Business Connectivity Market Review

Annex 28

Base year cost adjustments to reflect the cost attribution review

Redacted for publication

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Section 1

Introduction

Introduction

1.1 In June and November 2015 we set out the results of our review of BT's cost attribution rules (the "Cost Attribution Review", or "CAR") and proposed changes to the attribution rules relating to general overheads, property, electricity, duct, fibre and software costs. In our LLCC consultations we proposed to reflect this analysis in determining the base year costs.

1.2 As explained in Annex 27, we have decided to use the 2014/15 RFS as the starting point for our base year model. In that annex we set out our approach to adjusting the base year costs in this charge control. In doing so, we have explained that our objective in deciding whether to make a base year adjustment is to ensure that the information which we use represents the relevant level of costs for the respective baskets on a forward-looking basis for setting that specific charge control. We have also made decisions in Annex 27 about the base year adjustments apart from those which have been identified as a result of the analysis undertaken in the CAR.

1.3 The purpose of this annex is to explain how we have taken the analysis in the June and November 2015 CAR Consultations into account in deciding whether, and if so how, to adjust the base year costs in setting the charge control.

Summary of our decisions

1.4 We have decided to make base year adjustments relating to the following costs:

- General overheads;
- Property and electricity costs;
- Duct costs
- Openreach and TSO software costs; and
- Fibre costs.

1.5 We have decided not to make any base year adjustment in relation to transfer charges.

1.6 Table 1.1 shows the total impact of the base year adjustments made to the 2016 LLCC model to reflect the analysis in the CAR. The FAC figures presented in this table are the same as those set out in Table A27.1 and have been calculated using a cost of capital of 9.8% which is consistent with that used in the 2016 LLCC model.

Table 1.1: Total base year adjustment identified as a result of the CAR, £m

	Operating costs	MCE	FAC
Ethernet	(41.1)	(41.0)	(45.1)
TI	(4.6)	(23.8)	(6.9)

Source: Ofcom, based on data from BT provided on 9 February 2016 in response to question 1 of the 8th CAR section 135 notice.

1.7 Table 1.2 shows the impact on TI and Ethernet of each adjustment.[1,2]

Table 1.2: Base year adjustments identified as a result of the CAR, £m

	Operating costs	MCE	FAC
Ethernet			
General overheads	(29.0)	(5.8)	(29.6)
Property and electricity	(3.6)	(1.1)	(3.7)
Duct costs	2.1	38.5	5.8
Openreach and TSO software	(7.1)	(15.7)	(8.6)
Fibre costs	(3.3)	(56.8)	(8.9)
Total	**(40.9)**	**(41.0)**	**(44.9)**
Difference from Table 1.1	*0.2*	*0.0*	*0.2*
TI			
General overheads	(6.7)	(2.8)	(6.9)
Property and electricity	3.7	(9.8)	2.8
Duct costs	0.2	(4.6)	(0.3)
Openreach and TSO software	(1.6)	(1.4)	(1.8)
Fibre costs	(0.2)	(4.3)	(0.6)
Total	**(4.5)**	**(22.9)**	**(6.8)**
Difference from Table 1.1	*0.1*	*0.9*	*0.1*

Source: Ofcom, based on data from BT provided on 9 February 2016 in response to question 1 of the 8th CAR section 135 notice.

1.8 BT calculated the impact of these base year adjustments using spreadsheet models based on input data from its cost attribution system, REFINE.[3] To ensure that BT's

[1] Consistent with the basket designs and the costs included in the charge control model, the Ethernet impact has been derived by considering the impact of each adjustment on the AISBO non-WECLA market reported in the 2014/15 Regulatory Financial Statements. The TI impact has been derived by considering the impact of each adjustment on the following markets reported in the 2014/15 Regulatory Financial Statements: low bandwidth TISBO, medium bandwidth TISBO, high bandwidth TISBO and Technical areas (point of handover). We note that services in some of these reported markets may not be included in the charge control but they share component costs with services that are included in the model for forecasting purposes.

[2] The sum of the individual adjustments does not exactly match the figures shown in Table 1.1. This is because the total adjustment for the base year model (the numbers in Table 1.1) i) excludes the effect of holding gains and other CCA adjustments and ii) includes the impact relating to TI and Ethernet services that were included in the wholesale residual market in the 2014/15 Regulatory Financial Statements but whose costs are relevant to the charge control model (e.g. for forecasting component costs). The net difference between the totals in the two tables is small (<£0.2m).

[3] BT response dated 17 March 2016 in response to question 2b)i of the 8th CAR section 135 notice. BT told us it was unable to calculate the impacts using REFINE due to the time and complexity involved in developing REFINE to take into account the required attribution changes. However, BT considered that using spreadsheet models to calculate the impact would result in estimates that were

estimates appropriately reflected the impact of the base year adjustments described in this annex, we:

- obtained these calculations from BT using our formal powers;
- requested details of the quality assurance undertaken by BT; and[4]
- instructed Cartesian[5] to review the spreadsheet models BT used to estimate the impact of our base year adjustments relating to general overheads (i.e. the adjustments relating to the following cost categories: AG112, AG103, AG409, AG410 and COMCOS). Cartesian was satisfied that the spreadsheet models were free from bias and material errors and followed best practice.

1.9 On the basis of the above, we consider that BT's estimates appropriately reflect the impact of our decisions and we have used them to make the base year adjustments described in this annex.

Next steps

1.10 We explained in Section 16 of Volume I that, with the amendment[6] set out there and further explained below, we have imposed the new SMP conditions which we concluded in the 2014 Regulatory Financial Reporting Statement should be applied to BT across all regulated markets. These conditions include the requirement on BT to ensure that the RFS are prepared in accordance with the Regulatory Accounting Principles, including the Principle of Consistency with Regulatory Decisions. As explained in Section 16, we have decided that BT must ensure that the RFS are prepared on the basis which is consistent among other things with our decisions concerning the base year adjustments set out in this annex. These consistency requirements are described in more detail in Section 16 and set out in the Consistency Direction which is included in Annex 35.

1.11 We said in the 2014 Regulatory Financial Reporting Statement that we would establish Regulatory Accounting Guidelines which would contain high level guidelines and accounting rules together with the detail necessary to enable compliance with the 'consistency with regulatory decisions' principle. We also said that the Regulatory Accounting Guidelines should reflect the findings from the CAR. We explained that requirements to be included in the Regulatory Accounting Guidelines would be implemented by way of direction.

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substantially the same as those that would be obtained using REFINE since the same input data was used and the attribution hierarchy and main interdependencies were taken into account.

[4] BT response dated 17 March 2016 to question 2vi) of the 8th CAR section 135 notice. BT said that it had verified the accuracy of the impacts by i) structuring the models using best practice, ii) preparing document maps and reviewing the logical flow of data in the models, iii) testing the accuracy and consistency of calculations in the models, and iv) reviewing the impacts of the models to understand the variances against the Regulatory Financial Statements.

[5] In 2015 Cartesian reviewed BT's key cost attribution methodologies which informed our June 2015 CAR Consultation.

[6] This amendment is to delete the reference to the Regulatory Accounting Guidelines in the SMP conditions.

1.12 Two years have now passed since our 2014 Regulatory Financial Reporting decision and we now have a better understanding of the way BT attributes its costs and how the new reporting framework is working in practice.

1.13 As explained in this annex, the CAR analysis identified issues with BT's detailed application of certain cost attribution rules. We have addressed these issues in this annex to decide how to adjust the base year costs in setting the leased lines charge control. We are also imposing requirements to enable BT to comply with the Principle of Consistency with Regulatory Decisions in preparing the RFS. These consistency requirements are captured in the Consistency Direction.

1.14 In light of the analysis undertaken for the CAR (and the corrections and methodology changes that BT has already made or is now required to make as a result) and the new reporting requirements introduced in 2014 aimed at constraining BT's ability to change those attribution rules, we consider that BT is well placed to ensure that the high level accounting rules remain complete and up-to-date (subject to the constraints imposed by the change control process).

1.15 Therefore, we no longer consider that it would be useful for us to establish high level guidelines and accounting rules in the Regulatory Accounting Guidelines, at least for the time being.

1.16 However, we will continue to monitor the effectiveness of the current framework and will consider if and how it may be appropriate to adapt the framework to respond to the issues arising out of this review. If we consider that such changes may be appropriate, we will seek stakeholders' views.

Implications for other decisions

1.17 We explained in the June and November 2015 CAR Consultations that, in addition to the leased lines charge control, the analysis undertaken in the CAR may have implications for other future charge controls that we might set as an outcome of our market reviews, including the next fixed access market review. If we were to adjust the cost data in all other regulated markets to reflect the analysis undertaken in the CAR, we estimate that the impact at the market review level would be as set out in Appendix A.

Section 2

General Overheads

Introduction

2.1 In this section we consider the general overheads that BT attributes using the Pay and Return on Assets ("Pay and ROA") methodology. General overheads attributed using this methodology include corporate costs such as Group Finance, HR and Legal.

2.2 Costs in the leased lines markets include a proportion of general overheads that have been attributed using the Pay and ROA methodology. General overheads attributed using this methodology represented approximately 11% of 2014/15 operating costs across all leased lines markets.

2.3 We set out below how we have adjusted the base year costs to reflect the CAR analysis relating to these general overheads, as shown in Table 2.1.

Table 2.1 Estimated impact of base year adjustment for general overheads, 2014/15, £m

	Operating costs	MCE	FAC
TI	(6.7)	(2.8)	(6.9)
Ethernet	(29.0)	(5.8)	(29.6)

Source: Ofcom, based on data from BT provided on 9 February 2016 in response to question 1 of the 8th CAR section 135 notice.

Background

Description of methodology

2.4 BT attributes five categories of general overhead costs using either a Pay and Return on Assets (ROA) or a factorised Pay and ROA methodology[7] as shown in Table 2.2. The use of factorised pay rather than actual pay is a way of attributing costs based on the number of employees within a line of business.[8] In this section we refer to these two methodologies collectively as the Pay and ROA methodology but we make clear where we are explicitly referring to the factorised pay variant.

[7] BT has confirmed that these are the only cost categories that are attributed using the Pay and ROA methodology (BT response dated 21 January 2016 in response to question 1.1 of the 4th CAR section 135 notice).

[8] Factorised pay takes account of the average pay in each BT line of business (e.g. Openreach, Global Services, etc). The effect of using factorised pay is to attribute costs to a line of business based on the number of employees in that line of business, and within that line of business costs are attributed on the basis of pay. Pages 378-379 of the Cartesian report give an example of using factorised pay.

Table 2.2: Cost categories attributed using the Pay and ROA methodology, 2014/15, £m

Cost category	Description	Operating cost	MCE	Pay variant used in Pay and ROA
AG112	Corporate costs	[✂]£600m to £650m	[✂]£200m to £250m	Factorised pay
AG103	TSO Support functions	[✂]£50m to £100m	[✂]£(10)m to £(50)m	Actual pay
COMCOS	Openreach overheads	[✂]£50m to £100m	[✂]£0m to £(10)m	Actual pay
AG409	BT Wholesale general software	[✂]£10m to £50m	[✂]£50m to £100m	Actual pay
AG410	Openreach general software	[✂]£50m to £100m	[✂]£50m to £100m	Actual pay
Total		[✂]£500m to £1.0bn	[✂]£250m to £300m	

Note: AG stands for activity group, one of the cost category types used by BT. Operating cost and MCE amounts are as per level 1 of BT's cost attribution system. Some of these categories, for example AG112, will pick up additional costs as other cost categories are exhausted. This means the total cost eventually attributed from these categories may be higher than the amounts shown.

2.5 Under the Pay and ROA methodology, the proportion of cost attributed to a particular cost category is equal to the amount of pay and ROA costs included in that cost category divided by the total pay and ROA costs in all cost categories.

2.6 Where the cost category relates to a particular line of business, the costs are only attributed to cost categories that include costs associated with that line of business. In practice this means that AG112 uses BT Group factorised pay and BT Group ROA (excluding overseas operations); AG103 uses TSO pay and TSO ROA; COMCOS and AG410 use Openreach pay and Openreach ROA and AG409 uses Wholesale pay and Wholesale ROA.

2.7 BT defines the 'pay' element of the Pay and ROA methodology as both current (i.e. operating cost pay) and capitalised pay.[9] BT calculates the 'ROA' element by applying a cost of capital of 10.8%[10] to the CCA value of fixed assets in the relevant division.[11] The costs in these five cost categories are currently only attributed to BT's UK operations and not to BT's overseas operations.[12] The asset base used to calculate the ROA element includes all tangible and intangible assets with the exception of the following intangibles: goodwill, 'customer relationships and brands' and 'telecoms licences and other'.[13]

[9] See for example page 128 of BT's 2014/15 DAM which describes AG112.
[10] BT's DAM says that the cost of capital of 10.8% is applied to the CCA value of the net book value of fixed assets (i.e. the net replacement costs or NRC).
[11] For AG103, BT told us that the historical cost (HCA) value of assets is used (BT response dated 11 January to question 16c of the 3rd section 135 notice). BT does not include net current assets.
[12] This is mainly relevant for AG112. BT's 2015 AMD says about the AG112 attribution that "*the final apportionment excludes subsidiaries and associates as these are overseas activities and the AG112 costs are being attributed solely to UK activities".*
[13] BT response dated 11 January to question 16c of the 3rd section 135 notice. BT said that in 2014/15 it erroneously included goodwill in the asset base used to calculate the ROA element.

BT's use of the Pay and ROA methodology over time

2.8 The Pay and ROA methodology has been used by BT for many years. However, BT has applied this methodology to more cost categories and the amount of cost attributed on this basis has increased over time. Table 2.3 summarises the operating cost that has been attributed from cost categories using the Pay and ROA methodology since 2007/08.

