Virgin Media's response to Ofcom's Consultation on future use of the 700 MHz band - Cost-benefit analysis of changing its use to mobile services

28th August 2014

(Confidential Information highlighted in grey text)

Introduction

Ofcom has already set out its mobile data strategy, and the 700MHz band potentially forms a part of this wider approach to facilitating the increased demand for data in the medium term.

Although this consultation is primarily concerned with assessing whether there is a cost benefit to utilising the 700MHz band for mobile broadband, it raises some key issues in terms of what have been identified as material considerations in assessing a change of use.

Virgin Media therefore welcomes this opportunity to make some general comments on the approach proposed by Ofcom. Rather than answer each specific consultation question, we have focussed our comments on Ofcom's assessment of the potential effect of interference by LTE. We consider our comments both address issues raised directly in this consultation, and also indirect issues which are equally important.

Potential Interference from LTE

The Analysis Mason report into data growth suggests that current offload, while assessed at 60% of mobile traffic, will grow to 77% in 2030[1]. The volume of traffic (before offload) is predicted to grow from 104 PB/mth in 2014 to 4938 PB/mth in 2030.

We note that the figures used in this report are not aligned with other data (such as the Real Wireless report, also commissioned for this consultation, and other Ofcom documents, such as the recent PSSR consultation where a figure of 81% for current off-load was used).

Additionally, there has been recent debate over the likely growth of mobile data usage, with the ITU remaining uncertain as to future trends[2].

Therefore, it would be inappropriate to overly rely on specific forecast figures as part of a CBA, and Ofcom needs to be mindful of this uncertainty.

However, the point demonstrated by the various forecasted trends is clear, demonstrating the increasing importance of the ability to offload significant amounts of mobile traffic to fixed line Wi-Fi networks. Therefore, the incentives for investment in such networks must be maintained. In the context of a multi-use Cable network, the effects of a change of use of band must be considered by Ofcom to ensure that the impact to Cable services is minimised and therefore the investment incentives in relation to the underlying network are not adversely affected. If this impact was not adequately considered, there would be a considerable risk that in freeing up more spectrum for mobile broadband, the ability to carry mobile data could actually diminish (given the reliance on Wi-Fi offload).

Absence of Cable from CBA

From Paragraph 6.18 onwards, Ofcom acknowledges the issue of potential interference from LTE to DTT Receivers. Ofcom suggests that the level of interference should be small, but has accounted for it in the overall CBA. Although this section of the document is focussed on DTT, there is no mention, in this section,

[1] Paragraph 4.7
[2] See for example https://tech.ebu.ch/news/itu-now-uncertain-about-mobile-spectrum-14jul14

of the potential for similar interference on other platforms, such as Cable, and the potential wider effect of degradation of Cable television signals and other Cable services.

Future Proofing of Equipment

At Paragraph 6.33 it is noted that Ofcom's policy is to seek equipment to be "future proofed". It is explained, in the context of DTT interference, that this means both receiver equipment improvements and also improving out of band mobile emissions.

Again, this is relevant to the Cable industry, and certainly it remains important for out of band emissions to be regulated in so far as they could otherwise have a disruptive effect on other technologies.

With regard to equipment improvements, Virgin Media continually develops its user equipment to offer the best experience to its customers. However, Ofcom needs to take account of equipment lifecycles and the potential for significant numbers of customers retaining, for example, routers or set top boxes for considerable periods of time, even after new versions of the equipment have been launched.

Magnitude of Assessed Interference

Annex 10 addresses the issue of interference from LTE signals in relation to DTT. Ofcom relies on data gathered from the roll out of 800MHz for the use of LTE transmissions, and notes:

> "Experience to date suggests that the actual level of interference is extremely limited. The total number of confirmed cases of interference at the end of March 2014 was just over 1,500[116]. If the current level of interference cases per mast continues, the likely total number of cases may be only 20,000."[3]

Virgin Media considers that Ofcom needs to be cautious in extrapolating current results from the use of the 800MHz band, as there remains significant roll out of LTE to occur (noting that current deployments predominantly rely on the 1800MHz band and 2.6GHz band, and that roll out has been focussed on city centre locations). Therefore, in the early stages of roll out, a large number of interference cases would not be expected, nor can it be said to necessarily be reflective of the eventual position. For Ofcom to use current confirmed cases to determine a total number of cases appears to underestimate the risk.

