

Report for BT

Concerns relating to
Ofcom's treatment of
very-high-speed circuits
market in the BCMR data
analysis consultation

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1 Introduction

- 1 BT commissioned Analysys Mason to review Ofcom's *Business Connectivity Review Consultation on Data Analysis*, published on 8 October 2014, in particular with reference to the very-high-speed circuits, or MISBO,¹ market.
- 2 This short report highlights the main concerns that we see with the methodology detailed by Ofcom in the consultation document. Where possible, we attempt to quantify the impact of these concerns.
- 3 We note that, for a number of topics, Ofcom has not yet provided detailed information of the methodology to be used in the final consultation. For example, Ofcom states that it will treat data centres separately; also, final decisions on dig distances and which businesses to include in the network reach calculation have not yet been taken.
- 4 In the consultation document, Ofcom uses the same basic parameters for dig distance and enterprise size as for the 2013 Business Connectivity Market Review (BCMR). In this report, we highlight why we believe the use of the same parameters is problematic as the network reach analysis will not accurately reflect demand or a communication provider's (CP) willingness to invest.
- 5 This report focuses on how Ofcom's assumptions may affect the view of the market for very-high-speed circuits. Our key concern is that the methodology proposed by Ofcom may not be robust when addressing what is an extremely small market with specialist users. According to Ofcom's figures, in a total business connectivity market of around 600 000 circuits, MISBO circuits represent between 9000 and 15 000 circuits, or around 2% of the overall market. Assumptions and simplifications that may hold for 98% of the market may well not hold true for this specialist end of the market.
- 6 The remainder of this report addresses the four main areas of concern we have identified, each of which is accompanied by supporting information:
 - the potential use of 250 employees as the threshold for demand for MISBO circuits (covered in Section 2.1)
 - the potential use of 200 metres as the dig distance limit for MISBO circuits (covered in Section 2.2)
 - the apparent exclusion of self-supplied dark fibre (covered in Section 2.3)
 - the multiple assumptions to fill in gaps in CP data (covered in Section 2.4).

¹ Ofcom defines MISBO as "a form of symmetric broadband origination service providing symmetric capacity from a customer's premises to an appropriate point of aggregation in the network hierarchy for services with bandwidths greater than 1Gbit/s or services of any bandwidth delivered using WDM equipment at the customer's premises", Ofcom, *Business Connectivity Market Review Consultation on Data Analysis*, 8 October 2014, p. 63. Available at http://stakeholders.ofcom.org.uk/binaries/consultations/bcmr-data-analysis/summary/BCMR_Data_Consultation.pdf.

2 Main concerns

The following section discusses our main concerns in turn.

2.1 The potential use of 250 employees as a threshold

- 7 ***Summary: The potential use of a 250 employee threshold is a poor reflection of the potential market for very-high-speed circuits. This threshold fails to capture demand from smaller organisations that are already using these circuits while including demand from large organisations that do not currently use very-high-speed circuits and are extremely unlikely to do so in future. Ofcom is not capturing the realities of actual service demand, and could therefore get an incorrect result for its network reach, potentially under-reporting the number of CPs that could serve businesses.***
- 8 We believe that Ofcom should not use the 250 employee threshold as part of its network reach analysis. In the previous market review, as part of its network reach analysis, Ofcom only used data on businesses with 250 or more employees. For the current market review, Ofcom has not yet decided whether it should use the same approach or an alternative.² We believe that the 250 employee threshold is overly simplistic as a way of representing potential demand for very-high-speed circuits and Ofcom should consider alternative approaches, such as assessing potential demand taking account of the industry sector of each organisation.
- 9 Superficially, taking a threshold of 250 employees appears to be a logical method for identifying businesses which would demand some form of data connectivity beyond broadband services on the basis that more employees are likely to generate greater demand for services, and therefore bandwidth. However, the nature of an enterprise's business will have a far more significant impact on bandwidth demand than the number of employees. For example, an organisation dealing with very large file sizes, such as a film production company with 20 employees that is transferring 4TB files, may have a much greater demand for capacity than a large high street retailer with 1000 employees.
- 10 Additionally, the 250 employee threshold is based on the total number of employees in an organisation, and not the number of employees at a given site. This means that, using the methodology from the 2013 BCMR, all of the sites of a retailer (i.e. every shop branch) would be included in the analysis, but none of a typical film production company (which generally have fewer than 250 employees).
- 11 Two examples illustrate this. The shoe repair company Timpson³ has over 2000 employees, so each of its retail stores, around 900, would be included in Ofcom's network reach analysis. As

² See paragraph 2.29 of Ofcom, *Business Connectivity Market Review, consultation on data analysis*, 8 October 2014. Available at http://stakeholders.ofcom.org.uk/binaries/consultations/bcmr-data-analysis/summary/BCMR_Data_Consultation.pdf

³ www.timpson.com.