Table 2.3: Cost categories attributed using the Pay and ROA methodology, £m

Cost category	2007/08	2008/09	2009/10	2010/11	2011/12	2012/13	2013/14	2014/15
AG112	[✂]£400m to £450m	[✂]£500m to £1.0bn	[✂]£450m to £500m	[✂]£450m to £500m	[✂]£400m to £450m	[✂]£500m to £1.0bn	[✂]£500m to £1.0bn	[✂]£500m to £1.0bn
AG103	-	-	-	-	-	[✂]£100m to £150m	[✂]£100m to £150m	[✂]£50m to £100m
COMCOS	-	-	-	-	-	[✂]£100m to £150m	[✂]£50m to £100m	[✂]£50m to £100m
AG409	-	-	-	-	-	-	[✂]£10m to £50m	[✂]£10m to £50m
AG410	-	-	-	-	-	-	[✂]£50m to £100m	[✂]£50m to £100m
Total	[✂]£400m to £450m	[✂]£500m to £1.0bn	[✂]£450m to £500m	[✂]£450m to £500m	[✂]£400m to £450m	[✂]£500m to £1.0bn	[✂]£500m to £1.0bn	[✂]£500m to £1.0bn
% change yoy		46%	(22%)	(1%)	(7%)	113%	(0%)	(1%)

Note that these are the costs recorded against these cost categories as at 'level 1' of BT's cost attribution system (see Section 3 of the June 2015 CAR Consultation). Some of these categories, for example AG112, will pick up additional costs as other cost categories are exhausted. This means that the total cost eventually attributed from these cost categories may be higher than the amounts shown in the table.

2.9 We understand that until 2012/13, the Pay and ROA methodology was only applied to the costs included in AG112 (Corporate costs). The methodology was applied to additional cost categories in 2012/13 and 2013/14 with the introduction of AG103 (TSO support functions), COMCOS (Openreach overheads), AG409 and AG410 (BT Wholesale and Openreach general software costs respectively). We provide further background on each of these categories below.

AG112 (Corporate costs)

2.10 The amount of cost attributed via AG112 (Corporate costs) has varied over time as shown in Table 2.4. Over time, the majority of costs in AG112 have been associated with BT's corporate functions (OUC C) and BT TSO (OUC T, formerly BT Operate (BTO) and BT Innovate and Design (BTID)). In 2009/10 a large amount of cost was also included from 'Group consolidation units' which BT told us mostly related to a 'regulatory provision'.[14]

[14] BT response dated 21 January 2016 to question 1.5 of the 4th CAR section 135 notice.

Table 2.4: Costs in AG112 by OUC

OUC	07/08	08/09	09/10	10/11	11/12	12/13	13/14	14/15
Corporate (C)	[✂] £250m to £300m	[✂] £300m to £350m	[✂] £250m to £300m	[✂] £250m to £300m	[✂] £350m to £400m	[✂] £350m to £400m	[✂] £350m to £400m	[✂] £400m to £450m
BT Operate (A)	[✂] £50m to £100m	[✂] £100m to £150m	[✂] £50m to £100m	[✂] £100m to £150m	[✂] £10m to £50m			
BTID (D)	[✂] £50m to £100m	[✂] £150m to £200m	[✂] £10m to £50m	[✂] £10m to £50m	[✂] £10m to £50m			
BT TSO (T)						[✂] £200m to £250m	[✂] £200m to £250m	[✂] £200m to £250m
Group consolidation (G)			[✂] £100m to £150m	[✂] £0m to £(10)m				
Other	[✂] £(10)m to £(50)m	[✂] £(10)m to £(50)m	[✂] £0m to £10m	[✂] £10m to £50m	[✂] £10m to £50m	[✂] £10m to £50m	[✂] £0m to £(10)m	[✂] £0m to £10m
Total	[✂]£400m to £450m	[✂] £500m to £1.0bn	[✂] £450m to £500m	[✂] £450m to £500m	[✂] £400m to £450m	[✂] £500m to £1.0bn	[✂] £500m to £1.0bn	[✂] £500m to £1.0bn
% change yoy		46%	(22%)	(1%)	(7%)	49%	(5%)	5%

Source: BT response dated 21 January 2016 to question 1.5 of the 4th CAR section 135 notice and BT response dated 18 December 2015 to question 1 of the 3rd CAR section 135 notice. These are the costs at level 1 of the cost attribution system.

2.11 In recent years, the biggest change in the amount of cost recorded in AG112 came in 2012/13 when costs included in this category increased by 49% after the creation of BT TSO. Following the creation of BT TSO, BT reviewed the costs in BT TSO and included some of these costs in AG112.

2.12 BT has also included additional costs in AG112 over time. For example, in 2013/14 BT included Group Communications and Corporate Finance in AG112, having previously used a different attribution rule for these group functions. In a 2014 presentation to Ofcom, BT's auditors PwC said "we note that moving from a detailed analysis of costs to a more general support allocation does not result in an outcome with greater cost causality. Also we note that in recent periods the activities of the group corporate finance function have not been associated with any regulated market. However, the impact is not material".[15]

2.13 The variant of the Pay and ROA methodology applied to AG112 has also changed over time. Until 2011/12, AG112 was attributed based on actual Pay and ROA. In 2011/12 BT changed the attribution rule to factorised Pay and ROA. In a 2012 presentation to Ofcom, BT said that the change was made because the use of pay "biases costs towards [lines of business] with high cost per employee".[16] The effect of the change to factorised pay was to move more cost from AG112 into divisions with

[15] "BT regulatory financial statements: audit status and findings", 28 July 2014, slide 19.
[16] "Ofcom briefing on regulatory financial statements", 28 June 2012, slide 8.

relatively higher staff numbers; in particular Openreach. BT justified this change at the time on the basis of improved cost causality.[17]

AG103 (TSO support functions)

2.14 BT TSO was created in 2012/13 following the merger of two of BT's divisions: BT Operate (BTO) and BT Innovate and Design (BTID). Following a review of BT TSO costs, BT introduced AG103 in 2012/13 to capture costs associated with TSO support functions.

2.15 We understand that prior to the formation of TSO, overhead costs from BTO and BTID were attributed on the basis of either employee numbers or pro-rata to previously allocated costs.[18] Following the introduction of AG103, these TSO overhead costs were attributed using the Pay and ROA methodology (using TSO pay and ROA on TSO-managed fixed assets).

2.16 In its 2012/13 Reconciliation report[19], BT justified the change in attribution by reference to cost causality and consistency with the methodology it already used for AG112 (Corporate costs). The same report indicates that the impact of introducing AG103 alongside AG102 (TSO operational costs) was to add around £17m to regulated markets in 2012/13.[20,21]

COMCOS (Openreach overheads)

2.17 The COMCOS methodology was introduced in 2012/13; the same year as AG103 (TSO support functions).

2.18 BT's 2012/13 Reconciliation report says that Openreach overheads were previously attributed based on Openreach pay.[22] The introduction of COMCOS meant that Openreach overheads were attributed on the basis of Openreach Pay and ROA on Openreach fixed assets. BT justified the change by reference to cost causality and consistency, saying it "is more cost causal because it reflects the nature of these activities more accurately, recognising that some overheads are not only influenced by the number of employees but also the activities of running the business. The

[17] "Ofcom briefing on regulatory financial statements", 28 June 2012, slide 8. This slide cites 'improved cost causality' as the reason for the change.
[18] For example, in its 2012/13 Reconciliation report, BT said that "*prior to the merger of BTO and BTID, BT took account of their various activities separately by using numerous different cost drivers, but there was a large amount of these costs that remained general and unspecified. These "fixed costs" were allocated pro-rata to costs with known drivers"* (page 32). Also, the 2013 Deloitte report for BT said that "*previously, BT TSO overheads were attributed on a pro rata basis in proportion to the costs of the groups supported*" (page 46) and that "*previously, the group corporate overhead costs incurred in BT TSO were attributed based on FTEs or previously attributed LoB pay costs*" (page 48).
[19] Each year BT publishes a reconciliation report in which it explains and justifies any methodology changes it has made during the year. The reconciliation report also includes an estimate of the impact of the change.
[20] BT 2012/13 Reconciliation report, page 18
[21] We note that the 2014 LLU WLR charge control used 2011/12 as the base year and not 2012/13. In that charge control we therefore did not include the 2012/13 methodology changes made by BT. We said at paragraph A22.39 of the charge control statement that "*we do not consider that our duties would be best achieved in the context of these charge controls by undertaking a detailed evaluation of each of these allocations".*
[22] BT 2012/13 Reconciliation report, page 31

methodology is also consistent with the treatment of corporate overheads."[23] BT estimated that the impact of this change was to add around £9m of cost to regulated markets in 2012/13.[24,25]

AG409 and AG410 (BT Wholesale and Openreach general software)

2.19 AG409 and AG410 were introduced in 2013/14. These two activity groups were introduced by BT as part of its transition to a new cost attribution system (moving from ASPIRE to REFINE). ASPIRE sometimes needed to be run multiple times in order to generate outputs while REFINE was designed so that multiple runs were not necessary. BT explained that the introduction of these two activity groups helped reduce this requirement for multiple runs.[26]

2.20 As demonstrated by BT's 2014 Systems Reconciliation Report, the introduction of REFINE did not have a material impact on the costs reported in the RFS.[27]

BT's description of the nature of these costs

2.21 When BT has applied the Pay and ROA methodology to additional cost categories or types of costs over time, it has in the past usually justified this change by reference to cost causality, as described in the previous sub-sections.

2.22 However, in its response to the June 2015 CAR Consultation, BT argued that many of the costs attributed using the Pay and ROA methodology were 'unattributable' with respect to causality; that is, it did not consider it was possible to identify a specific activity that caused the costs to be incurred.

2.23 BT nevertheless needed to establish an attribution rule for these costs. BT said that many of these costs "relate to all BT Group activities".[28] BT also said that "any appropriate attribution base for overheads would need to aggregate different costs types, including elements of capital and operating costs. We consider that a base that mixes staff and capital costs is an appropriate one as our corporate functions manage a business in which both people and assets are key."[29] In its Detailed Attribution Methodology BT says that corporate costs (recorded in AG112) are incurred as a result of "management of the employees within the company" and "management of the assets of the company to create a return".[30] Therefore, BT appears to consider that while it is not possible to associate these general overheads with a specific activity, they can be said to be generally incurred as a result of all the activities undertaken by BT. The Pay and ROA methodology is based on the broad

[23] BT 2012/13 Reconciliation report, page 31
[24] BT 2012/13 Reconciliation report, page 18
[25] As per footnote 21, we note that the 2014 LLU WLR charge control used 2011/12 as the base year and not 2012/13.
[26] BT said that these activity groups "were created in 2013/14 to replace the previous Aspire loopback processing" (BT response dated 21 January 2016 to question 1.6 of the 4th CAR section 135 notice).
[27] BT's ASIG paper RA14-076 also estimates that the impact of introducing a number of new activity groups (including AG409 and AG410) to remove the need for multiple runs did not have a material impact on regulated market costs.
[28] BT, June CAR Consultation response, page 15,Table at paragraph 36
[29] BT, June CAR Consultation response, page 13, paragraph 26, bullet 3
[30] 2013/14 Detailed Attribution Methodology, page 124. BT uses similar wording to justify the use of Pay and ROA methodology for AG103 on page 122 of the 2013/14 Detailed Attribution Methodology.

activities of i) managing/paying employees and ii) earning a return on the assets employed.

What we said in November

2.24 In the November 2015 CAR Consultation we said that, where possible, general overheads should be attributed according to the specific activities that caused them to be incurred during the year, in line with causality.[31] We recognised that identifying specific activities is not straightforward and the degree to which a cost can be said to be caused by a particular activity may be difficult to assess. Indeed, BT told us that little management information exists which could help attribute the costs from these five categories to particular lines of business or products.[32] However, as far as possible, where evidence exists, or a coherent argument can be made, to associate a cost with a specific activity we considered that an appropriate attribution rule would reflect that relationship rather than defaulting to categorising the cost as one that cannot be associated with a specific activity and hence be causally attributed.[33]

2.25 We recognised however that it may not be possible to associate all of the costs in these five categories with specific activities.

2.26 We undertook a review of the costs in these five categories and identified the following concerns:

i. Some of the costs attributed using the Pay and ROA methodology can be causally attributed. For example, we considered that we could identify a causal attribution rule for around a third of the costs in AG112.[34]

ii. The Pay and ROA methodology does not take account of all information and does not provide an objective attribution methodology for "unattributable" costs. Where causality was difficult to identify, we said that an objective attribution rule could i) attribute costs across all BT's activities or ii) attribute costs in proportion to those that can be causally attributed (i.e. those costs that had already been attributed). We did not consider that the Pay and ROA methodology was objective because:

- It did not take account of all BT's activities; for example, it excluded non-pay costs associated with property, contractors, television production and sports rights.

[31] For example, many of the general overheads costs are pay or people-related costs (such as software, training and expenses) so it might be appropriate to attribute these costs using management information such as timesheets where that information indicated the activities, products or lines of business that these people had worked on during the year.
[32] BT response dated 23 February 2016 to question 1.7 of the 4th CAR section 135 notice.
[33] For some costs we said that it may be possible to identify a strong link between the costs incurred and a specific activity, for example, where the size of an insurance premium is directly affected by pay costs then there is a strong causal relationship between the activity of paying people and the size of insurance premiums. For other costs the link between a specific activity and the cost incurred may be weaker, for example, the activity of employing and paying people results in HR costs being incurred, even though changes in the number of people employed may not have an immediate impact on HR costs. In this case we considered that a coherent argument could be made to associate the activity and the cost incurred.
[34] Proportions for the other cost categories were shown in Table 4.5 of the November 2015 CAR Consultation.

