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Dear Ali-Abbas

**Estimation of dig distance within the context of the BCMR**

I am writing to you following on from a meeting held between Ofcom and TalkTalk on 12 March at Ofcom. One of the primary topics covered within that meeting was Ofcom's estimate of the buffer distance used to assess whether a network is 'present' in a postcode sector, a vital element in determining the number of competitors in any area.

In its BCMR consultation, Ofcom proposes (at §5.18) that '*a buffer distance of 50m is appropriate for measuring network reach*'. We commented on your written proposals on this matter in detail at section 2.2.3.1 of our January 2019 submission on your BCMR proposals.

At our meeting on 12 March, your team set out in more detail the basis on which Ofcom reached this conclusion of a 50m dig distance. The four supporting pieces of evidence were:

- Ofcom's data on estimated distances dug by firms other than Openreach to serve customers;
- Ofcom's cost data on the costs of digging;
- the time delay needed to dig longer distances, which can deter customers from using an entrant even if they would be willing to pay the price offered; and,
- that there is modelling error.

It is clear that none of these pieces of evidence supports a 50m buffer distance. This letter sets out, considering each of them in turn, why they support a buffer distance not only of less than 50m, but less than 20m. Overall, the evidence demonstrates that Ofcom must conclude that the appropriate dig distance is less than 10m. If our understanding of Ofcom's position is incorrect, we request Ofcom to set out – in quantitative detail – how it has arrived at the 50m figure and what other figures it considered but found inappropriate.

The question which Ofcom should be trying to address in its buffer distance analysis is how far, on average, would an altnet be able to dig, and still constrain a hypothetical monopolist from profitably being able to increase prices above the competitive level by 5-10%.[1]

[1] Price is one element of the ability to provide such a constraint, but quality of service also needs to be taken into account.

However, Ofcom does not adopt a methodology which is designed to, or indeed can, answer this question. As Openreach states in its submission on this topic to Ofcom regarding actual distances dug '*median and mean distances do not help with the understanding of the economic dig distance*'. The first section, below, sets out the flaws arising from Ofcom's reliance on actual dig distances.

Ofcom's reliance on actual dig distances

Ofcom's starting point for its analysis is data on the actual distances that altnets have dug in a recent 12 month period. The most important point to note is that this data is divorced from the question of how far an entrant could dig on average and constrain a HM:

- in order to consider the constraint imposed by an entrant, Ofcom would be better to review the proportion of available contracts won by entrants at each dig distance. This includes contracts that were won by Openreach, and those which were not bid on by entrants. Such data may provide an indication of the competitive constraint imposed by competitors on Openreach as dig distance is changed. By only considering contracts which are won, Ofcom is biasing its dataset (through observation bias);[2] and,
- it is based on comparison to Openreach and Openreach's pricing, rather than a hypothetical monopolist who would have lower costs (since they have by definition 100% market share). Furthermore, Openreach's prices (particularly 10G) are materially above its costs, further increasing the gap between Openreach's prices and the competitive price level of a hypothetical monopolist.

It should be noted that these points are not the same as those raised by Openreach at §24 of Annex E of its submission, which wrongly claims that price control remedies in place in leased line markets might bias downwards the observed dig distance.[3] This is wrong since the hypothetical monopolist test relies on prices being at competitive levels. Effectively, Openreach implicitly argues that Ofcom's analysis must make the cellophane fallacy by considering prices above competitive levels—indeed, unconstrained monopoly prices—as the relevant counterfactual.[4]

Ofcom's data on actual distances dug by firms other than BT is set out at Annex 11 to its consultation. This annex is heavily redacted, so it is hard to ascertain specific figures, but one data point provided is that the median dig distance for Openreach's rivals is 14m (§A11.35), and that overall around 80% of digs involved a distance of 50m or less.[5]

Given the need to ground the derivation of the buffer distance in the hypothetical monopolist test, what is important is the maximum distance at which a rival would generally be able to constrain a hypothetical monopolist; the median might be a first order, although imperfect, approximation of this.

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[2] Note that this approach, although a considerable improvement, is not appropriately grounded in the
[3] Versus an unregulated monopoly price.
[4] Actually, as prices for 10Gbps circuits were not cost reflective, the use of regulated prices will retain an upwards bias in observed dig distances.
[5] This figure includes both Openreach and rival providers; there is no data given on the split between dig distances of Openreach and other operators.

There are a number of instances where Openreach's cost advantage over rivals who have to dig in order to provide service will be less than is generally the case in bidding for leased line contracts:

- cases where Openreach has itself to dig in order to provide service;
- cases where orders can be aggregated;
- cases where a long dig is part of a larger national contract.