Timpson does not even use an ePOS system⁴, we doubt its demand for services goes beyond basic telephony and broadband services, let alone MISBO circuits. Conversely, Aardman Animations,⁵ creators of Wallace and Gromit, has fewer than 250 employees and so neither of its main offices would be included in the network reach analysis. Given the quantity and size of files that Aardman is using, it is likely that Aardman requires high-capacity circuits.

- 12 The evidence challenging the 250 employee limit also comes from two enterprise market surveys:
- In 2011, as part of its preparations for the 2013 consultation, Ofcom commissioned Jigsaw Research to interview UK businesses about their telecoms services. The resulting survey⁶ of 461 enterprises showed that 2% of enterprises⁷ with 10–100 employees used circuits with total bandwidths of over 1Gbit/s, supporting our view that enterprises with fewer than 250 employees do in fact demand MISBO circuits. Conversely, only 12% of businesses with over 500 employees⁸ have total bandwidth requirements of over 1 Gbit/s.
 - In 2012, Analysys Mason performed a similar enterprise survey on behalf of BT, with 350 enterprises interviewed. Of the organisations with fewer than 250 employees, 13 used circuits with bandwidth greater than 1Gbit/s, providing further market evidence that enterprises with fewer than 250 employees use MISBO circuits.
- 13 The methodology employed by Ofcom means that a large portion of the potential market for MISBO circuits is not included in its analysis. In the UK, according to the Office of National Statistics, if we exclude sectors that are extremely unlikely to require very high bandwidth circuits (e.g. agriculture, forestry and fishing), around 15 000 businesses have between 50 and 249 employees and operate in market sectors that may mean they require MISBO circuits (see Figure 1). While 15 000 is a relatively small number of organisations, less than 1% of all enterprises, in the context of the MISBO market it is large enough to affect the analysis.

Industrial classification	Number of enterprises with 50–249 employees
Information and communication	2415
Finance and insurance	1790
Professional, scientific and technical	4375
Business administration and support services	6190
Total	14 770

Figure 1: Number of enterprises with 50-249 employees in vertical markets that may demand high bandwidth circuits [Source: Analysys Mason, 2015]

⁴ Harford T, *Adapt*, Little, Brown, 2011, pp.227.

⁵ <http://www.aardman.com/>.

⁶ See *Business Connectivity Services Review*, Jigsaw Research, 11 October 2011. Available at <http://stakeholders.ofcom.org.uk/binaries/consultations/business-connectivity/annexes/business-review.pdf>

⁷ The exact number of enterprises is not provided in the report. Two percent would represent around nine businesses.

⁸ The Jigsaw Research study does not provide the data for all companies with over 250 employees.

14 We also believe the methodology used by Ofcom includes large parts of the market which are extremely unlikely to require very-high-speed circuits in the timeframe covered by the 2016 BCMR. Timpson is one instance of such an organisation and many other retail organisations would also be in a similar position. For example, branches of Costa Coffee (over 1400), Starbucks (over 600) and Café Nero (over 400) would likely be captured in the network reach analysis of Ofcom. Again, we can look at the Office of National Statistics data and this time focus just on the sectors (e.g. retail, agriculture) that are unlikely to have requirements for very high bandwidth circuits, but have 250 employees or more, and so are included in Ofcom’s classification. This analysis shows that there are over 3000 enterprises, and many more sites (as these large organisations will work across multiple locations), included in Ofcom’s network reach analysis, the overwhelming majority⁹ of which will have no requirement for very-high-speed circuits.