- It attributed a higher proportion of costs from AG112 to regulated markets (more than a half) than we would expect if the costs were attributed in proportion to those that could be causally attributed (less than a third).[35]

iii. BT made errors in the way it applied the methodology. We considered that the Pay and ROA methodology was not accurately applied since i) it included capitalised pay twice (once in the pay element and again in the ROA element via its inclusion in the asset base) and ii) the 10.8% WACC used by BT to calculate the ROA element did not reflect Ofcom's most recent decisions on the BT WACC.

2.27 To remedy our concerns regarding causality, we broke down the five cost categories into more granular costs and proposed alternative attribution rules where we considered we could identify causality. We noted that in reviewing the costs in these categories we had typically disaggregated the costs by OUC[36] descriptions (e.g. Group Finance, Group Legal) or by F8 code[37] (e.g. internally developed software, insurance). We considered that this provided a more granular view of the cost categories but recognised that it would be possible to analyse these costs in more detail (e.g. split the Group Finance team into smaller sub-teams). We said that more detailed assessment may lead to different proposals in relation to causality, but we considered that there was a balance to be struck between the granularity of costs reviewed, the time available to carry out the review and the likely materiality of the impact of changing the attribution rule on the costs of regulated services. We considered that the level of granularity we had considered was appropriate and proportionate for the purposes of this review but that a more or less granular review may be appropriate in other cases.

2.28 Where causality was difficult to identify we proposed an attribution rule that we considered was more objective than the Pay and ROA methodology; that is, one that included all the activities of BT (proxied by what BT had spent its money on during the year) and led to an outcome more in line with what we would expect in terms of the amount of costs attributed to regulated markets.[38] The PAC (previously attributed costs) rule that we proposed included:

- Current pay costs;
- Non-pay costs, excluding POLOs (payments to other local operators), other operating income and software capitalisation credits;

[35] Based on a high level review of the 2013/14 Regulatory Financial Statements, we considered this could range from 20%to 30% (paragraph 4.57 of the November 2015 CAR Consultation).
[36] Organisational Unit Code. BT's 2015 AMD says "The codes for OUCs follow a hierarchical structure, with the first level of the OUC code defining the highest level of the organisation unit and the subsequent letters of the OUC code representing the more detailed sub-divisions within the top-level organisation unit. For example, OUC code K, represents BT Wholesale, and code KB represents a subsidiary organisational unit within BT Wholesale" (page 8). We have mostly considered BT's 2-digit OUCs, which refer to the largest units sitting under each of the line of business (e.g. Openreach Finance within Openreach).
[37] BT's 2015 DAM says "general ledger codes are grouped into 'F8 codes', which represent groups of similar general ledger codes. One or many GL Codes are aggregated to an F8 code" (page 8). F8 codes usually describe the type of cost (e.g. a pay cost or non-pay cost).
[38] In paragraph 4.78 of the November 2015 CAR Consultation We noted that BT had previously attributed some costs from these categories using pay costs. However, we considered that pay costs alone might not capture the broader view of activities that we wanted to capture.

- Capital costs. We included capital expenditure (capex) in the PAC attribution rule though we sought stakeholders' views on alternative measures of capital cost such as depreciation and ROA.

2.29 We also said that:

- the PAC rule should only include costs relevant to the line of business associated with the cost category. For example, the costs relevant to AG112 were all BT Group's costs while the costs relevant to AG103 were the costs of TSO.
- all BT's UK and overseas costs should be included in the PAC attribution rule unless BT could demonstrate that only UK or only overseas costs were relevant; for example, if a particular team only supported UK or overseas operations.
- Transfer charges should be excluded from the PAC attribution rule.

2.30 We noted that, in 2013/14, our PAC attribution rule would attribute around 24% of costs in AG112 to regulated services compared to more than 50% under the Pay and ROA methodology.[39]

2.31 In the November 2015 LLCC Consultation we therefore made a base year adjustment to reflect the impact of:

i. Attributing costs using the causal cost drivers we had identified; and

ii. Attributing all other costs using the relevant PAC variant (e.g. BT Group PAC, Openreach PAC, TSO PAC or BT Wholesale PAC).

2.32 Table 2.5 summarises the attribution rules that were reflected in the base year adjustment made in the November 2015 LLCC and the proportion of costs that each rule applied to.

Table 2.5: Attribution rules reflected in November 2015 LLCC base year adjustment

Attribution rule	AG112	AG103	COMCOS	AG409	AG410
Employees	14%				
Pay		63%	22%		
Relevant revenue	2%				
Insurance	17%				
Openreach product revenue			18%		
Openreach engineering team pay			9%		37%
No cost driver identified (PAC)	67%	37%	52%	100%	63%
Total	100%	100%	100%	100%	100%

Source: Ofcom

[39] Proportions for the other cost categories were shown in Table 4.8 of the November 2015 CAR Consultation. We noted at footnote 4 of the November 2015 CAR Consultation that in 2014/15 some services were moved from Wholesale Residual markets into regulated markets so the impact of our proposals in 2014/15 would be greater than in 2013/14, all else equal.

Stakeholder responses

2.33 We summarise below stakeholder responses in relation to i) our concerns around the causality, objectivity and accuracy of the Pay and ROA methodology and ii) the definition of PAC to be applied to costs in these five categories where causality is difficult to identify. Stakeholder responses relating to attribution rules we proposed to apply to specific costs (e.g. Research and Innovation) are summarised in the relevant section below.

Causality

2.34 FTI, in a report commissioned by BT, said that "we agree that there are some cost categories which had been allocated using the [Pay and ROA methodology] for which a more cost causal approach could be identified, although we do consider that it is reasonable to apply a proportionality test to assess the impact of a disaggregated approach to allocation before increasing the complexity of the cost allocation system".[40] Although BT argued that its existing Pay and ROA methodology was appropriate, BT considered that Ofcom had "proposed alternative methodologies which in general would be appropriate with respect to the RAP".[41]

2.35 Vodafone said that "it should be self-evident that if a cost has one set of cost drivers 'A', but is allocated using a completely different set of cost drivers 'B', there is a high likelihood that costs causally incremental to some products will be wrongly allocated to other products. This is a clear breach of the cost causality principle".[42]

Objectivity

Nature of costs where causal cost drivers were difficult to identify

2.36 TalkTalk and Vodafone both said that even if causality was difficult to identify for particular costs, this did not mean that there was no causal link between the cost and specific cost drivers or activities. In other words, even if causality was difficult to identify, this did not mean that the cost was a fixed and common cost.[43]

2.37 TalkTalk said that BT's LRIC model supports an argument that many of these costs are incremental or scalable rather than fixed and common.[44] Therefore, even if causality was difficult to identify, TalkTalk said that a "suitable proxy needs to be used which approximates what causes the cost".[45] If these costs were genuinely fixed and common, TalkTalk said that either none of these costs should be attributed to regulated products or PAC should be used since it is akin to an EPMU approach[46]

[40] FTI, November 2015 CAR Consultation response, page 24, paragraph 5.9
[41] BT, November 2015 CAR Consultation response, page 10, Paragraph 54
[42] Vodafone, Supplementary November 2015 CAR Consultation response, page 1, paragraph 3
[43] For example, paragraph 3.8 of TalkTalk's response and paragraph 3.10-3.11 of Vodafone's response to the November 2015 CAR Consultation.
[44] TalkTalk, November 2015 CAR Consultation response, page 7, paragraph 3.10
[45] TalkTalk, November 2015 CAR Consultation response, page 7, paragraph 3.11
[46] Equi-proportionate mark whereby fixed and common costs are attributed in proportion to incremental costs.

and it would mean that both the 'incremental' and 'common' proportion of these costs were attributed the same way.[47]

2.38 Vodafone said that "BT's objections to Ofcom's conclusion appear to be largely based on an assumption that the great majority of costs to which the Pay and ROA methodology is applied are common costs. This assumption is neither credible nor supported with evidence by BT".[48] Vodafone said that a cost category may contain both avoidable costs and common costs. However, the presence of some common costs within accost category does not mean that the cost category is a common cost in its entirety, or even substantially.[49] Vodafone stressed that there was a difference between being unable as yet to identify causality and concluding there is no causality.[50]

2.39 Vodafone also said that "it is reasonable for Ofcom to consider the likelihood that Pay and ROA is a reasonable default proxy for the unknown cost drivers, given the fact that for every cost category where cost drivers have been identified, Pay and ROA has revealed itself to be a poor proxy for those cost drivers".[51]

2.40 Deloitte said that "the nature of the costs that BT is currently attributing using the Pay and ROA approach are, by their nature, overheads and therefore it is difficult to establish a strong causality link with any particular activity for these cost categories. In this sense, FTI's conclusions that 'it is not meaningful to seek a cost causality relationship between these cost categories and individual parts of BT's business, or individual services' and that 'all apportionment methodologies which allocate these costs across all products in a reasonable way are equally valid' are reasonable."[52]

Whether Pay and ROA takes account of all BT's activities

2.41 BT said that the Pay and ROA methodology does reflect all its activities. BT said "we exclude non-pay operating costs as these represent neither value adding processes carried out by our own staff (directly employed or contracted) nor utilisation of our operating assets."[53]

2.42 FTI said that "Ofcom's assumption that non-pay operating costs such as property, contractors, television production costs and sports rights costs represent activities is inconsistent with the generally accepted approach to defining activities in the context of an activity based costing system. At a very simple level an activity based costing system includes three components: resources, activities and outputs…there is a clear distinction between resources, or inputs the business consumes which typically include staff costs, raw material and other goods and services. Activities are the processes by which a business consumes resources to produce goods and services".[54] FTI added that "given that an activity means some form of value adding process or task represented by staff or asset utilisation, it is clear that the activities associated with non-pay input costs will be included in a pay and assets base as all activities or tasks will involve an input of staff or asset in the activity by which they are

[47] TalkTalk, November 2015 CAR Consultation response, page 8, paragraph 3.17
[48] Vodafone, November 2015 CAR Consultation response, page 5, paragraph 3.2
[49] Vodafone, November 2015 CAR Consultation response, page 5, paragraph 3.5
[50] Vodafone, November 2015 CAR Consultation response, page 6, paragraph 3.10
[51] Vodafone, Supplementary November 2015 CAR Consultation response, page 2, paragraph 7
[52] Deloitte, November 2015 CAR Consultation response, page 16
[53] BT, November 2015 CAR Consultation response, page 7, paragraph 31
[54] FTI, November 2015 CAR Consultation response, page 25 to 26, paragraphs 5.12 to 5.14

associated with goods or services sold".[55] Deloitte generally agreed with FTI's comments though it noted that non-pay operating costs associated with contractors are not included in the Pay and ROA base but they would reflect activities undertaken by staff.[56]

2.43 TalkTalk said that "BT argues for a variety of specious reasons that non-pay operating costs should not be included in the attribution base to attribute overheads costs where a single driver is not used (such as finance and legal). This lacks cogency. It is clear that non-pay operating costs cause these overheads to some degree since there are contracts to arrange, suppliers to manage, invoices to pay etc."[57]

2.44 Vodafone said that "FTI claims that non-pay operating costs are resources rather than activities, but that pay and operational assets (i.e. non-pay capital costs) are activities. Vodafone does not accept that the ABC framework is the only basis upon which to define what an activity is. Ofcom made no reference to the ABC framework in its consultation, and it seems clear [that] Ofcom's use of the work 'activity' suggests a broad definition that is perfectly capable of encompassing non-pay operating costs. Even if the definitions used by FTI are accepted, they do not provide support for FTI's claims. It makes no sense to classify non-pay capital costs, for example the amount paid for a length of plastic duct tubing as a 'task that an organisation undertakes' (i.e. as an activity)."[58]

2.45 Vodafone also said that if 'activities' excludes the non-pay operating costs then all non-pay costs should be excluded, including non-pay capital costs.[59]

2.46 Vodafone considered that FTI's distinction between 'resources' and 'activities' is "inaccurate and creates a false dichotomy between the two categories".[60] If 'resources; include all the inputs a business consumes and all resources are allocated to activities then Vodafone said "it is simply wrong to claim that some expenditure (e.g. non-pay operating cost) is a resource but not also an activity, and that other expenditure (e.g. pay and non-pay capital cost) is an activity but not also a resource – activities include all expenditure, including non-pay operating costs".[61] Vodafone said that If the term 'activity' is narrowly defined as tasks performed by BT staff, then the Pay and ROA methodology wrongly includes some costs (non-pay capital costs) which are not activities.[62]

Proportion of costs attributed to regulated markets using Pay and ROA

2.47 BT said that Ofcom has no basis for asserting that, if these costs cannot be causally attributed, Ofcom might expect the proportion of costs attributed to regulated markets

[55] FTI, November 2015 CAR Consultation response, page 27, paragraph 5.18
[56] Deloitte, November 2015 CAR Consultation response, page 17
[57] TalkTalk letter dated 29 January 2015.
[58] Vodafone, Supplementary November 2015 CAR Consultation response, page 2, paragraphs 10 to 12
[59] Vodafone, Supplementary November 2015 CAR Consultation response, page 2, paragraph 13
[60] Vodafone, Supplementary November 2015 CAR Consultation response, page 3, paragraph 15,
[61] Ibid.
[62] Vodafone, Supplementary November 2015 CAR Consultation response, page 3, paragraph 16

to be similar to the overall percentage of costs attributed to regulated markets in the Regulatory Financial Statements.[63]

Accuracy

2.48 BT questioned whether the concerns Ofcom raised were errors. It said that "capitalised pay costs are part of the activity of constructing an asset and its subsequent utilisation and thus is in accordance with our methodology of allocating overheads on a base of weighted pay (which is a measure of value adding process whether capitalised or expensed) and assets (which are a measure of asset utilisation and should be included at the full value)."[64] BT added that its choice of a single cost of capital was for "reasons of operational efficiency".[65]

2.49 BT said that even if these concerns did constitute errors, the solution would be to amend the calculation.

2.50 FTI and Deloitte agreed with Ofcom that the ROA element of the Pay and ROA methodology should reflect the appropriate cost of capital.[66] However, Deloitte noted that it may be difficult, within BT's cost attribution system, to capture the different cost of capital applied to the various assets in BT's network.[67]

2.51 In relation to the inclusion of capitalised pay in both the pay and ROA elements of the Pay and ROA methodology, Deloitte agreed with Ofcom's assessment and said "it would seem more appropriate to remove capitalised pay from the pay element of the Pay and ROA base".[68]

2.52 Vodafone said that it should be self-evident that "no reasonable definition of 'activity' can result in some items of expenditure (e.g. capitalised pay of BT employees) being counted twice, and other economically equivalent items of expenditure (e.g. capitalised pay of external contractors doing exactly the same job as BT employees) being counted only once."[69]

PAC definition

Pay costs

2.53 TalkTalk agreed that pay costs should be included in PAC.[70] No other stakeholders specifically commented on the inclusion of current pay costs in the definition of PAC.