Ofcom specifically deals with the potential for interference to Cable in paragraph A10.38 et seq. However, there is little discussion other than to say that the similar concern in relation to the 800MHz band showed that LTE interference was "not likely to be a material problem"[4], and that therefore there was, by analogy, a low likelihood of there being a problem. Ofcom also noted that the replacement cycle for CPE, combined with the likely timescales should mean affected equipment would be replaced in any event.

In addition to the comments regarding the limited progress of 4G LTE roll out in the 800MHz band to date.

[3] Paragraph A10.16
[4] Paragraph A10.49

European Harmonisation

Whilst this consultation is primarily focussed on the cost benefit analysis of using the 700MHz band for mobile broadband, the issue of whether Cable services are impacted by the proposed change of use remains a live and important issue.

This is being considered in a wider European context, with the European Commission requiring CEPT to develop technical coexistence conditions for 700MHz, specifically emphasising the need to indicate the potential impact of the deliverables of this mandate on non-radio end-user equipment such as cable receivers.

This work remains ongoing; the CEPT work is still to be finalised, and its draft report specifically did not include comment on Cable receivers as it cannot fulfil that aspect of the brief, stating that this needs to be undertaken by ETSI / CENELEC.

ETSI has undertaken some work in this regard, and this now stands to be considered by the European Commission.

Therefore, the extent of this issue, having been identified as important by the mandate, remains to be determined, and it is vital that Ofcom does not set in train UK regulation without knowing the true extent of Cable interference and the position of the European Commission. Indeed, the position of the European Commission will help inform NRAs of how to approach this matter.

Further, the European perspective is vital not only in determining the extent of 700MHz interference, but also in providing additional information in relation to the experience of 800MHz LTE, which is more established in some Member States than the UK.

As Ofcom notes at paragraph 3.2

> "Ofcom must also have regard to the rights and obligations of the UK as a matter of the UK's international obligations – for instance, in relation to spectrum arrangements with our international neighbours."

In this context it is important to consider the wider approach to potential interference with Cable, given that this work is actively being undertaken in Europe.

Further Work

Virgin Media is encouraged by Ofcom's commitment to undertake further work in connection with potential interference from mobile in the 700MHz band, but remains concerned that Ofcom is failing fully to consider the potential risk. In this regard it is vital that Ofcom continues to be open about the type of work envisaged in regard to interference from the 700MHz band, and how it intends to develop plans and policy in a manner consistent with the wider EU community, especially in light of ongoing work.

Virgin Media would welcome discussion in this regard, both in relation to the potential for direct interference from LTE and also any potential knock-on effect of interference from DTT as a result of revised arrangements for the use of spectrum.

In particular, although the issue of interference with DTT is discussed in this document, the criteria deemed relevant to DTT equipment is not always directly relevant to Cable systems. For example, the issue of interference at the aerial, situated at a notional height of 10m from the ground is specific to DTT. Further, the assumption that as Base Station equipment is situated at the top of the band (and therefore, away from the adjacent DTT band), the predominant source of interference will be from UE, is an assumption that cannot automatically be applied to Cable.

Conclusion

Virgin Media understands that this consultation is focussed on a high level assessment of the costs and benefits of using the 700 MHz band for mobile broadband, but it remains vital that Ofcom ensures that the Cable industry is fully considered as this project goes forward, not least, as noted in the introduction, due to its importance in sustaining the increased appetite for mobile data within the UK, with the provision of effective Wi-Fi offload capability. The ability to invest in our network rests upon the continued ability to offer the comprehensive range of services to our customers; to handicap the provision of one service would inevitably impact on Virgin Media's ability to invest in its other services.

Virgin Media
29 August 2014