Industrial classification	Number of enterprises with 250 or more employees
Agriculture, forestry and fishing	45
Construction	270
Motor trade	35
Retail	1480
Transport and storage	735
Accommodation and food services	230
Arts, entertainment, recreation and other services	280
Total	3075

Figure 2: Number of enterprises with 250 or more employees in vertical markets that are unlikely to demand high bandwidth circuits⁹

15 We also believe that the terminology used by Ofcom in its consultation document may create the potential for misunderstanding. In the document, the term “large business sites” is used.¹⁰ We have two concerns with this phrase. Firstly, we understand that by large business sites, Ofcom is referring to sites of large businesses, rather than sites that are large. To take the Timpson example, in Ofcom’s phrasing each of Timpson’s shoe repair shops, which typically employ three or four people at each site (retail store), is classed as a “large business site”, and included in the analysis. Conversely, a single site housing 200 employees of the same company would not be classed as a large business site, and would not be included. Secondly, as the sites include public sector sites as well as those of commercial organisations, we do not think referring to the sites as business sites accurately reflects Ofcom’s meaning.

16 To investigate further the use of MISBO by organisations with fewer than 250 employees, Analysys Mason has analysed the postcode data for MISBO circuits provided by BT. We used a business database¹¹ to identify which of the postcodes for the customer end of the circuit had no

⁹ We accept that a small minority of sites are likely to have very-high bandwidth circuits (e.g. for the headquarters or data centre of a major supermarket chain).

¹⁰ p. 27, Table 6, Ofcom, *Business Connectivity Market Review Consultation on Data Analysis*, 8 October 2014, Available at http://stakeholders.ofcom.org.uk/binaries/consultations/bcmr-data-analysis/summary/BCMR_Data_Consultation.pdf.

¹¹ Dun & Bradstreet (<http://www.dnb.co.uk/>).

enterprises with more than 250 employees. Of the more than 1000 sites where we had complete enterprise data, 73% of BT's MISBO circuits were in locations with no enterprises with 250 employees or more. While this figure may not be fully accurate, as there may be classification errors in the business database or the database may not capture information on business estates, it seems likely that a share of the 73% is for organisations with fewer than 250 employees.

