocation of all 5G spectrum bands in rural areas on a controlled 'free' basis would create a new regulatory and commercial paradigm that would transform the digital landscape, both in the UK and worldwide.