In all of these cases, observed dig lengths will not reflect how far an alternative provider could dig and constrain prices to within 5-10% of the competitive level for a single line contract where the hypothetical monopolist does not have to dig. Rivals will disproportionately win such contracts where they have a competitive advantage against Openreach, and as the dataset used by Ofcom only contains contracts won, rather than lost or not bid on, the observed data will be biased towards contracts where alternative bidders have an advantage of this type. This means that the data will tend to overestimate (but to an unknown extent) the proportion of demand from this type of contract, and therefore overstate the appropriate buffer distance.

14m is therefore likely to represent an overestimate of the actual distance which other operators would profitably be able to dig, rather than an underestimate. Ofcom has not sought to correct for these errors in its analysis, which leads to an upwards bias in its estimate of the buffer distance.

In any case, Ofcom should attribute little weight to data on actual distances dug. These data are sufficiently dissociated from the question of what additional dig length would constrain a hypothetical monopolist that they cannot sensibly be relied on. At best, they should be a cross-check on the cost analysis which, as set out below, should be Ofcom's primary basis for decision-making.

<u>Ofcom's data on digging costs</u>

Using Ofcom's own cost data, as presented in Annex 10, and grounding the analysis within the need to constrain a hypothetical monopolist to price increases of no more than 5-10% above the competitive level, it can readily be demonstrated that the appropriate buffer distance should be less than 10m.

As set out at §§2.46-2.49 of our response to the BCMR, a proper treatment of Ofcom's data demonstrates that rivals would dig by no more than 10m, as the maximum extra one-off cost which could be incurred by a rival while still constraining a hypothetical monopolist to a price rise of more than 10% is no more than £694 for a 100Mbps circuit. This compares with a cost of £2,062 for a 10m dig.[6] This £694 threshold will tend to lead to an over-estimate of the dig distance since it is based on Openreach prices which are materially above both Openreach's own costs and the competitive price levels of a hypothetical monopolist.

[6] £694 is based on recovery of costs within a 3 year contract term, with no discounting of future revenues. However, the result that the maximum dig would be less than 10m does not change if a 5 year cost recovery period is used.

Ofcom has purported to conduct a similar analysis of how far a competitor would be able to build which it refers to as the 'economic dig distance'. It reaches the conclusion that, for example, for a EAD-LA 100M circuit the economic dig distance is 38m (route distance) or 27m radial distance. However, in reaching this conclusion Ofcom has assumed that a rival to Ofcom could incur extra dig costs of over £4,000 on a three year contract with a total value of only £6,000 while still imposing a competitive constraint on Openreach.[7] Based on the data Ofcom has presented, this is simply not credible.

It appears in this analysis that Ofcom may have presumed that the only costs an entrant would incur would be the cost of extending the network and electronics. Ofcom appears to have excluded the costs of existing network (depreciation, ROCE, maintenance), customer handling, network management and bidding for contracts. Ofcom has not explained why it has omitted these cost elements. They should not be excluded – some of the costs are incremental costs and others are fixed costs which a rational operator would look to recover a portion of in every contract. Furthermore, this analysis is erroneously based on Openreach's prices rather than the competitive price levels of a hypothetical monopolist. Ofcom's 'economic dig distance' analysis is therefore fundamentally flawed, and should be based on a 5-10% increment to the costs of an efficient hypothetical monopolist.

TalkTalk reiterates that Ofcom must conduct a proper and explicit modelling of the costs which could be incurred by a competitor while still imposing a competitive constraint on a hypothetical monopolist. TalkTalk believes that such an analysis would show the appropriate dig distance is less than 10m. However, even if Ofcom's flawed cost analysis were used, it can be seen that the economic dig distance, using a typical three year payback, is less than 50m for both EAD LA 100Mbps circuits and 1Gbps circuits. 10Gbps figures are particularly unreliable since prices are far above the competitive price level. Once more, even the current flawed methodology does not provide support for its conclusion of a 50m buffer distance.

<u>Time delays caused by digging</u>

The third factor which your team told us led to your conclusions on the buffer distance was the time taken to dig long distances, and the associated delays in provisioning lines for customers. This issue is considered at §A11.4-A11.17 of Ofcom's BCMR consultation document.

It is clear that *both* costs and lead times need to be appropriate for customers to be willing to buy from an alternative operator, and for that operator consequently to be able to act as an effective competitive constraint on a hypothetical monopolist. That is, there may be situations where even if an entrant were able to match the price of the hypothetical monopolist, they would not be able to compete on time to provide, and so do not impose a competitive constraint.

[7] These figures are for a network extension involving digging for a 100Mbps EAD LA circuit on a three year contract. The revenue on that circuit is assumed as £5,997 (from Table A10.1), and Ofcom has proposed that a rival could dig 38m for such a circuit (Table A10.5). A 38m dig would cost around £4,137 (derived from Table A10.4).