2.2 The potential use of 200 metre dig distances

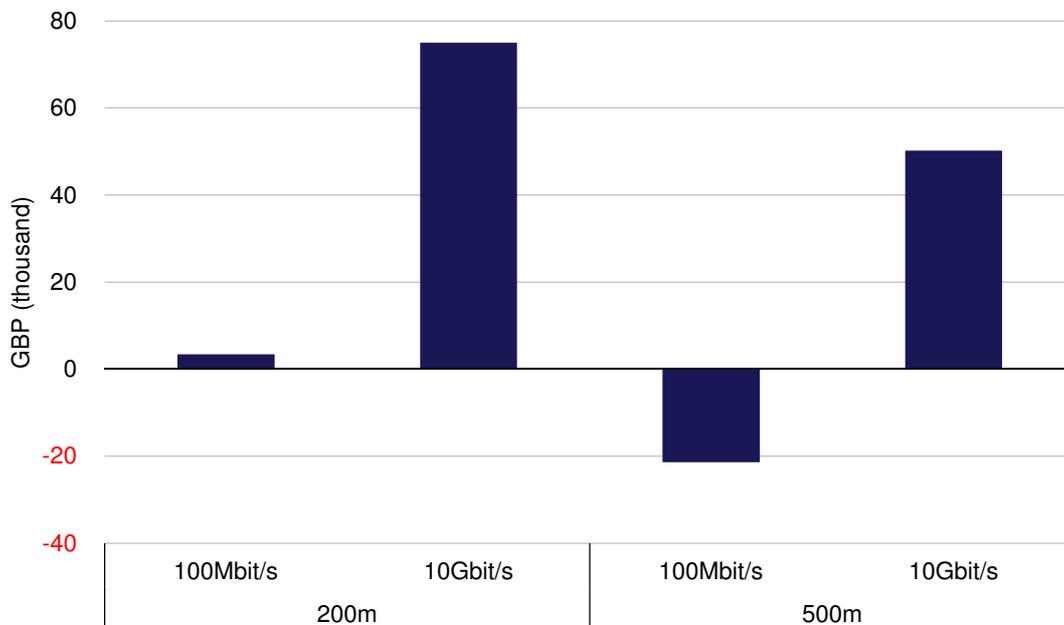
- 17 ***Summary: The potential assumption that CPs would not dig more than 200 metres to connect a MISBO circuit will have a significant impact on Ofcom's network reach analysis and does not reflect the willingness of a CP to dig to connect high-value circuits. Potentially, having too short a dig distance will mean that it does not reflect the commercial realities of connecting some customers. Ofcom could be under-counting the number of CPs that can provide services to end users.***
- 18 As data on dig distances was still being processed at the time of the publication of the data analysis consultation, it is not discussed in that document. However, in the 2013 BCMR, Ofcom considered that a maximum distance of 200 metres was realistic for all circuits, including high-value MISBO circuits, and this dig distance is used in the consultation document to provide initial results.
- 19 While we do not yet know how Ofcom is proposing to treat dig distances in the 2016 BCMR, we believe that, for MISBO circuits, 200 metres is too short and longer dig distances should be considered.
- 20 The inclusion of some dig distance information is a logical part of a network reach calculation. For any CP to connect to a location not currently served by fibre there will be a cost, a large part of which will be due to the dig. The key question that Ofcom needs to answer is how far a CP would be willing to dig to connect a given circuit. The answer to this question is not straightforward and will depend on many factors. Furthermore, it will be essential that the point from which the dig distance is measured (the 'flexibility point') reflects where CPs would in reality dig from, rather than it being, for example, a manhole located on an existing duct route.
- 21 A CP will likely be willing to dig further for a circuit that will generate more revenue or profit. MISBO circuits are generally more valuable to the CP than other, lower speed, products. As a result, the distance a CP would dig to connect a MISBO circuit will be longer. The cost for the dig will largely be independent of the bandwidth of the circuit (i.e. the cost to dig for a 100Mbit/s circuit will be the same as for a 10Gbit/s circuit, with the latter incurring some additional fibre and equipment (not dig per se) costs).
- 22 To illustrate that operators will be willing to dig longer distances for higher-value circuits, the chart below in Figure 3 shows net revenues for a CP for circuits of different speeds, after dig costs. Based on a simple model that includes only circuit revenues over a five-year period and dig costs, it shows that for a 100Mbit/s circuit, the dig costs for a 500 metre circuit would exceed revenues. However, for a 10Gbit/s circuit, even including a 500 metre dig, the circuit revenues would likely

exceed dig costs. Despite this result, in the 2013 BCMR, Ofcom used the same dig distance assumptions for all circuits (i.e. the 200 metre dig distance was used both for 100Mbit/s circuits and for 10Gbit/s circuits).

23 The figures in the chart are based on Openreach’s excess construction charges (GBP82.62 per metre for new ductwork – carriage¹² (including wayleave costs)). The revenue figures are based on Openreach’s current price list and assume that a CP charges its customer a 30% premium over the base Openreach price. 10Gbit/s circuits, for which prices are not publicly available, have been assumed to generate twice the revenues of 1Gbit/s circuits.

24 We recognise this example is simplistic and excludes all cost elements other than the dig cost. It is not designed to reflect the full business case for extra dig costs but simply to illustrate that operators are likely to dig further distances for higher-value circuits, a fact that we believe is irrefutable.

Figure 3: Net revenues per circuit after dig costs [Source: Analysys Mason, 2015]



25 Along with the dig distance, the type of terrain will affect a CP’s decision of how far to dig. A CP is likely to be flexible on dig distances depending on the terrain and may dig further to sites in isolated locations (i.e. where there is no footway or carriageway) than in cities. For deployments in lower cost terrain, the economic dig distance will increase proportionately.

26 As circuits are rarely bought in isolation, a CP is likely to consider the whole contract being sold to an organisation with multiple sites rather than just the costs and revenues associated with an

¹² See <http://www.openreach.co.uk/orpg/home/products/pricing/loadProductPriceDetails.do?data=pAWshrQ7XRSLb9S%2BW8IAk0G8vUtdrJTUevDC2QqJZ8IMnGHsqdC0vzO163bJmh34D91D7M0q8u%2FIISgtIFAKw%3D%3D>.

individual circuit. For example, if a CP is bidding for a contract with a financial institution with multiple branches, it may be willing to dig distances longer than 200 metres for a MISBO to connect a head office, in order to win the overall contract. Again, this will mean that CPs are willing to dig longer distances than 200 metres for a small number of circuits, which is not accounted for by Ofcom.