Non-pay costs

2.54 FTI said that non-pay costs do not represent activities and should not be included in PAC. FTI said that Ofcom had recognised that some non-pay costs are not proportionate to the level of activity associated with the cost when it excluded POLOs

[63] BT, November 2015 CAR Consultation response, page 7, paragraph 33
[64] BT, November 2015 CAR Consultation response, page 8, paragraph 38
[65] Ibid.
[66] FTI, November 2015 CAR Consultation response, page 30, paragraph 5.29
[67] Deloitte, November 2015 CAR Consultation response, page 17
[68] Deloitte, November 2015 CAR Consultation response, page 17
[69] Vodafone, Supplementary November 2015 CAR Consultation response, page 3, paragraph 19
[70] TalkTalk, November 2015 CAR Consultation response, page 10, paragraph 3.25

from the PAC definition.[71] FTI said that the same argument could be applied to all non-pay costs, in particular sports rights and goods bought for resale.[72] In relation to sports rights, FTI said that the value of sports rights is not linked to the amount of activity undertaken to acquire the rights.

2.55 TalkTalk agreed that non-pay operating costs should be included in PAC.[73]

2.56 In relation to the exclusion of software capitalisation credits Vodafone was concerned that would mean that the capitalised element would be double counted; once under capital expenditure and again under non-pay costs (since the negative non-pay amount has been excluded).[74]

Capital costs

2.57 BT did not agree with Ofcom's proposal to include capital expenditure in the definition of PAC. BT said that capex is not a business activity. BT added that such an approach "would be inconsistent with an accounting policy that does not capitalise overheads, as the overheads would not be allocated to an activity in the same periods as the corresponding operating costs (i.e. depreciation and ROA)".[75]

2.58 BT said that including capex would "add to the complexity of charge control models as in order to allow us to recover these costs they would need to be adjusted over the same period as that in which the capex is recovered with the additional of a cost of capital to compensate us for the delay in their recovery".[76]

2.59 BT also said that it had concerns about the practicability of implementing Ofcom's proposals in the short term. BT said "our cost accounting system does not have a separate base for attributing capital expenditure. The capital expenditure codes are not attributed separately but only as part of the total asset balances".[77] BT said that the work required to account for this "would be substantial and could not be reasonably completed in time for the completion of the 2015-16 RFS".[78]

2.60 Deloitte said that capex can vary year to year and this could lead to significant differences in the amount of cost allocated to services each year.[79] It considered that an attribution based on capitalised assets could reduce variability and inconsistencies over time.[80]

2.61 Vodafone had a similar view, saying that, while in principle it thought the use of capex was consistent with the likelihood of some causal link between the level of overhead costs and new capital investment, a "PAC cost base which incorporates new capital investment might therefore cause a volatility in cost allocations between years, as capital investment shifts its focus from one set of products to another".[81] Vodafone

[71] FTI, November 2015 CAR Consultation response, page 32, paragraph 6.10
[72] FTI, November 2015 CAR Consultation response, page 32, paragraph 6.11
[73] TalkTalk, November 2015 CAR Consultation response, page 10, paragraph 3.25
[74] Vodafone, November 2015 CAR Consultation response, page 7, paragraph 3.13 to 3.16
[75] BT, November 2015 CAR Consultation response, page 9, paragraph 45
[76] BT, November 2015 CAR Consultation response, page 9, paragraph 46
[77] BT, November 2015 CAR Consultation response, page 9, paragraph 48
[78] BT, November 2015 CAR Consultation response, page 10, paragraph 53
[79] Deloitte, November 2015 CAR Consultation response, page 19
[80] Ibid.
[81] Vodafone, November 2015 CAR Consultation response, page 8, paragraph 3.21

noted that the RFS is used for a range of purposes which require a stable estimate of allocations, such as the base year in charge controls such as leased lines.[82]

2.62 TalkTalk considered that it was arguable that no capital measure should be included in PAC, particularly for assets such as duct which it considered caused little overhead cost.[83] However, if a capital measure was included, TalkTalk considered that capex was superior to depreciation and ROA because[84]:

- Capex directly caused some overhead costs where there was a substantial effort when an asset was acquired (e.g. group finance effort required in relation to planning, procurement and invoicing). If the asset required managing or maintaining TalkTalk considered that this effort was already reflected in the pay and non-pay costs. Including depreciation and/or ROA would mean that the asset would receive a "double allocation" of overhead cost.

- Using depreciation or ROA implies that the overhead cost caused by the asset is zero when it is acquired but the same in the first year of its life until the last year of its life. TalkTalk said this was not realistic.

- Using ROA would mean that £100m of long-life assets such as duct would cause 3-4 times more overhead than £100m of shorter life equipment such as electronics. TalkTalk said this was not realistic.

- Use of capex does not rely on BT's approach to capitalising pay.

- Use of depreciation and ROA depends on additional assumptions around asset life, valuation methodologies and cost of capital.

2.63 FTI also said that intangible assets[85] should be excluded from the PAC base on the basis that they are not an activity.[86]

Ofcom's response and decision

2.64 Having considered stakeholders responses to the November 2015 CAR Consultation we have decided to make a base year adjustment in the LLCC for the general overheads currently attributed using the Pay and ROA methodology.

2.65 In this section we set out:

- Our concerns about the Pay and ROA methodology in using this attribution method for the purpose of allocating costs for the LLCC.

- Our decision on the base year adjustments to make where we have specifically identified a causal attribution rule for particular general overhead costs.

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[82] Vodafone, November 2015 CAR Consultation response, page 8, paragraph 3.22
[83] TalkTalk, November 2015 CAR Consultation response, page 10, paragraph 3.26
[84] TalkTalk, November 2015 CAR Consultation response, page 10, paragraphs 3.28 to 3.33
[85] We understand that FTI was referring to all intangibles other than software.
[86] FTI, November 2015 CAR Consultation response, page 35, paragraphs 6.23 to 6.25

- Where we have not specifically identified a causal attribution rule, our decision on the base year adjustments to ensure that the base year data we use represent the best available information for the purpose of the charge control, in light of the considerations set out in our assessment framework in Annex 27.

2.66 We then set out our review of general overheads within each of the five cost categories currently attributed using the Pay and ROA methodology.

2.67 We note that we responded to TalkTalk's suggestion that no common costs should be attributed to regulated products in section 5, volume II.

Concerns about the Pay and ROA methodology

2.68 For the purposes of setting prices for the 2016 LLCC we continue to be concerned that certain costs are attributed to leased lines services on the basis of the Pay and ROA methodology.

2.69 Following a review of the costs attributed by BT using the Pay and ROA methodology (set out in detail later in this section), we consider that a causal cost driver can be identified for many of the costs currently attributed using the Pay and ROA methodology. For example, we have identified factors which influence the size of some costs (e.g. risk factors for insurance premiums) and information indicating the level of activity undertaken (e.g. the number of training days provided by Openreach Learning Academy). Where causal cost drivers can be identified, it is important to reflect this in the base year to ensure that costs are only included in the charge control to the extent that they relate to leased lines. If costs were attributed to regulated services, such as leased lines, to which they did not relate, this would result in higher wholesale prices for BT's customers and this could distort competition in more competitive (unregulated) markets; i.e. markets in which these wholesale prices represent inputs. Stakeholders generally agreed that the specific attribution rules we proposed in the November 2015 CAR Consultation to reflect causality were appropriate, although we discuss comments on individual costs later in this section.

2.70 However, for other costs attributed by BT using the Pay and ROA methodology, we have not been able to identify a causal cost driver. Some stakeholders said that where causal cost drivers cannot be identified for some costs, this does not mean that there is no causal link at all between those costs and specific drivers; i.e. it does not mean that these costs are fixed and common. We agree. In the November 2015 CAR Consultation we adopted in places BT's terminology in describing those costs where we could not identify specific cost drivers as being 'unattributable' with respect to causality. This was intended to mean only that we could not identify a specific causal cost driver. It did not signify that we thought these costs were all fixed and common. [87]

2.71 It may be the case that there are factors which influence the size of the cost for which it is difficult to identify specific cost drivers, but those factors are difficult to identify; for example, it seems likely that the size of the Group Finance and Group Legal

[87] We agree with TalkTalk's observation that for the purposes of its LRIC model BT assumes that many of the costs attributed using the Pay and ROA methodology are variable. Our analysis of the main CVRs representing the costs of AG112 in BT's LRIC model in 2013/14 indicates that 69% to 100% of these costs were considered by BT to be variable for the purposes of the LRIC model.

functions will grow with the business to some degree but it is difficult to capture the nature of that relationship. Further, information which could enable those factors to be identified or be used to indicate the level of activity undertaken is not available; for example, a timesheet system recording what projects staff in corporate, finance or legal functions worked on during the year.

2.72 In the context of attributing costs for which it is difficult to identify specific cost drivers, we consider that an attribution rule appropriate for the purpose of setting prices should not create any undue bias towards any part of BT; i.e. the outcome should be neutral in terms of the costs attributed to regulated markets. If the base year costs for leased lines included costs that had been attributed on a basis that unduly skewed the attribution towards leased lines (and other regulatory markets) this would result in higher wholesale prices for BT's customers and this could distort competition in more competitive (unregulated) markets; i.e. markets in which these wholesale prices represent inputs.

2.73 In the absence of information to the contrary, we consider a neutral outcome would result in general overheads being attributed broadly in line with how other costs, in aggregate, have been attributed. As shown in Table 2.6, the proportion of general overheads attributed to regulated markets in 2014/15 was almost twice as much as we would expect from a neutral attribution basis which attributed costs in proportion to how other costs had been attributed. In 2014/15 the Pay and ROA methodology attributed 59% of costs in AG112 (Corporate costs) to regulated markets while the total costs (including depreciation and ROA) attributed to regulated markets was around 32%.[88] In the absence of any objective evidence to the contrary, we do not consider that attributing more than half of AG112 costs[89] to regulated markets represents a neutral attribution when, in the context of all of BT's costs, less than a third of costs are attributed to regulated markets.

Table 2.6: Costs attributed to regulated markets in 2014/15

Approach	Regulated markets £m	Total £m	Regulated markets %
Existing Pay and ROA	**n/a**	**n/a**	**59%**
Opex incl. depreciation	3,933	14,540	27%
MCE	12,485	19,002	66%
ROA @ 10% WACC	1,249	1,900	66%
Total costs incl. depreciation and ROA	**5,182**	**16,440**	**32%**

Note: Existing Pay and ROA percentage is from BT response dated 11 January 2016 to question 15 of the 3rd CAR section 135 notice. Other amounts and percentages are derived from figures reported on page 27 of BT's 2014/15 Regulatory Financial Statements.

2.74 The reason why the Pay and ROA methodology attributes more than half of AG112 costs to regulated markets is because BT's approach excludes costs that tend to be less significant for regulated markets, in particular non-pay costs and, to a lesser extent, depreciation. In 2014/15 the 'pay' element used in the Pay and ROA

[88] Similarly, around 11% of costs in AG112 (Corporate costs) were attributed to leased lines markets while approximately 6% of total costs (including depreciation and ROA) were attributed to leased lines markets.

[89] We focus in this section on the costs of AG112 (Corporate costs) since these costs are attributed across the whole of BT, as opposed to the other four costs categories using Pay and ROA which are attributed to particular lines of business (i.e. TSO, Openreach or BT Wholesale). Our comments in this section also apply to the other cost categories.

methodology attributed 41% of AG112 costs to regulated markets and the ROA element attributed 68% of costs to regulated markets.[90] However, non-pay costs and depreciation (which are both excluded from the Pay and ROA methodology) attributed 12% and 54% of costs to regulated markets respectively.[91] Therefore, the Pay and ROA methodology does not result in a neutral attribution of costs for the purposes of setting prices because it excludes significant input costs such as non-pay costs (for example contractor, property and power costs) and capital costs (in the form of depreciation).

2.75 We consider that a neutral attribution as described above would also be consistent with a view that the costs for which it is difficult to identify specific cost drivers are to some extent related to all the activities of BT business.

