

General Comments:

I cannot recall a time of such uncertainty for the industry over where the UK mobile infrastructure and industry is likely to finish up 10 years from now. That is an odd place for an infrastructure industry (or a Country) to find itself as it crosses the threshold of the next big investment cycle in a new generation of mobile technologies. In the absence of a national consensus around a concrete long term ambition for the UK's mobile radio network infrastructure it makes it particularly difficult to assess the impact of the various far reaching Ofcom proposals.

That said I have been in the centre of or around the edge of the three previous big mobile radio investment cycles over the past 30 years and the observations below are based upon my experience. They are put at the disposal of Ofcom's and other interested parties in the hope that they might offer some relevant insights and a tentative input to this important debate.

Response to Question 5.1: Do you agree that national wholesalers need a reasonable overall portfolio of spectrum to be credible providers of higher quality data services? In particular, do you agree that national wholesalers need some sub-1 GHz in order credibly to be able to offer higher quality data services? Please state the reasons for your views.:

Two elements appear to be missing in the Consultation Document analysis in Annex 6. The first is a well defined time-frame. The second is the state of industrialisation of the different mobile spectrum under 1 GHz.

The 900 MHz spectrum can be used today for mobile broadband and already is (by O2) whereas the 800 MHz, yet to be auctioned, can have no impact on the competitive market until at least 2015/2016.

This very late date arises because it will be several years before mobiles with 800MHz LTE arrive in numbers, then become affordable and then even longer for the numbers to build up within the UK installed base to significantly impact the competitive landscape.

This poses the inevitable question...what will happen in the meantime?

In a competitive consumer market timing is crucial and if one solution will take as long as 4-5 years to have a significant impact...the market will fill the gap in other ways. There is already evidence for this. All smart phones now on the market have WiFi built in that provides for quality indoor coverage at high data speeds and within 18 months this class of mobile phone is on track to represent 70% of all new mobile phones sold. Over the same time period not a single LTE mobile phone at 800 MHz will be sold in the UK. Mobile operators are also already bringing Femto cells to market to deal with the indoor coverage issues and mobile phones with 2.6 GHz incorporated are likely to arrive in quantity on the UK market (able to work with these Femto Cells) ahead of those with 800 MHz capability.

I address the consequence of this observation in the response to Q5.5.

Question 5.2: Do you agree there is a material risk of a significant reduction in the competitive pressures, at least to provide higher quality data services, in retail and wholesale markets without measures in the auction to promote competition? Please state the reasons for your views.:

See comments to Q5.1

Question 5.5: Do you agree that the specific measures we propose to take to ensure there are at least four holders of such spectrum portfolios are appropriate and proportionate?:

Ofcom make the technical case in their Annex of the advantages of LTE in a 20MHz wide channel at 800MHz. However the remedy Ofcom are proposing creates a balance of probabilities that nobody will emerge from the auction with a 20 MHz wide channel and since there is only 30 MHz of paired spectrum to start with, it flows from simple arithmetic that if all the current mobile operators leave the auction with some 800MHz spectrum then at least one (or more) will emerge with only a 5 MHz channel.

It is a matter of technical fact that LTE in a 5MHz wide channel will not deliver the competitive benefits identified as necessary by Ofcom. The minimum viable channel width for LTE is 10 MHz.

The consequence of this is that “3” and/or EE leaves the spectrum auction with only 5 MHz of 800 MHz spectrum and if the impact of that spectrum on the competitive landscape will take 4-5 years to materialise... the proposed floors and caps will clearly not deliver anything useful for the consumer or the country.

This situation is arising due to there being too many contradictory objectives that Ofcom is being asked to address within such a very limited amount of accessible sub-1GHz spectrum. This is overly constricting the remedy that Ofcom can put forward to a sub-critical intervention.

My experience is that sub-critical interventions always lead to an inferior outcome compared with a full intervention or a full non-intervention.