- 27 The considerations listed above are not theoretical. In conducting research for the 2013 BCMR¹³, we interviewed a financial services company for which a CP had dug 500-600 metres to connect a MISBO circuit to its head office as part of a larger network contract. We also interviewed a data centre to which new connections had been dug at a distance of multiple kilometres. These examples demonstrate that dig distance is not a simple parameter and setting it at 200 metres does not capture actual market dynamics.
- 28 In the 2013 BCMR, Ofcom accepted that dig distances could be greater than 200 metres. Ofcom's analysis of dig distances over the previous three years showed that more than 50% were for less than 25 metres¹⁴ and almost 95% were for less than 200 metres.¹⁵ Put another way, more than 5% of new network extensions were for greater than 200 metres. As around 98% of all circuits were not MISBO circuits (based on Ofcom's analysis), we would not expect to see long dig distances driving the average dig distance across *all* circuits.
- 29 Ofcom also has evidence of dig distances of significantly longer than 200 metres.¹⁶ Out of around 3000 network extensions, 40, or 1.3%, were further than 500 metres, 22 of which were distances greater than 1 kilometre. Again, this would reinforce the view that CPs are willing to extend their circuits for very-high bandwidth, and therefore high-revenue, circuits.
- 30 A change in the dig distance assumptions will have a major impact on Ofcom's network reach calculations. In the 2013 BCMR, Ofcom illustrated that the average data centre in the UK had access to 5.5 OCPs within 1km. Furthermore, Ofcom demonstrated that across the entire UK 89% of data centres were within 1km of at least 2 OCPs,¹⁷ or 86% of data centres for the UK excluding WECLA. If Ofcom used a longer dig distance than the 200 metres in the previous BCMR, it would have a substantial impact on its assessment of the level of potential market competition.

¹³ Analysys Mason, *Summary report on Very-high-speed services*, 6 September 2012. Available at http://stakeholders.ofcom.org.uk/binaries/consultations/business-connectivity/responses/BT_part_2.pdf.

¹⁴ See figure 5.3 of <http://stakeholders.ofcom.org.uk/binaries/consultations/business-connectivity/statement/Section5.pdf>.

¹⁵ See paragraph 5.60 of <http://stakeholders.ofcom.org.uk/binaries/consultations/business-connectivity/statement/Section5.pdf>.

¹⁶ See footnote 47, p. 210, Ofcom, *Business Connectivity Market Review, Statement*, 28 March 2013, <http://stakeholders.ofcom.org.uk/binaries/consultations/business-connectivity/summary/section5-6.pdf>.

¹⁷ See table A6.1 of <http://stakeholders.ofcom.org.uk/binaries/consultations/business-connectivity/statement/annexes1-7.pdf>.

2.3 The apparent exclusion of dark fibre

31 **Summary: The potential exclusion of dark fibre sold by CPs to end user for self-supplied circuits could reduce the overall size of the MISBO market by 5% or more.**

32 From the consultation document, it is not clear what treatment Ofcom is proposing for dark fibre circuits, though we note that as part of the s.135 request it did ask for an inventory of sales and purchases of dark fibre from the CPs which received the s.135.

33 We believe that dark fibre circuits sold by CPs to enterprises and government should be included in the market assessment for MISBO circuits. Ofcom's approach in the previous BCMR was to exclude dark fibre from the market assessment as dark fibre circuits sold by one CP to another to connect an end user would count as part of the second CP's reported circuits. However, as we have argued previously,¹⁸ this methodology fails to capture dark fibre circuits that are sold by CPs directly to end users, for the end user to 'self-build' a network.

34 The number of organisations self-building networks based on CP-provided dark fibre is significant enough to alter market share calculations for the MISBO market. From our research in 2012 for the 2013 BCMR, we estimated that the inclusion of dark fibre would have had more than a 5% impact on the MISBO market share figures.¹⁹

35 Ofcom has previously argued that dark fibre should not be included as most organisations do not have the expertise to self-build a network based on dark fibre.²⁰ We would agree with this. However, some evidently do have the expertise – the fact that that number is small (as a proportion of the total circuit base, <1%) is not a good reason for excluding it from a low-volume market assessment like MISBO.