2.76 In response to the November 2015 CAR Consultation several stakeholders commented on what might constitute an 'activity' for the purposes of attributing costs across 'all activities'. In the context of costs for which it is difficult to identify specific cost drivers our use of the word 'activity' in the November 2015 CAR Consultation was broader than the narrow definitions suggested by BT and its consultants. Given that these are costs for which it is difficult to identify specific cost drivers or activities that cause the costs, we consider it is more helpful to think of activities as the outputs provided by the inputs used by BT to deliver its products and services. We therefore consider that an attribution rule that took into account all of BT's input costs would i) provide a neutral attribution basis and ii) reflect all of BT's activities.

2.77 We also consider that the Pay and ROA methodology includes errors for the following reasons:

- Capitalised pay is included twice – first in the 'pay' element and second in the fixed asset base to which ROA is applied. While we consider that capitalised pay could reasonably be included, we consider that it should only appear once in the attribution base. We disagree with BT that capitalised pay uniquely represents two distinct activities. Given that capitalised pay tends to attribute more cost to regulated markets than current pay[92] BT's approach of including it twice in the attribution rule results in more costs being attributed to regulated markets than if it was only included once.

- The 10.8% WACC used by BT in the 'ROA' element does not reflect the WACC set by Ofcom. The most recent decision by Ofcom prior to the 2014/15 Regulatory Financial Statements was in the 2014 LLU WLR Statement where Ofcom set a BT Group WACC of 10.0%, an Openreach copper access WACC of 8.6% and a Rest of BT WACC of 10.8%. If a single WACC was used the most appropriate WACC would be the BT Group WACC of 10.0% but BT has used a WACC of 10.8%. In any case, we do not consider it is

[90] BT response dated 11 January to question 15 of the 3rd CAR section 135 notice. The 41% figure for AG112 represents factorised current and capitalised pay. The equivalent percentage for current pay is 28% and for current and capitalised pay it is 34%. The ROA percentage assumed a WACC of 10.8%.
[91] Ibid. The non-pay percentage of 12% is before the adjustments described later in this section (e.g. excluding POLOs). Following these adjustments the percentage is 16%.
[92] BT said that in 2014/15 an attribution rule for AG112 (corporate costs) based on current pay only would have attributed 28% to regulated markets but basing it on current and capitalised pay would have attributed 34% to regulated markets. For factorised current and capitalised pay (which is what AG112 actually used in the Pay and ROA methodology) the percentage would have been 41%. BT response dated 11 January to question 15 of the 3rd CAR section 135 notice.

appropriate to use a single WACC where Ofcom has set different WACCs for different parts of BT's business. For example, BT uses a WACC of 10.8% to attribute costs to Openreach copper access products rather than the 8.6% Openreach copper access WACC most recently determined by Ofcom. BT's approach increases the proportion of costs that are attributed to regulated markets.

- BT's approach excludes some costs that we consider relate to pay and assets but are recorded within non-pay costs, such as contractor costs, property costs and sports rights costs. Omitting these costs results in more costs being attributed to regulated markets than if they were included since costs recorded as non-pay are generally less significant for regulated markets (see paragraph 2.74).[93]

2.78 In light of the above, we believe it would not be appropriate to use the Pay and ROA methodology to attribute general overheads for the purpose of the setting this charge control.

Base year adjustments

2.79 Following a review of the costs attributed using the Pay and ROA methodology we have decided to make the following base year adjustments in the 2016 LLCC.

2.80 Where we have identified a causal cost driver we include a base year adjustment to reflect the impact of attributing that cost using that driver. The review of costs is set out in detail later in this section, but Table 2.7 summarises the cost drivers we have identified and the proportion of operating costs in each category that are attributed using that cost driver. Across all five cost categories we have identified cost drivers for around 37% of operating costs.

Table 2.7: Attribution rules reflected in November 2015 LLCC base year adjustment

Attribution rule	AG112	AG103	COMCOS	AG409	AG410
Employees	12%	-	-	-	-
Pay	-	80%	-	-	-
Relevant revenue	1%	-	-	-	-
Insurance	14%	-	-	-	-
Openreach product revenue	-	-	15%	-	-
Openreach engineering team pay	-	-	11%	-	22%
Openreach learner days	-	-	23%	-	-
Personal computers	1%	-	-	-	-
Employee broadband offer	3%	-	-	-	-
Residual	0.5%	-	-	-	-
No cost driver identified (PAC)	69%	20%	51%	100%	78%
Total	100%	100%	100%	100%	100%

Source: Ofcom

[93] As explained above, we consider that it would be appropriate to attribute costs for which it is difficult to identify specific cost drivers using all of BT's input costs.

2.81 Where we have not been able to identify a causal cost driver, we have made a base year adjustment to attribute these costs using a different PAC methodology, which we define below.

2.82 BT's estimate of the impact of these base year adjustments is summarised in Table 2.8.

Table 2.8 Estimated impact of base year adjustment for Pay and ROA methodology, 2014/15, £m

	Operating costs	MCE	FAC
TI			
AG112	(4.5)	(1.3)	(4.6)
AG103	(0.5)	0.2	(0.5)
COMCOS	(0.8)	0.0	(0.8)
AG409	(0.7)	(1.6)	(0.9)
AG410	(0.1)	(0.1)	(0.1)
Total	**(6.7)**	**(2.8)**	**(6.9)**
Ethernet			
AG112	(21.3)	(6.6)	(22.0)
AG103	(2.9)	1.5	(2.8)
COMCOS	(4.2)	0.1	(4.2)
AG409	0.0	0.0	0.0
AG410	(0.6)	(0.8)	(0.7)
Total	**(29.0)**	**(5.8)**	**(29.6)**

Source: Ofcom, based on data from BT provided on 9 February 2016 in response to question 1 of the 8th CAR section 135 notice

2.83 We note that these adjustments result in approximately 37% of costs from AG112 being attributed to regulated markets (7% to leased lines) compared to 59% under the existing Pay and ROA methodology (11% to leased lines).[94]

2.84 In the next section we describe the PAC attribution rule that we have decided to apply to costs for which we have not been able to identify a causal cost driver. We then set out our detailed review of the costs attributed using the Pay and ROA methodology and explain where we have been able to identify causal attribution rules.

Definition of PAC

2.85 We set out above that, in the context of attributing costs for which it is difficult to identify specific cost drivers, we did not consider the outcome of the existing Pay and ROA methodology was neutral in terms of the proportion of costs attributed to regulated markets and it excluded important input costs such as non-pay and depreciation costs. We also identified accuracy concerns with Pay and ROA.

2.86 We therefore consider that a PAC attribution rule should include all of BT's input costs encompassing current pay costs, non-pay operating costs and capital costs

[94] Derived from models provided by BT on 10 March 2016.

while also addressing the accuracy concerns we identified. We explain the input costs we have included in the PAC attribution under each of these headings below.

Current pay costs

2.87 No stakeholders disagreed with the inclusion of current pay costs in the PAC attribution rule. As set out in the November 2015 CAR Consultation we note that BT currently uses factorised pay when attributing AG112 but actual pay for the other four cost categories. We consider that a single attribution rule should be applied consistently to each of these categories.

2.88 We therefore include current pay costs in the PAC attribution rule. In order to only count capitalised pay once, capitalised pay is not included in current pay but is included within capital costs (discussed below).

Non-pay costs

2.89 BT disagreed with the inclusion of non-pay costs in the PAC attribution rule on the basis that non-pay costs were not an activity. As set out above, we consider that an attribution rule appropriate for the purpose of setting prices would include all of BT's input costs in order to achieve a neutral attribution and reflect all the activities of BT and we therefore include non-pay operating costs in the PAC attribution rule.

2.90 However, in the November 2015 CAR Consultation we proposed to exclude the following non-pay operating costs: POLOs, other operating income and software capitalisation credits.

2.91 We consider that POLOs should be excluded on the basis that they do not represent an input cost to BT. POLOs represent payments to UK and overseas operators to terminate services on other networks. BT makes these payments in two circumstances:

- Calls originate on BT's network but terminate on another network.
- Wholesale voice transit, where calls originate on another network, pass through BT's network, and terminate on another network.

2.92 In both cases POLOs relate to a service provided by another operator.

2.93 We exclude other operating income (which is largely related to scrap copper recovery and repayment works) on the basis that it does not represent an input cost to BT.

2.94 We proposed to exclude software capitalisation credits from the PAC attribution rule to try and ensure that costs were only attributed to the capitalised cost. However, we agree with Vodafone that in some circumstances, the exclusion of software capitalisation credits risks attributing costs to both the capitalised amounts and the operating cost amounts.[95] We have therefore only excluded software capitalisation

[95] Software operating costs are incurred by TSO and transferred to other lines of business, such as Openreach who then capitalise the cost. In this example there is an offsetting capitalisation credit within Openreach and the capitalised amount sits on the balance sheet. It would be appropriate to include software capitalisation credits in the case of AG112, which attributes costs across all of BT, since this will ensure the operating costs net off to zero (positive in TSO, negative in Openreach) and

credits from the PAC attribution rule where they are not offset by the corresponding operating costs in the same cost category. Further, BT told us that there are other capitalisation credits within non-pay. We consider that they should be excluded for the same reasons.[96]

Capital costs

2.95 In the November 2015 CAR Consultation we proposed to include capex within the PAC definition. We now consider that depreciation and ROA in PAC is, in light of our considerations set out above, a better measure of BT's capital costs for the purposes of setting prices because:

- Depreciation and ROA better reflects BT's input costs of delivering its products and services (including leased lines) than capex during the year; capex represents the purchase of assets which will support the delivery of products and services over a number of years, not just in the year of purchase. The inclusion of depreciation and ROA would also be more consistent than capex with the underlying costs used to inform prices; i.e., depreciation and ROA are used in the LLCC to determine the annual costs of providing leased lines (alongside pay and non-pay operating costs).

- Depreciation and ROA would be expected to lead to a less volatile attribution profile. For the purposes of setting prices this is desirable since it avoids the need for further adjustments to the attribution of overheads where the capex spend in the base year of a charge control does not represent a reasonable estimate of the average over the charge control period.

- We also note the practical difficulty of attributing costs robustly using capex in BT's current cost attribution system. This is a relevant consideration when setting prices because we need to be able to estimate the impact of our base year adjustments.

2.96 While it is possible that some specific costs may, in any one year, be related to capex (e.g. some specific finance costs of the type suggested by TalkTalk) we have not been presented with evidence of this and we do not consider that this is likely to hold true for the entirety of cost categories (e.g. Group Finance) at the level of granularity we have reviewed.

2.97 Having decided to include depreciation and ROA in the PAC methodology, we need to consider the following:

- Which WACCs to use when calculating ROA;

- Which assets to apply the WACC to; and

- The asset valuation and depreciation policy.

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general overheads are only attributed to the capitalised amount on the balance sheet in Openreach. However, costs in the other four categories are only attributed within lines of business and not the whole of BT. In the example of COMCOS and AG410 (which only relate to Openreach), including the capitalisation credit would mean that no costs are attributed to Openreach since the capitalisation credit and the capitalised amount net off to zero.

[96] BT response dated 11 January 2016 to question 15 of the 3rd CAR section 135 notice.

2.98 In relation to the WACC, we have used the WACCs reflected in the 2014/15 Regulatory Financial Statements. These were consistent with the disaggregated Openreach copper access and Rest of BT WACCs determined in the June 2014 LLU WLR Statement equal to 8.6% and 10.8% respectively.[97]

2.99 In BT's Regulatory Financial Statements the disaggregated WACCs determined by Ofcom are applied at a component level.[98] General overheads from these five cost categories however are attributed at an earlier stage of the cost attribution system, before the component level. It is therefore necessary to assign a WACC to each cost category receiving costs from these five categories. We consider that the WACC assignments made by BT for the purposes of estimating the base year adjustments are reasonable.[99]

2.100 In relation to the assets the WACC is applied to, we consider that in principle this should include all tangible and intangible assets as well as net current assets where these represent the input costs required by BT to deliver its products and services. FTI considered that certain intangible assets should be excluded.

2.101 Table 2.9 shows the categories of intangible asset reported by BT in its 2015 annual report.

Table 2.9: BT categories of intangible asset, £m

	2015 NBV	2015 NBV %
Goodwill	1,396	44%
Customer relationships and brands	63	2%
Telecoms licences and other	294	9%
Internally developed software	1,279	40%
Purchased software	138	4%
Total	3,170	

Source: page 166 of BT's 2015 annual report. NBV = Net book value.

2.102 Some categories of intangible asset are only recognised for accounting purposes following the purchase of a subsidiary. In BT's case this includes goodwill and 'customer relationships and brands' intangible assets. While we consider that these assets potentially represent an input cost to BT, these assets are only recognised for accounting purposes for acquisitions and not for organic parts of the company such

[97] Since the 2014/15 Regulatory Financial Statements form the base year for the charge control we considered it was reasonable to estimate the impact of our PAC attribution using the same WACCs that were used to prepare the 2014/15 Regulatory Financial Statements. In Annex 30 we explain that we have decided to undertake a three-way disaggregation of the BT WACC rather than the two-way disaggregation reflected in the 2014/15 Regulatory Financial Statements. However, we consider that estimating the impact of our PAC attribution using the WACCs used to prepare the 2014/15 Regulatory Financial Statements provides a reasonable estimate of the base year adjustment relating to our PAC attribution.

[98] See for example pages 122-124 of the 2014/15 Regulatory Financial Statements where the WACC applied to each component is shown.