Question 5.6: Given the measures we propose to take to ensure four holders of spectrum portfolios sufficient credibly to provide higher speed data services, do you agree that it would not be appropriate or proportionate to introduce a regulated access condition into the mobile spectrum licences to be awarded in the combined award?:

The UK has fallen behind the rest of the world in the roll out of advanced mobile LTE networks as a result of a round of litigation between Ofcom and the industry. My analysis is that this has been partly due to a misalignment between the duties and powers of Ofcom...which leads to legal uncertainty...and all the wasted time and public money flowing from recourse to the Courts to clarify this uncertainty.

The conditions in the UK mobile market in 5 years from now are almost certainly going to be quite different from those today and yet the spectrum licences will run for at least 25 years.

Since far reaching changes in the market are inevitable Ofcom may be wise to reconsider its view not to take reserve (dormant) powers now to introduce regulated access to the 800 MHz spectrum.

Even if Ofcom fails to anticipate the precise circumstance of using those powers (a point well made in the consultation document)...to have licensees under notice at the time of purchase of such an eventuality will provide a considerable stronger starting off point to make licence changes than if no such notice was ever given at the outset. In fact raising the issue of dormant powers and rejecting it in the consultation document may even have slightly weakened Ofcom's legal position to make such a later change using other powers.

It is very unlikely in a four (or even three) player RAN market that such reserve powers will act as a brake on investment as feared by Ofcom. Rolling out an 800 MHz LTE network over an existing base station infrastructure is fairly low risk and rapid payback (relative to the alternative of adding more base stations). When this is set against the background of a voracious growing market demand for new mobile data capacity it makes the likelihood that taking such reserve powers might limit investment or innovation extremely remote.

Far more damaging to the consumer interest and more likely to happen is for Ofcom to find itself short of the powers it needs to address unforeseen market changes down the track and having to await primary legislation to get new powers.

Ofcom owes it to itself and the country to have the right tools for the job in its locker for maintaining a competitive market and I would urge Ofcom not to forego this opportunity to take reserve powers to mandate regulated access to the 800 MHz spectrum.

Question 5.7: Do you consider that we should take measures to design the auction to assist low-power shared use of 2.6 GHz? If so, what specific measures do you consider we should take?:

Ofcom are introducing a welcome new idea of the low power 2.6 GHz channel but there is a debate to be had on whether the right approach is to fully liberalise one 2.6 GHz channel or to go for the more restrictive approach in the consultation document. The need for the more restrictive approach flows naturally from the regulated power level limit Ofcom has in mind. That itself perhaps should be more explicitly debated.

It is my view that Femto Cells are unlikely to reach the ubiquity of WiFi without a less restrictive approach and WiFi itself has some limitations that Femto Cells could more readily address.

Why this merits debate now is that we are rapidly approaching a key juncture for 5th generation urban super fast mobile networks...and the future ubiquity of Femto Cells is likely to be one of the determining factors in the UK's ability to lead in the effective urban deployment of these super-fast dense mobile broadband networks.

Question 6.1: Do you have any comments on the proposal to include in one of the 800 MHz licences an obligation to serve by the end of 2017 an area in which 95% of the UK population lives, while providing a sustained downlink speed of 2Mbps with a 90% probability of indoor reception? Do you think there is another way of specifying a coverage obligation that would be preferable?:

The case for taking rural Britain into the mobile broadband age is not being given enough priority by Ofcom in the consultation document. Better mobile broadband coverage can contribute to the UK's agricultural industry (better efficiency), improved facilities for the rural tourism industry (rural economic growth), reduction of rural unemployment and less pressure on the rural young to

gravitate to the cities. The need is for around 2000 new base stations at a cost of around £300m (assuming £150k per base station average) and that such a level of resource is proportionate to the national benefits.