36 We believe that Ofcom should collect and include all dark fibre circuits used for self-supply within its market assessment.

2.4 The multiple assumptions to fill in gaps in CP data

37 **Summary: The treatment that Ofcom is proposing to allocate bandwidth, location and on/off net information to circuits where this data was not provided by the CP could create a significant distortion of the MISBO market. Independently, each of the steps taken could alter the size of the market by around +/-5%. Combined, the effect could be significantly over 10%.**

¹⁸ See section 3.1 of Analysys Mason, *Summary report on Very-high-speed services*, 6 September 2012. Available at http://stakeholders.ofcom.org.uk/binaries/consultations/business-connectivity/responses/BT_part_2.pdf

¹⁹ See paragraph 1.3 of Analysys Mason, *Very-high-speed services*, 6 September 2012. Available at http://stakeholders.ofcom.org.uk/binaries/consultations/business-connectivity/responses/BT_part_2.pdf

²⁰ See paragraph 7.375 of <http://stakeholders.ofcom.org.uk/binaries/consultations/business-connectivity/statement/Sections6-7.pdf>

Uplift assumptions used on missing data

- 38 Ofcom's data from CPs about circuits is missing key information and in the consultation it is proposing to make three key adjustments to the supplied data relating to a circuit's bandwidth, location, and whether it is on or off net.
- 39 Our main concern about Ofcom's proposed treatment of this data is that it is intending to use pro-rata uplifts for each set of data and is not exploring whether there are systematic gaps in the supplied data. Ofcom is assuming that any errors in the datasets are essentially random (i.e. that missing information is in proportion to the circuits for which the CP does provide data). However, it is probable that data is missing for a reason relating to the type of circuit. For example, it may be more likely that bandwidth information has not been captured for an off-net circuit. Alternatively, it may be more likely that an on-net circuit is higher bandwidth than an off-net circuit, as the economics of providing high-bandwidth circuits on net are likely to be more attractive than for low-bandwidth circuits.
- 40 We can illustrate this point by exploring three examples based on the assumptions made by Ofcom to normalise data in terms of bandwidth, location and on/off net and demonstrating how these assumptions could affect market sizing, and therefore market share, figures.

Uplift assumptions used on circuit bandwidth

- 41 Based on the cleaning of data by Ofcom, it has identified the bandwidths of 86% of circuits. The 14% of circuits for which bandwidth data is not available equate to over 75 000²¹ circuits. According to the methodology proposed by Ofcom, these 75 000 circuits will be attributed a bandwidth in proportion to the bandwidths of circuits for which this information is available.
- 42 While this attribution will be done for each CP, we can illustrate the sensitivity of this methodology on the overall market. If circuits are allocated in line with the overall market, if we take Ofcom's sales less purchases (minimum) 2014 data 1.67%²² of circuits will be classed as MISBO, or around 1300 circuits. However, as discussed above, there may be systematic reasons why MISBO circuits are or are not lacking bandwidth information.
- 43 Based on the information provided by Ofcom, we do not believe there is a way to understand how much of an effect this could have on the MISBO market as we cannot know whether the assumption creates a swing that is 10% from the true position, or 50%. To provide a sense of the impact, below in Figure 4, we illustrate various scenarios. For example, if the allocation assumption is 50% too high (i.e. instead of allocating 1312 circuits to the MISBO market, the actual figure should be 656) or 50% too low (i.e. 1968 circuits should be allocated), this could significantly affect the size of the MISBO market, and therefore market share calculations.

²¹ Although not stated in the consultation document, we assume that the percentage shares referenced by Ofcom relate to the ~600 000 circuits covered by the BCMR, and not the 930 000 circuits on which Ofcom gathered data.