[99] In its response dated 8 March 2016 to question 4 of the 8th CAR section 135 notice BT said that it had used i) the Openreach copper access WACC where a significant proportion of the plant group or activity group costs were attributed to copper markets (e.g. the access duct activity group), ii) the rest of BT WACC where an insignificant proportion of the plant group or activity group costs were attributed to copper markets (e.g. access fibre plant groups) and iii) the BT Group WACC where the plant groups and activity groups costs were attributed to all markets (e.g. corporate costs).

as Openreach. We have therefore excluded the goodwill and 'customer relationships and brands' intangible assets from the fixed asset base that ROA is applied to.

2.103 In relation to the asset valuation and depreciation policy, we consider that it is appropriate to use the same asset valuation and depreciation policies as those used to prepare the Regulatory Financial Statements.[100] This would be consistent with the underlying costs used to inform prices in the LLCC (which are derived from the Regulatory Financial Statements).

2.104 In summary, we consider that the capital costs included in the PAC definition should be depreciation and ROA, where ROA is calculated using the disaggregated WACCs determined by Ofcom; the asset base includes all fixed and net current assets (excluding certain intangible assets), and the valuation and depreciation policies are consistent with those used in the Regulatory Financial Statements.

Other elements of PAC

2.105 The costs included in the PAC rule will reflect the lines of business associated with each of the five cost categories. For example, for AG112 all group-wide costs will be included in PAC while for COMCOS and AG410 only costs associated with Openreach will be included in PAC.

2.106 In general, costs associated with overseas operations will also be included in PAC, unless there is specific evidence that particular functions only support UK operations. As explained further below, this applies to some Group HR teams (OUC CH in AG112) and computing assets (OUC TT in AG112).

2.107 In the November 2015 CAR Consultation we proposed that transfer charges be excluded from PAC.[101] No respondents disagreed with this proposal so transfer charges have been excluded from PAC.

Summary of PAC

2.108 For each of the five cost categories, Table 2.10 shows the proportion of cost that would be attributed to regulated markets in 2014/15 using our definition of PAC and also shows how this PAC attribution compares to the current Pay and ROA attribution.

Table 2.10. Proportion of costs that would be attributed to regulated markets, 2014/15

	AG112	AG103	COMCOS	AG409	AG410
	Corporate costs	TSO support functions	Openreach overheads	BT Wholesale general software	Openreach general software
Current pay	28%	18%	83%	14%	85%

[100] Assets tend to be valued on a CCA basis in the Regulatory Financial Statements, with access duct subject to RAV adjustments.
[101] November 2015 CAR Consultation, page 37, paragraphs 4.100 to 4.105

Non-pay (excluding POLOs, etc)	15%	17%	37%	-4%[102]	71%
Depreciation	54%	47%	98%	6%	98%
ROA (using disaggregated WACCs)	71%	47%	97%	14%	99%
PAC (weighted average of above)	33%	33%	92%	6%	92%
Existing Pay and ROA	*59%*	*39%*	*93%*	*13%*	*94%*

Source: BT response dated 11 January 2016 to question 15 of the 3rd CAR section 135 notice and email dated 23 February 2016. Note: The percentages take into account the relevant lines of business (e.g. AG103 attributed to TSO PAC). All AG112 costs are attributed to overseas operations with exception of certain computing costs in OUC TT.

2.109 In the next section we set out our detailed review of the costs attributed using the Pay and ROA methodology.

Review of costs attributed using the Pay and ROA methodology

2.110 We set out in this section our review of the cost in each of the five cost categories that are currently attributed using the Pay and ROA methodology. As explained above, where we have been able to identify a causal attribution rule, we have decided to make a base year adjustment to reflect the causal rule. Where we have not been able to identify a causal attribution rule, we have decided to make a base year adjustment to attribute costs using PAC, as explained above.

AG112: Corporate costs

Introduction

2.111 BT's 2014/15 Accounting Methodology Document says that AG112 is used to "apportion head office type costs and balance sheet values such as the Chairman's office and the Group secretariat".[103]

2.112 In our November 2015 CAR Consultation, we provided a breakdown of the costs included in AG112 and proposed alternative attribution rules. For most costs in AG112 we disaggregated the cost by BT's OUC description (e.g. Group Finance, Group Legal). However, one of the OUCs (OUC CD 'analysis code') contained various types of costs so we identified some of the costs in this OUC separately (e.g. insurance, employee broadband).

2.113 Tables 2.11 and 2.12 summarise the breakdown of costs in AG112 in 2013/14 and 2014/15 and shows the attribution rule that we proposed in the November 2015 CAR Consultation and reflected in the LLCC proposals alongside the attribution rule that we have decided to reflect in the base year adjustment for the 2016 LLCC. Table

[102] This negative percentage arises because BT did not exclude capitalisation credits from its initial modelling when estimating the impact of our base year adjustment relating to AG409 (which attributes all costs using BT Wholesale PAC). While this is an error in the modelling, given the relatively small amount of costs from AG409 that are attributed to leased lines markets ([✂]£0m to £10m), this does not have a material impact on the base year adjustment for leased lines. BT told us that the correct percentage for non-pay, excluding capitalisation credits is c2% (which changes the PAC percentage in the table from 6% to regulated markets to 7% (email dated 14 March 2016)), but this has not been reflected in the base year adjustment.

[103] Page 128, BT's 2014/15 Accounting Methodology Document.

2.11 details the costs that we split out by OUC while Table 2.12 shows the costs included in OUC CD (analysis code).

Table 2.11: Costs in AG112 in split by OUC and cost attribution proposals

OUC	Description	13/14 £m	14/15 £m	November proposal	Base year adjustment
TM	BT TSO CIO for Group	[✂]£50m to £100m	[✂]£10m to £50m	BT Group PAC	BT Group PAC
TU	BT TSO Research & Innovation (except OUC TUC – licensing)	[✂]£10m to £50m	[✂]£10m to £50m	BT Group PAC **/Residual**	BT Group PAC
	BT TSO Research & Innovation – licensing team (OUC TUC)	-	[✂] £0m to £10m	**n/a**	**Residual**
TR	BT TSO CIO for Retail	[✂] £0m to £10m	[✂] £0m to £10m	BT Group PAC	BT Group PAC
CF	Group Finance (including financial shared service centre)	[✂] £50m to £100m	[✂] £50m to £100m	BT Group PAC	BT Group PAC
CR	Corporate Communications	[✂] £10m to £50m	[✂] £10m to £50m	BT Group PAC	BT Group PAC
CG	Group Legal	[✂] £10m to £50m	[✂] £10m to £50m	BT Group PAC	BT Group PAC
CP	Corporate Special Projects	[✂] £10m to £50m	[✂] £10m to £50m	BT Group PAC	BT Group PAC
TT	General group computing assets[2]	[✂] £50m to £100m	[✂] £50m to £100m	BT Group PAC	BT Group PAC
	Personal computers		[✂] £0m to £10m	n/a	**Personal computers**
CH	Group Human Resources	[✂] £10m to £50m	[✂] £50m to £100m	Employees	Employees
TA	BT TSO Architecture & Global IT platforms	[✂] £50m to £100m	[✂] £50m to £100m	BT Group PAC	BT Group PAC
CC	Learning Academy – HR	[✂] £10m to £50m	[✂] £10m to £50m	Employees	Employees
CO	Strategy, Policy and Portfolio	[✂] £0m to £10m	[✂] £10m to £50m	BT Group PAC	BT Group PAC
	Ofcom licence fee	[✂] £10m to £50m	[✂] £0m to £10m	Relevant revenue	Relevant revenue
CD	Analysis code (insurance, employee broadband, etc)	[✂] £50m to £100m	[✂]£100m to £150m	See Table 2.12	
Other OUCs	Various	[✂]£10m to £50m	[✂] £10m to £50m	BT Group PAC	BT Group PAC
Total		[✂]£500m to £1.0bn	[✂]£500m to £1.0bn		

Source: Table 4.9 of the November 2015 CAR Consultation and BT response dated 18 December 2015 to questions 1, 2 and 8 of the 3rd CAR section 135 notice.

Table 2.12: Costs in OUC CD (analysis code) included in AG112

Cost	13/14 £m	14/15 £m	November proposal	Base year adjustment
Employers Liability insurance	[✂]£10m to £50m	[✂]£10m to £50m	Attribute to lines of business consistent with BT's internal methodology and within lines of business based on BT's proposal in Table 4.14 of the November 2015 CAR Consultation	Attribute to lines of business consistent with BT's internal methodology and within lines of business based on BT's proposal in Table 4.14 of the November 2015 CAR Consultation
Employment Practice Liability insurance	[✂]£0m to £10m	[✂]£0m to £10m		
Business Interruption insurance	[✂]£10m to £50m	[✂]£10m to £50m		
Employee healthcare insurance	[✂]£10m to £50m	[✂]£10m to £50m		
Employee death in service benefit insurance	[✂]£0m to £10m	[✂]£0m to £10m		
Motor Insurance	[✂]£10m to £50m	[✂]£10m to £50m		
General Liability insurance	[✂]£0m to £10m	[✂]£10m to £50m		
Other insurance	[✂]£0m to £10m	[✂]£0m to £10m		
Total insurance	[✂]£100m to £150m	[✂]£50m to £100m		
Employee Broadband Offer	[✂]£10m to £50m	[✂]£10m to £50m	BT Group Employees	Employees taking up offer
Other	[✂]£10m to £50m	[✂]£0m to £10m	BT Group PAC	BT Group PAC
Total	[✂]£50m to £100m	[✂]£100m to £150m		

Source: Table 4.10 of the November 2015 CAR Consultation and BT response dated 18 December 2015 to question 2 of the 3rd CAR section 135 notice. Note: [1]'Other costs' in OUC CD were negative in 2013/14 due to software capitalisation credits.

2.114 For each of these costs we provide a description of the cost, refer to any comments from stakeholders or additional information obtained from BT on the proposed rule, and set out our decision on the base year adjustment.

BT TSO CIO for Group (OUC TM) - [✂]£10m to £50m (November proposal: BT Group PAC; decision: BT Group PAC)

Description of cost

2.115 BT describes its Chief Information Office (CIO) unit activities as "the design, build and deployment of services for the line of business customers they support and the systems, networks and processes that support these services".[104]

2.116 In November we noted that BT said that "this category represents a small proportion of the total cost of the TSO CIO for Group function. This value relates to development programmes associated with Group platforms that support central administrative functions such as finance, HR, supply chain management, facilities management and

[104] BT's 2013/14 DAM, page 41

group regulatory finance".[105] We understand this to mean that the costs recorded in AG112 from this OUC represent the costs of developing and supporting the software and technology used by BT Group functions (Finance, HR, etc) necessary to carry out their work. [106]

What we said in November

2.117 In the November 2015 CAR Consultation, we said that we were not able to identify a causal attribution rule because we could not associate the costs of OUC TM (TSO CIO for Group) with specific activities. We therefore proposed to attribute these costs (and any corresponding software credits) using the BT Group PAC methodology. In the November 2015 LLCC Consultation we proposed to make a base year adjustment to reflect the allocation of these costs using BT Group PAC.

Stakeholder responses

2.118 No stakeholders commented on this specific proposal.

Ofcom's response and decision

2.119 We have not been able to identify an attribution rule that would better reflect causality for the costs of OUC TM (TSO CIO for Group) in AG112. We have therefore decided to make a base year adjustment to allocate these costs (and any corresponding software credits) using BT Group PAC.

BT TSO Research and Innovation (OUC TU) - [✂]£10m to £50m (November proposal: BT Group PAC/Residual; decision: BT Group PAC/Residual)

Description of cost

2.120 The TSO Research and Innovation team "run various programmes to find new ways of using technology for BT to generate revenues or transform costs".[107] In addition, "it also provides the executive leadership for all of BT's research and innovation activities, and is responsible for setting the development priorities, technological direction, innovation skills and culture across all of BT. It also engages and develops

[105] BT response to the June Consultation, paragraph 53

[106] Some of the cost in OUC TM is offset by software capitalisation credits in other OUCs (BT response dated 21 January 2016 to question Q1.10b of the section 135 notice dated 15 December 2015). For example, BT TSO incurs an operating cost doing work on behalf of BT Group. BT Group then capitalises this operating cost, meaning that there is an offsetting 'negative' operating cost and a corresponding addition to capital employed on the balance sheet. To the extent that the operating costs of OUC TM are offset by software capitalisation credits, we would expect both the operating cost and software capitalisation credit to be attributed using the same attribution rule. In this way, the TSO operating cost and the software credit would net out, leaving only the balance sheet item to attribute to subsequent cost categories. Since the balance sheet item is included within the cost base of the relevant Group OUC (e.g. Group Finance, Group HR) then it will be attributed in line with the proposed rule for that OUC

[107] BT response dated 21 January 2016 to question 1.11 of the 4th section 135 notice dated 15 December 2015.

relationships with external parties to benefit from external knowledge and innovation".[108]

What we said in November

2.121 In the November 2015 CAR Consultation we said that some research and innovation programmes will be directly associated with or are intended to benefit existing products, while other programmes will be concerned with researching new technologies and designing new products and solutions. In addition, some research and innovation programmes are more general in nature and not associated with particular products; for example, BT might research how it could operate more efficiently across the business. The nature and mix of the research and innovation undertaken is likely to differ year to year. For these reasons, associating all of the costs of TSO Research and Innovation with a specific activity for the purpose of cost attribution is difficult.

2.122 We proposed that where research and innovation is directly associated with or is intended to benefit existing products, then, while it is difficult to associate this cost with specific activities, we consider that the costs could reasonably be attributed across all existing products. We proposed to allocate such research and innovation costs using BT Group PAC.

