Annex 20 – potential consumer loss from Ofcom's options.

During the EC's investigation into the merger of Three and O2, Ofcom expressed serious concerns about the potential loss of Three as a 'key disruptor' that was keeping industry margins in check. Ofcom published a cross-country econometric analysis of the effect of disruptive firms on mobile pricing in March 2016. Comparing mobile prices across 25 countries between 2010 and 2015, Ofcom found that:

- Prices were between 7.3% and 9.2% lower in countries where there are a greater number of players;
- Prices were 10.7% to 12.4% lower in countries where a disruptive player was present; and
- Prices could be between 17.2% and 20.5% lower on average in countries where there were four or more mobile operators AND a disruptive firm in the market.[1]

Ofcom has recognised that access to spectrum has kindled mobile competition in the UK, and that innovation that has accompanied these lower prices; it has highlighted that "Three, as a challenger brand, introduced 'all you can eat' data tariffs and use of Skype voice over IP (VoIP) services, and scrapped roaming charges from a number of countries."[2]

In the context of Three's acquisition of O2, Three disputed Ofcom's characterisation of its role as "key market disruptor". However, Ofcom should consider the impact that a spectrum imbalance following the PSSR auction would have on Three's ability to act in the role that Ofcom has assigned to it – i.e. a "key market disruptor". [✂]

The consumer impact of a reduction in competitive intensity could be very significant. Ofcom has previously estimated that reduced competitive intensity leading a 1% loss of consumer surplus would have a net present value of £1.1bn if sustained over five years.[3] However, given the scale of the competition benefits described above, the impact on prices would likely be much higher than 1%.

Based on Ofcom's econometric analysis above, it is reasonable to assume that:

[1] Ofcom, *A cross-country econometric analysis of the effect of disruptive firms on mobile pricing,* research document, published 15 March 2016, found at: https://www.ofcom.org.uk/__data/assets/pdf_file/0019/74107/research_document.pdf
[2] Ofcom Strategic Review of Digital Telecoms, Discussion document, paragraph 1.4
[3] 4G Auction Statement, paragraph 4.22

- Were Three to cease to be a "key market disruptor" UK mobile prices would likely increase by around 10.7% to 12.4%, [✂]

- [✂].

Using Ofcom's estimates of equilibrium prices under different competitive conditions, Three has compared prices using 2015 figures (assuming that these reflect Three acting as a disruptive force) to what prices would be without Three acting as a competitive constraint – first, in scenario A, where Three is not a disruptor [✂]. Specifically, we compare:

- The 2015 weighted average annual price for UK mobile market as a whole = £310 per year (£25.80 per month)[4] = prices with Three as a credible operator and market disruptor; and
- The counterfactual weighted average annual price = 2015 weighted average price *(1/(1-x%))

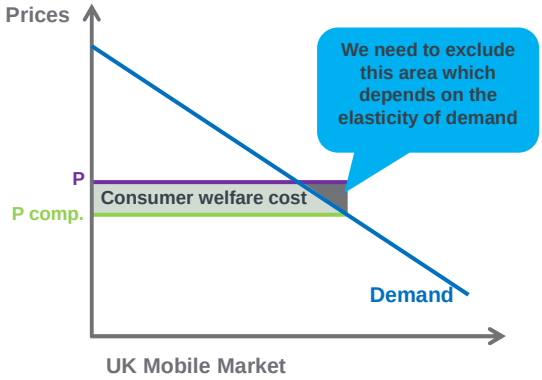
where x% is the percentage estimate that prices would be lower with a competitive Three (10% in scenario A [✂], in line with Ofcom's range estimates).

The difference between these prices equates to the annual difference in the cost per UK subscriber of Three not being able to act as an effective market player. Multiplying this value by the number of UK mobile subscribers - 54.2million subscribers[5] - gives the annual value to UK consumers of Three's effective competition in the UK mobile market.

The Net Present Value (NPV) of Three's competitive effect is calculated assuming this annual value is incurred each year for 5/10 years and the value is discounted using a discount rate of 10%.

This 'price effect' calculation does not explicitly take into account any potential reduction in demand that might arise in the case of increased prices. The overall effect in terms of consumer surplus therefore needs to take account of the grey area highlighted in the chart below:

[4] Monthly post-paid ARPUs excluding handset revenues – Analysys Mason. The calculation relies on the same inputs as those used in the paper prepared by Frontier Economics for Three *The risk of Strategic Investment in the PSSR Auction*
[5] Post-paid subscribers – Telegeography. Again the calculation relies on the same inputs as those used in the paper prepared by Frontier Economics for Three *The risk of Strategic Investment in the PSSR Auction*



The size of this grey area depends on the elasticity of demand. Three assumed a linear demand curve and calculated the size of the grey area as the difference in prices, multiplied by the reduction in quantity divided by 2. Taking this effect into account, the estimates of potential loss to consumers are presented below:[6]

Potential loss to UK consumers of a sustained 10% increase in mobile prices

Price increase	Sustained over 5 years	Sustained over 10 years
Ofcom: 1%	£1.1bn	-
Scenario A: 10%	£6.3bn	£10.2bn
[✂]	[✂]	[✂]

Source: Three

The table above illustrates that the reduction [✂]of Three's impact on competition in the UK mobile market could result in a consumer benefit loss of the order of £6.3bn[✂], depending on whether higher prices as a result of lower competitive intensity were sustained over five or ten years. The lowest figure in the range, £6.3bn, would be equivalent to £2 a month for every citizen of the UK.

[6] These estimates are based on an elasticity of demand of -0.2