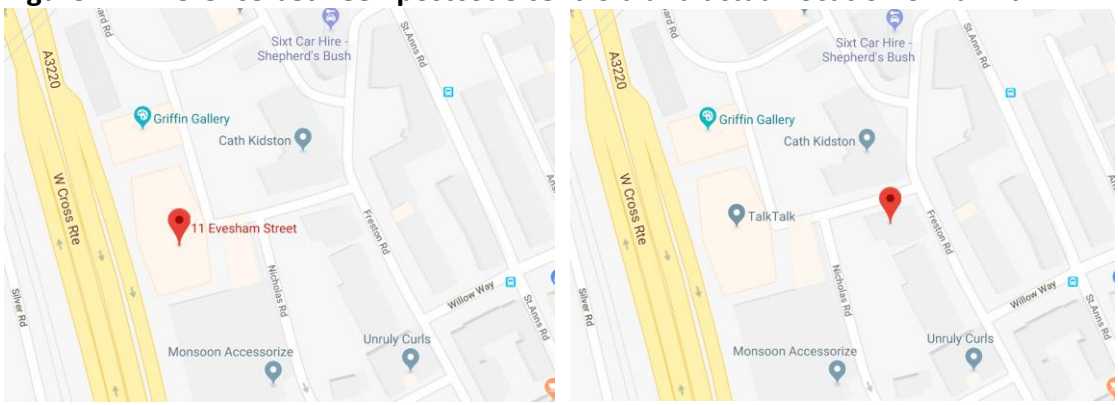
As such, time delays cannot possibly increase the buffer distance set by Ofcom; this additional factor can only reduce the distance below that which would otherwise be adopted on the basis of cost modelling alone. It therefore cannot support Ofcom's proposed 50m maximum dig distance, but rather is supportive of a much shorter distance, below 27m.[8]

Modelling error

The final point made by Ofcom is that they have increased the buffer distance because of modelling errors. This appears to reflect Ofcom's use not of actual business sites, but of notional business sites. Rather than obtain the specific addresses of individual businesses, and consequently their precise locations, Ofcom has modelled all businesses as if they were located at the centroid of their 6-digit postcode.

The impact of this can be seen in Figure 1, below, which shows on the left the location of TalkTalk's London office and, on the right, the centre of the relevant postcode (W11 4AR). As can be seen, there is a considerable difference between them, of over 40m distance.

**Figure 1: Difference between postcode centroid and actual location of TalkTalk**




Source: Google Maps

Your team suggested that in order to correct for these errors, you had increased the buffer distance since you believe that the actual distance between a competitor's flexibility point and business premises is less than the modelled distance (which is between the competitor's flexibility point and postcode centroid). Notably there was no explanation of this in Ofcom's consultation.

This approach is inappropriate, for at least two reasons.

Firstly, the answer to low quality data is not to amend other data in an *ad hoc* way, in the hope that this might correct for errors. Rather, it is to use better data in the first place. TalkTalk notes that when testing for its premises, the freely available Google Maps was able to locate offices with a high degree of precision. It is unclear why Ofcom would choose to use postcode centroids rather than the actual locations of relevant commercial buildings; it should only have done so if it were impossible to obtain better data.

[8] 27m being the distance Ofcom found on the basis of its overstated estimation of how far firms would dig, presented at Annex 10. Using a more appropriate approach grounded in the SSNIP test, the time to dig would support a maximum dig distance of less than 10m.

Second, even if it were appropriate to adjust the buffer distance, Ofcom has provided no rationale for why the appropriate amendment is to increase from 14m (if it retains the flawed approach of using actual dig distances) to 50m. There appears to have been no calibration of the scale of the likely error. It is inappropriate to make such an adjustment without providing a clear explanation of the error (if one exists) and robust evidence for its magnitude.

Consequently, modelling error cannot be a valid reason to increase the buffer distance to 50m. Ofcom must undertake accurate modelling, rather than what amounts to simply guessing at the right answer.

Conclusion

The above evidence and analysis sets out in detail why Ofcom is wrong to adopt a 50m dig distance. In light of the absence of evidence supporting Ofcom's position, and the substantial evidence pointing to a maximum dig distance of below 10m, Ofcom should amend its buffer distance to no more than 10m. This would reflect the economic realities, and provide a more realistic assessment of the competitive constraints which Openreach is under.

As set out in this letter, the appropriate approach to be adopted by Ofcom should be to:

- base the buffer distance on cost data (since this properly reflects the hypothetical monopolist test), adjusted downwards slightly to reflect the time to dig; and,
- obtain, and use, improved data on the exact locations of businesses rather than flawed postcode centroid data.

I hope that this is a helpful clarification of the points raised by Ofcom in our meeting earlier this month; please do come back to me if we have misunderstood anything in Ofcom's approach. I look forward to your response in due course.

Yours sincerely,

Simon Pilsbury
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