2.123 However, where research and innovation is focused on speculative research or developing new products, solutions or technologies then we did not consider that it would be appropriate to attribute such costs to existing products. We proposed that the costs of these programmes could reasonably be attributed to residual markets.

2.124 We said that we would explore with BT the research programmes it was undertaking in order to understand if the research could be split into these two categories. For modelling purposes we asked BT to estimate the impact using the BT Group PAC methodology and in the November 2015 LLCC Consultation we proposed to make a base year adjustment to reflect the allocation of these costs using BT Group PAC.

Stakeholder responses

2.125 BT said that "research considered 'speculative' at the outset may in fact be found to benefit regulated services once in progress or concluded. It is far from clear that such research would relate solely to residual services given its nature, nor indeed will all research ultimately result in product development."[109] Deloitte, in a report commissioned by BT, said that "the distinction that Ofcom is trying to draw between research and innovation that is intended to benefit existing services and research and innovation that is speculative appears subjective at best, and may lead to spurious or incorrect conclusions".[110]

2.126 BT also noted that we had said that 'there might be a separate question about how these costs are recovered by BT in relevant charge controls'.[111] BT considered that the 'consistency with regulatory decisions' requirement of the RAP implies that

[108] BT response dated 18 December 2015 to question 8 of the 3rd section 135 notice dated 4 December 2015.
[109] BT, November 2015 CAR Consultation response, page 29, paragraph 163
[110] Deloitte, November 2015 CAR Consultation response, page 22
[111] November 2015 CAR Consultation, page 44, footnote 117

Ofcom should not introduce a cost attribution methodology that is inconsistent with the way that costs are recovered under a charge control.[112]

2.127 TalkTalk said that it understood that no R&D programmes were relevant to LLU/Ethernet and only one programme was relevant to VULA.[113] TalkTalk therefore considered that the genuine R&D cost caused by LLU/Ethernet was far less than the 29% that would be attributed to these services using a PAC methodology. TalkTalk suggested that the costs of R&D programmes should be directly attributed to lines of business or alternatively, R&D programmes that have no relevance to regulated services should not be attributed to regulated services. TalkTalk recommended that Ofcom should further investigate the breakdown of the research and innovation costs.

Ofcom's response and decision

2.128 We asked BT for further information on the activities undertaken by OUC TU (TSO Research and Innovation). This unit is made up of five teams. These are explained below alongside the approximate proportion of costs represented by each team in 2014/15.

- **Engagement and Operations (TUA): 14%**. This team "manages and maintains the Government, industry and university engagement, including BT's non-UK research relationships, along with the running of Adastral Park. Responsibilities include the business planning, budget management and day to day operational activities and processes".[114]

- **Research and Technology team (TUB): 46%**. This team "is responsible for identifying and evaluating novel technical solutions and the development of intellectual property, creating prototypes, building proofing concepts and undertaking trials, along with providing technological based insight into the various BT business lines".[115]

- **Licensing team (TUC): 10%**. This team "is responsible for the licensing of BT owned intellectual property to other organisations".[116]

- **Patenting team (TUE): 14%**. This team "is responsible for the management of BT's patent portfolio, including filing applications and dealing with litigation claims".[117]

- **External Innovation (TUF): 16%**. This team "is responsible for the facilitation and increased efficiency of innovation within BT, achieving this by: building concept demonstrators and prototypes, articulating new commercial opportunities, running the company employee new ideas scheme, scouting for innovation globally, running the Adastral Park innovation showcases and Hothouses".[118]

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[112] BT, November 2015 CAR Consultation response, page 29, paragraph 164
[113] TalkTalk, November 2015 CAR Consultation response, page 12, paragraph 3.43
[114] BT response dated 18 December 2015 to question 8 of the 3rd section 135 notice dated 4 December 2015.
[115] Ibid.
[116] Ibid.
[117] Ibid.
[118] Ibid.

2.129 BT has confirmed to us that the licensing team in OUC TUC generates revenue from licensing BT's intellectual property rights and this revenue is allocated to residual markets.[119] In order to match revenues and costs and better reflect causality we consider that the costs of this licensing team should also be allocated to residual. We have therefore decided to make a base year adjustment to exclude the costs of this licensing team from leased lines services.

2.130 The majority of BT TSO Research and Innovation work is undertaken by the Research and Technology team (OUC TUB); it runs BT's research programmes or 'themes' as they are called within BT. BT told us that it does not record costs by research theme but it estimated the amount of staff resource used for each theme in 2014/15. The research themes worked on and estimated resource in percentage terms are shown in Table 2.13.

Table 2.13: BT's 2014/15 research themes and estimated resource percentage

Theme	Description	Estimated resource %
Future Networks	Research to deliver a simpler, more reliable, lower cost network, including improving customer service while reducing time to deliver new services and add innovative network capability. Includes core, access and home network research.	16%
Operational Transformation	Includes work process improvements such as optimising deployment of engineers.	9%
Security	Protecting networks from physical and cyber threats	9%
Data technologies	Using data to improve effectiveness and efficiency	6%
TV and content	Includes analysis to understand impact of entertainment services on network bandwidth requirements and approaches to differentiate fibre delivered services to improve quality and user experience.	12%
IT services	Optimising cloud services to simplify and increase their adoption and management.	9%
Customer service	Includes research on algorithms to diagnose network faults.	13%
Internet of things	Includes smart city technologies and services.	11%
Mobility, wireless and future voice	Includes research on new architecture for mobile and mobile/fixed convergence.	11%
Better future	Includes research on environmental impact minimisation to support BT's commitment to make sure its people, networks and technology work together to make BT a responsible business leader.	4%
		100%

Source: Derived from BT response dated 18 December to question 8c)iii of the 3rd CAR section 135 notice.

2.131 We asked BT whether it was possible to break down the research themes into those that relate to existing products and those that relate to future products, in line with our November 2015 CAR Consultation proposal. BT told us that, with one exception, it considered that each of the research themes supported both existing and future

[119] BT response dated 25 February to a follow up question to question 8 of the 3rd CAR section 135 notice.

products.[120] BT said that "we do not consider that these activities/themes are specific to particular products, product portfolios because the research conducted by these units generally has a dual focus on existing and future products, developing the potential of existing products and technologies to benefit all [lines of business] and then extending our learning to the development of new products and technologies".[121]

2.132 On the basis that BT's research themes relate to both existing and future products and BT does not record costs by research theme, we do not consider it would be possible to robustly allocate research costs between existing products and future products as we proposed in November. Even if this separation was possible, we recognise that a research project could initially be seen as supporting future products, but over time it could be seen as supporting existing products and from the perspective of setting prices in a charge control it would be difficult to identify the precise element of past and current research costs that support a particular group of regulated services, such as leased lines.

2.133 BT also told us that the current research themes run across and affect all lines of business such that it would not be possible to allocate research costs to particular lines of business as suggested by TalkTalk. We also consider that at least some of the research themes (for example operational transformation) support activities that may lead to cost savings in the future. We generally allow BT to recover the costs of such activities that are required to deliver future cost savings. We therefore consider it is reasonable that an appropriate share of these efficiency-enabling costs is included in the base data within the LLCC model.

2.134 Other than the costs of the licensing team (OUC TUC) described above we have not been able to identify an attribution rule that would better reflect causality for BT's TSO Research and Innovation costs. We have therefore decided to make a base year adjustment to allocate TSO Research and Innovation costs (except the licensing team) using BT Group PAC.

BT TSO CIO for Retail (OUC TR) - [✂]£0m to £10m (November proposal: BT Group PAC; decision: BT Group PAC)

Description of cost

2.135 While OUC TR in general relates to the CIO costs for BT Retail, we noted in November that the specific cost included in AG112 relates to UK Business Solutions (UKBS) Development which is BT's group-wide programme that captures the cost of systems separation activities.[122] These particular costs therefore relate to BT's commitment to the undertakings rather than the cost of running BT Retail.

What we said in November

2.136 In the November 2015 CAR Consultation, we said that we were not able to identify a causal attribution rule because we could not associate these systems separation costs with specific activities. We therefore proposed to attribute these costs using BT

[120] BT response dated 18 December 2015 to question 8c)iv) of the 3rd section 135 notice dated 4 December 2015. BT considered that the IT services research only supported existing products.
[121] BT response dated 18 December 2015 to question 8dc of the 3rd section 135 notice dated 4 December 2015.
[122] November 2015 CAR Consultation, page 44, paragraph 4.133

Group PAC. In the November 2015 LLCC Consultation we proposed to make a base year adjustment to reflect the allocation of these costs using BT Group PAC.

Stakeholder responses

2.137 No stakeholders commented on this specific proposal.

Ofcom's response and decision

2.138 We have not been able to identify an attribution rule that would better reflect causality for the systems separation costs included in OUC TR in AG112. We have therefore decided to make a base year adjustment to allocate these costs using BT Group PAC.

Group Finance (OUC CF) - [✂]£50m to £100m (November proposal: BT Group PAC; decision: BT Group PAC)

Description of cost

2.139 Group Finance includes the costs of Group Financial Control, Internal Audit, Tax and Treasury, Group Reporting, Group Regulatory Finance, Investor Relations and Corporate Finance. It also includes costs of an overseas operation (OUC CFR) that provides financial support to BT divisions such as accounts payable, business expenses, fixed asset registration, cash management and invoice management.[123]

2.140 In the November 2015 CAR Consultation we noted that BT said that there were separate finance teams in each of its lines of business (Openreach, Global Services, etc) and that the Group Finance teams are distinguished by their Group wide responsibilities.[124]

What we said in November

2.141 In the November 2015 CAR Consultation we said that we were not able to identify a causal attribution rule because we could not associate Group Finance costs with specific activities. We therefore proposed to attribute these costs using BT Group PAC. In the November 2015 LLCC Consultation we proposed to make a base year adjustment to reflect the allocation of these costs using BT Group PAC.

2.142 We also noted that BT had indicated that some sub-teams within Group Finance may exclusively support BT's UK or overseas operations rather than the whole group.[125] We said that, in principle, where BT can demonstrate that Group functions only support UK operations and not overseas operations, the attribution rule should reflect this.

Stakeholder responses

2.143 No stakeholders commented on this specific proposal.

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[123] In the November 2015 CAR Consultation we discussed this overseas operation in paragraphs 4.149 to 4.151 under the heading of OUC CFR (Financial shared service centre). We include this within the broader Group Finance (OUC CF) category here.
[124] November 2015 CAR Consultation, page 45, paragraph 4.137
[125] November 2015 CAR Consultation, page 45, paragraph 4.138.

Ofcom's response and decision

2.144 We have not been able to identify an attribution rule that would better reflect causality for the Group Finance costs included in AG112. We have therefore decided to make a base year adjustment to allocate these costs using BT Group PAC.

2.145 In its report in support of BT's June CAR response, FTI recommended that BT carry out an assessment of the degree to which its group functions support overseas activities.[126] FTI's report in support of BT's response to the November 2015 CAR Consultation includes an analysis of the extent to which Group HR costs support UK and overseas activities (which we take into account below when discussing Group HR costs) but BT has not provided any analysis of the support the Group Finance team provides to UK and overseas activities.[127] As a result, we have decided to make a base year adjustment to allocate these costs using BT Group PAC, which has the effect of attributing these costs across all of BT, including overseas operations.

2.146 However, we recognise that some of the Group Finance sub-teams may support only UK or overseas operations and this will be reflected in the Consistency Direction.

Corporate Communications (OUC CR) - [✂]£10m to £50m (November proposal: BT Group PAC; decision: BT Group PAC)

Description of cost

2.147 The Corporate Communications team produces the internal BT newsletter, communicates externally with the media and also internally across BT's divisions.

2.148 BT said that Corporate Communications was made up primarily of "pay costs relating to a range of internal and external communications, media relations and public affairs teams. All functions are responsible for Group-wide activities rather than [line of business]-specific communications and marketing".[128]

What we said in November

2.149 In the November 2015 CAR Consultation we said that BT told us that this unit does not use timesheet systems and it has not been able to identify any other internal management information that could be used to attribute these costs to specific lines of business or products.[129] We were not able to identify a causal attribution rule because we could not associate Corporate Communications costs with specific activities. We therefore proposed to attribute these costs using BT Group PAC. In the November 2015 LLCC Consultation we proposed to make a base year adjustment to reflect the allocation of these costs using BT Group PAC.

Stakeholder responses

2.150 No stakeholders commented on this specific proposal.

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[126] Paragraph 6.34, FTI August 2015 report
[127] BT said in its response dated 9 March 2016 to question 1.8 of the 4th CAR section 135 notice that "the majority of this team carry out work for all of BT, including overseas subsidiaries. Certain teams, however, work only on BT activities in the UK including Group Regulatory Finance (OUC CFB)".
[128] BT, June CAR Consultation response, page 19. paragraph 50
[129] BT response dated 23 February 2016 to question 1.7 of the 4th CAR section 135 notice

Ofcom's response and decision

2.151 We note that the amount of costs included in this OUC reduced by c[✂]£10m to £50m (-43%) in 2014/15. BT explained that "these costs decreased year on year mainly due to a [✂]£0m to £10m decrease in non-pay costs due to a department reorganisation whereby BT charitable donations are now shown against OUC CO" (Strategy, Policy and Portfolio).[130]

2.152 For Corporate Communications costs, we have not been able to identify an attribution rule that would better reflect causality. We have therefore decided to make a base year adjustment to allocate these costs using BT Group PAC.