The current Ofcom proposal for a coverage obligation of 95% on one of the 800 MHz licences is unlikely to deliver any new base stations. It is therefore flying far too low on the ambition altimeter. However taking the consultation document in the round Ofcom appear heading in the right direction on the coverage issue and particularly with their novel idea for dealing with coverage “not spots”. But no details are given and it does not appear to be connected in any specific way to extending the reach of mobile broadband. It is therefore difficult to offer a view on whether a better coverage obligation is essential or not without knowing what will emerge from the “reduced licence fee” approach that Ofcom still has under study for the coverage “not spots”.

Would it not make sense for a more holistic approach to be put in hand now that a looks at the totality of the coverage shortcomings and apportions the solutions across the various mechanisms, including a more ambitious coverage obligation, licence fee abatement and directed subsidy?

The second document mentioned in the consultation document for later this year provides a timely vehicle for this more comprehensive approach.

Question 6.2: We would welcome views and evidence on the costs and benefits of imposing an additional coverage obligation focussed on particular geographical areas, and if such an obligation were to be imposed what might be the appropriate specification of geographic areas?:

See comments to Q6.1

Question 6.3: Do you have any comments or evidence on whether an additional obligation should be imposed to require coverage on specific roads?:

See comments to Q6.1

Question 6.4: Do you have any comments on our proposal not to use the combined award to address existing not-spots?:

See comments to Q6.1

Question 6.5: Do you have any comments on our proposal not to impose ‘use it or sell it’ obligations but to consider including an additional power to revoke during the initial term of the licences?:

The approach Ofcom is proposing here is very much to be welcomed but perhaps there is some scope for refinement.

Why this issue is of critical importance is that the data speed performance gap between urban and rural mobile networks is set to become enormous over the coming decade - and it will only be plentiful spectrum in deep rural areas that can begin to close that gap. So freeing up spectrum in rural areas that would otherwise stand idle is of national importance.

However rather than a revocation of the licence (enforced sale) perhaps the “empty house” model in

the housing market offers a slightly better approach. In the domestic housing market if a house is left empty for any length of time the Local Authority has powers to force a rented occupancy but the owner still retains their property rights.

So rather a “use it or sell it”; an approach Ofcom might want to consider is along the line “use it within a reasonable time or rent it out voluntarily or Ofcom will introduce a tenant occupant at a market rent for a term period”.

Question 7.2: Do you have any comments on the proposal to amend the spectrum Trading Regulations to apply to the auctioned licences in the 800 MHz and 2.6 GHz bands, to include a competition check before we consent to a spectrum trade of mobile spectrum and not to allow transfers that would increase the number of 2.6 GHz low-power licensees?:

It appears unnecessary. Spectrum trading is an unreal concept for internationally harmonised mobile spectrum. Once a network and customer base gets attached to such spectrum...it is not the spectrum that gets traded but the business attached to it.

Question 10.1: Do you have any comments on our proposal to use 800 MHz price information as derived from the auction to estimate the full market value of 900 MHz spectrum?:

I do worry whether the approach being taken to value the 900 and 1800 MHz spectrum is not forcing Vodafone and O2 to pay twice for the economic differential between 900 and 1800 MHz spectrum.

Spectrum and base station density are interchangeable resources. This was used by Oftel to redress the economic disadvantage the new 1800 MHz operators had relative to the established 900 MHz operators in the 90's. The mechanisms used was differential termination rates over a number of years. Through this regulatory means Vodafone and O2 effectively subsidised the larger number of base stations that Orange and T-Mobile needed to deliver competitive coverage at 1800 MHz compared to 900 MHz.

That “better base station” density legacy is a part of today's mobile industry landscape.

With the proposed valuation method Vodafone and O2 will pay more per MHz for their 900 MHz spectrum than EE for their 1800 MHz spectrum...is there not at least an element of Vodafone and O2 being asked to pay twice when the partially subsidised better base station legacy EE has in place is taken into account ?

I point this out only as a matter of natural justice.

Question 10.2: Do you have any comments on our proposal to use an average of 800 MHz and 2.6 GHz price information as derived from the auction to estimate the full market value of 1800 MHz spectrum?:

See comments to Q10.1