Swing (+/-)	Number of circuits affected	Range of MISBO market size	Impact on total market size	Market share of CP with 3748 circuits
0%	0	9371 ²²	0%	40.0%
10%	+/-131	9239-9502	~3%	39.4-40.6%
20%	+/-262	9109-9633	~6%	38.9-41.1%
50%	+/-656	8715-10 027	~14%	37.4%-43.0%

Figure 4:
Potential impact of Ofcom's assumptions on circuit allocation by bandwidth
[Source: Analysys Mason, 2015]

Uplift assumptions used on circuit location

- 44 Ofcom is lacking postcode information for 25% of circuits and also proposes to allocate circuits according to the data on a CP's other circuits. This methodology may again misallocate circuits. The UK has around 10 000 postcode sectors. As we understand it, the methodology proposed by Ofcom will only allocate a CP's circuits to a postcode sector where the CP already has a circuit with postcode information. Potentially, this technique will make the end points of a CP's network appear more densely spread than is actually the case.
- 45 We can illustrate how this may affect market shares with an example. A hypothetical CP sells 100 circuits. Of these 100 circuits, 30 are in WECLA and 70 are outside WECLA. However, the CP only provides Ofcom with postcode information on 75 circuits, 50 of which are outside WECLA.
- 46 Ofcom therefore has to allocate postcodes to 25 circuits and will do so based on the 75 circuits for which postcode information is available. Hence, Ofcom will allocate 67% (i.e. 50/75) to non-WECLA areas, or 17 circuits, and the remaining 8 circuits to WECLA.
- 47 According to Ofcom's analysis, 33 circuits will be in WECLA (compared to an actual figure of 30) and 67 circuits will be allocated outside of WECLA (compared to an actual figure of 70). Without intending to, Ofcom would exaggerate market competitiveness within WECLA and underplay the level of competition elsewhere.
- 48 Across the market, a misallocation of a relatively small number of circuits for each CP could have a significant impact on the overall assessment of competition. With a market the size of MISBO (i.e. 9000 to 15 000 circuits), the cumulative effect of a misallocation of a few hundred circuits could meaningfully distort market share figures.

²² As a base case we have taken Ofcom's 2014 data, (sales less purchases), minimum. Table 8, p. 30, Ofcom, *Business Connectivity Market Review Consultation on Data Analysis*, 8 October 2014. Available at http://stakeholders.ofcom.org.uk/binaries/consultations/bcmr-data-analysis/summary/BCMR_Data_Consultation.pdf. Using Ofcom's alternative volume data (e.g. 2014 (on-net only)) would impact the circuit count, but not the relative impact on market size or market share.

Assumptions used on whether a circuit is on or off net

- 49 Where it does not have the on/off net information, Ofcom is proposing to allocate circuits in proportion to the on/off net information for the CP circuits where this information is available. As with postcode and bandwidth data, the risk is that on/off-net data has systematically not been recorded for certain types of circuits and this would be missed by Ofcom's methodology. We believe that this is especially important for the MISBO market.
- 50 Based on the information provided by Ofcom, it is not possible to understand the overall impact of the on/off-net data on the circuit counts. However, Ofcom has not been able to identify the on/off-net information for 11% of circuits, or around 66 000 circuits. Even a small misallocation of these circuits could result in hundreds of MISBO circuits not being counted, which would have an impact on market share.
- 51 This can be illustrated by a simple example. A hypothetical CP sells 100 business circuits, 90 of which are 100Mbit/s Ethernet (i.e. AISBO²³) circuits, 10 of which are WDM (i.e. MISBO) circuits.
- 52 For the lower-value AISBO circuits, the CP typically purchases circuits from Openreach. As a result, of the 90 AISBO circuits, 60 are supplied by Openreach (i.e. are off-net circuits) and only 30 are on net. For higher-value MISBO circuits though, the CP will choose to connect all to its network (i.e. all 10 are on net). Overall, of the CP's 100 circuits, 60% are off net and 40% on net.
- 53 If we assume that the CP can only provide on/off-net data for 89 of its circuits, including 55 Openreach circuits and 34 on-net circuits, for the 11 circuits without on/off-net data, Ofcom would apply the proportion of circuits known to be off net, 62% (i.e. 55/89). By this calculation, Ofcom would allocate 7 circuits as off net and 4 as on net. Overall for this hypothetical CP, Ofcom would count 62 circuits as off net, compared to the actual figure of 60 and 38 circuits as on net, compared to the actual figure of 40. While a difference of two circuits sounds negligible, if reflected across the market it would reduce the overall size by 5%. Clearly, more extreme examples are possible, and these would have a greater impact on the market size.

²³ Alternative interface symmetric broadband origination: Ofcom defines this as "a form of broadband origination service providing symmetric capacity between two sites, generally using an Ethernet IEEE 802.3 interface". Generally, these are lower speed circuits than those included in the MISBO classification.