Group Legal (OUC CG) - [✂]£10m to £50m (November proposal: BT Group PAC; decision: BT Group PAC)

Description of cost

2.153 BT said that the Group Legal team is "made up primarily of pay costs relating to BT's Group-wide legal teams, but also includes pay elements related to the BT Board and Operating Committee, and the Corporate Governance teams."[131]

What we said in November

2.154 In the November 2015 CAR Consultation, we said that where information from timesheets can be used to attribute Group Legal costs to particular lines of business or products then we consider that this information should be used to attribute costs since it would better reflect causality.[132]

2.155 However, BT told us that while the litigation and employment lawyers generally record their time, the commercial lawyers supporting customer and supplier contracts and other lawyers do not record their time.[133] On this basis, we were not able to identify a causal attribution rule because we could not associate Group Legal costs with specific activities. We therefore proposed to attribute these costs using BT Group PAC. In the November 2015 LLCC Consultation we proposed to make a base year adjustment to reflect the allocation of these costs using BT Group PAC.

Stakeholder responses

2.156 No stakeholders commented on this specific proposal.

Ofcom's response and decision

2.157 We have not been able to identify an attribution rule that would better reflect causality for Group Legal costs in AG112. We have therefore decided to make a base year adjustment to allocate these costs using BT Group PAC.

[130] BT response dated 11 January 2016 to question 4 of the 3rd CAR section 135 notice
[131] BT, June Consultation response, page 19, paragraph 52
[132] November 2015 CAR Consultation, page 47, paragraph 4.147
[133] BT response dated 23 February 2016 to question 1.7 of the 4th CAR section 135

Corporate special projects (OUC CP) - [✂]£10m to £50m (November proposal: BT Group PAC; decision: BT Group PAC)

Description of cost

2.158 BT said that "this category represents the cost of undertaking a wide range of corporate projects, the specific nature of which may vary significantly from year to year. These projects might include the transformation projects of the type outlined by Ofcom [in the June Consultation] but will also include one off internal consulting projects relating to, for example, corporate sponsorship, pensions and regulation."[134]

2.159 BT told us that some of the projects that this team worked on in 2013/14 and 2014/15 included Commonwealth Games sponsorship, trialling its flexible resource unit, organisational health projects and legal entity consolidation.[135] BT told us that all of the projects are corporate in nature.

2.160 BT also confirmed that in 2014/15 this OUC included [✂]£10m to £50m of costs associated with BT's acquisition of EE.[136]

What we said in November

2.161 In the November 2015 CAR Consultation we recognised that this team works on a number of different internal consultancy projects, the nature of which can change from year to year. BT told us that the costs currently recorded against Corporate Special Projects relate to corporate activities within BT Group rather than specific lines of business such as Openreach or Global Services.

2.162 On this basis, we did not consider that the costs currently recorded against Corporate Special Projects could be linked to specific activities for the purposes of cost attribution. We therefore proposed that these costs should be attributed using BT Group PAC. However, we said that where BT can map these projects to specific lines of business in future we would expect it to do so.

2.163 In the November 2015 LLCC Consultation we therefore proposed to make a base year adjustment to reflect the allocation of these costs using BT Group PAC. We also made a separate proposal in the November 2015 LLCC Consultation to exclude costs associated with BT's acquisition of EE.[137]

Stakeholder responses

2.164 No stakeholders commented on this specific proposal.

Ofcom's response and decision

2.165 In Annex 27 we explain that we make a base year adjustment to exclude EE acquisition costs. These costs were included in this OUC within AG112 in 2014/15. We have not been able to identify an attribution rule that would better reflect causality for the remaining Corporate Special Projects costs in AG112. We have therefore

[134] BT, June CAR Consultation response, page 18, paragraph 48
[135] BT response dated 21 January 2016 to question 1.14 of the 4th CAR section 135
[136] BT response dated 11 January 2016 to question 4 of the 3rd CAR section 135 notice.
[137] November 2015 LLCC Consultation, paragraphs 3.17 to 3.19

decided to make a base year adjustment to allocate the remaining costs using BT Group PAC.[138]

General group computing assets (OUC TT) - [✂]£50m to £100m (November proposal: BT Group PAC; decision: BT Group PAC/Personal Computers)

Description of cost

2.166 BT said that the costs of this OUC that are included in AG112 represent "depreciation charges relating to computing asset categories including Own Use Mainframes and Peripherals, Data Communications Equipment and Personal Computers. It also includes depreciation relating to accommodation plant used in support of data centres."[139]

2.167 Table 2.14 provides a breakdown of the depreciation charges recorded in this OUC that were allocated to AG112 in 2014/15. More than half of the cost relates to depreciation on computer mainframes and computer centres.

2.168 BT said that all of these assets are UK-based but that the data services can host applications used overseas. This is indicated in the final column of Table 2.14.

Table 2.14: Breakdown of depreciation costs in OUC TT in AG112 in 2014/15

Class of work	Description	2014/15 £m	% of total	UK/ overseas
COMPA	Computer mainframes and peripherals	[✂] £10m to £50m	54%	Both
ACPC	Accommodation plant – computer centres	[✂] £10m to £50m	17%	Both
COMPE	Personal computers	[✂] £0m to £10m	7%	UK
COMPF	Computer data comms equipment	[✂] £0m to £10m	13%	UK
ACPS	Accommodation plant – security	[✂] £0m to £10m	3%	Both
LIC	Licences for intangible assets (e.g. software)	[✂] £0m to £10m	6%	UK
Other			1%	
Total		[✂] £50m to £100m	100%	

Source: BT response dated 11 January 2016 to question 9b of the 3rd CAR section 135 notice.

[138] Note that in estimating the impact of attributing Corporate Special Projects using BT Group PAC, BT has omitted the costs associated with the EE acquisition since these have been removed in full from the base year.
[139] BT, June CAR Consultation response, page 24, paragraph 81

What we said in November

2.169 BT's 2014/15 AMD says that the COMPA, COMPE and COMPF classes of work relate to BT's own use general computers cost[140] while ACPC and ACPS are associated with network accommodation plant "necessary for the operation of network equipment, e.g. ventilation and cooling plant."[141]

2.170 For most of these computing costs we considered that it was difficult to associate the cost with specific activities. We therefore proposed to apply our BT Group PAC methodology to these costs since we were not able to identify a causal attribution rule.

2.171 For the category of personal computers (COMPE) we considered that there was an argument that the cost of personal computers is a function of the number of personal computers in use which in turn is linked to the number of employees using them. If these personal computers were used by office-based workers (rather than field engineers)[142] then a causal attribution rule might be achieved by attributing these costs on the basis of office-based employees (i.e. the employees actually using these personal computers). We said that we would investigate this possibility further with BT but noted that the cost of personal computers was a reasonably small proportion of the computing depreciation costs included in AG112 (15% in 2013/14, which has reduced to 7% in 2014/15[143]) such that we did not consider that this would have a significant impact on the attribution of the general group computing asset costs currently included in AG112.

2.172 Where the costs are incurred to support UK activities only (as shown in Table 2.14) we said we would expect a UK PAC to be used rather than a group-wide PAC. However, we noted that BT had modelled the impact of our proposal assuming that all these costs are attributed using a group-wide PAC. Therefore, in the November 2015 LLCC Consultation we proposed to make a base year adjustment to reflect the allocation of these costs using the BT Group PAC.

Stakeholder responses

2.173 No stakeholders commented on this specific proposal.

Ofcom's response and decision

2.174 BT told us that it holds information on the number of personal computers by line of business, as shown in Table 2.15.

Table 2.15: Personal computers by line of business in 2014/15

Line of business	Number of personal computers	% of total
Openreach	[✂]	30%
BT Business and	[✂]	25%

[140] BT, 2014/15 Accounting Methodology Document, page 337
[141] BT, 2014/15 Accounting Methodology Document, page 331
[142] Page 24 of the 2014/15 Accounting Methodology Document describes the computers in class of work COMPE as being "office computers".
[143] This proportion is likely to change year to year as personal computers, which BT assumes have 3-4 year asset lives, are replaced.

Consumer		
BT TSO	[✂]	20%
Global Services	[✂]	14%
BT Group	[✂]	9%
BT Wholesale	[✂]	2%
Total	[✂]	100%

Source: BT response dated 11 January 2016 to question 9d of the 3rd CAR section 135 notice.

2.175 We consider that including the information set out in Table 2.15 in the attribution rule for personal computers would be more cost causal since each line of business would only be attributed the costs of the personal computers that it uses. Within each line of business we consider that it would be appropriate to attribute these costs on the basis of pay costs for each line of business because the number and cost of personal computers for each line of business is likely to be linked to the number of employees using them. We have therefore decided to make a base year adjustment to allocate the costs of personal computers to lines of business based on the number of personal computers in each line of business and within lines of business based on the pay costs for that line of business (the Personal Computers methodology).

2.176 We have not been able to identify an attribution rule that would better reflect causality for the remaining general computing costs in OUC TT in AG112. We have therefore decided to make a base year adjustment to allocate the remaining costs using BT Group PAC. Where the computing costs are only incurred to support UK activities, as set out in Table 2.14, the BT Group PAC methodology used in our base year adjustment only includes costs associated with BT's UK operations.

Group HR (OUC CH) - [✂]£50m to £100m (November proposal: Employees; decision: Employees)

Description of cost

2.177 In the June 2015 CAR Consultation we said that Group HR costs are predominantly pay costs for staff involved in setting and maintaining BT Group's HR policies and processes and the management of BT's divisional HR staff and activities.

2.178 BT said that this category largely represents the pay costs associated with teams that manage Group HR policy. BT said that while each line of business (Openreach, Global Services, etc) has its own HR function, "Group HR is responsible for central policy, including the reward team, workforce management, employee relations and union negotiations around policy and pay".[144] BT said that line of business HR teams retain responsibility for career development and recruitment, although there had been a degree of centralisation in recent years.[145]

2.179 BT told us that as at July 2015 there were [✂] >1,000 employees within Group HR.[146] Most of these people work in teams that provide HR services to central functions; support HR functions in other lines of business; develop leadership

[144] BT, June CAR Consultation response, page 24, paragraph 78
[145] BT, June CAR Consultation response, page 24, paragraph 79
[146] BT response dated 18 December 2015 in response to question 10a of the 3rd CAR section 135 notice.

programmes and manage the pay, pension and well-being of employees.[147] The Group HR function also includes [✂] between 200-300employees[148] (20% of the total) who are associated with BT's Flexible Resource Unit (FRU). BT said the purpose of the FRU "is to provide a permanent flexible resource unit to manage variability in resource demands across the business, avoiding unnecessary short term [third] party spend. Staff in the FRU are seconded out to lines of business as and when the need arises".[149]

What we said in November

2.180 In the November 2015 CAR Consultation, we considered that Group HR costs are incurred as a result of employing people across BT and the attribution rule should reflect the divisions in which people work. We therefore proposed to attribute these costs using employees, represented by BT's factorised pay methodology. BT's factorised pay methodology attributes costs to lines of business based on the number of employees, and within lines of business costs are attributed using pay costs. We noted that this would be consistent with the way BT attributes the costs of other HR functions such as Openreach HR, which is attributed on the basis of Openreach pay.[150]

2.181 In relation to the costs of people in the FRU, we considered that where BT's management information reveals the lines of business to which these employees were assigned, we consider that the cost of these employees should be attributed to lines of business consistent with that information (and then within lines of business on the basis of pay if no further information is available). We said we would explore with BT whether information exists that could help attribute the costs of employees in the FRU.

2.182 In the November 2015 LLCC Consultation we proposed to make a base year adjustment to reflect the allocation of Group HR costs using BT Group employees.

Stakeholder responses

2.183 FTI, in a report commissioned by BT, said that BT's Group HR team had "identified two large teams which exclusively support UK staff. These are teams involved in Deployment (who manage the process of redeploying staff) and HR services (who undertake HR activities such as processing pre-employment checks, employment contracts, managing cases associated with low attendance, performance, grievances and discipline)".[151] Table 1 of FTI's report shows a breakdown of the sub-teams within Group HR and indicates that around 40% of group HR staff support both UK and overseas business, 45% support UK operations and 15% support overseas operations.

[147] Ofcom summary of BT response dated 21 January 2016 to question 1.17 of the 4th CAR section 135 notice.
[148] BT response dated 18 December 2015 to question 10b of the 3rd CAR section 135 notice
[149] BT response dated 18 December 2015 to question 10d of the 3rd CAR section 135 notice
[150] Page 43 of BT's 2014/15 Accounting Methodology Documents says that Openreach HR costs are attributed to AG401 which is the 'Openreach pay driver' activity group.
[151] FTI, November 2015 CAR Consultation response, page 19, paragraph 4.5

2.184 BT said that Ofcom's proposal to attribute the costs of all BT Group HR staff is "not an appropriate alternative to the existing methodology as it fails to consider that certain HR units are restricted to supporting geographic territories".[152]

2.185 In response to BT's comments, TalkTalk said that where Group HR teams only supported overseas operations, the costs should only be attributed to overseas activities.[153]

Ofcom's response and decision

2.186 We consider that attributing the costs of Group HR on the basis of employees would be more cost causal since Group HR costs are incurred as a result of employing people and this team supports the management and policies associated with staff.

2.187 We recognised in the November 2015 CAR Consultation that the attribution rule should reflect those circumstances where cost categories are only incurred to support UK activities or overseas activities.[154]

2.188 BT has confirmed that the Group HR team supporting overseas operations (OUC CHR – "HRS GS population") is attributed directly to residual and not via AG112; therefore the Group HR costs in AG112 either support both UK and overseas operations or UK operations only.[155] BT told us that the two teams it identified as supporting UK operations only (OUC CHJ1 ('Deployment UK only') and OUC CHR ('HRS UK')) represented [✂]£10m to £50m of operating cost in 2014/15, or around 27% of total Group HR costs in 2014/15.[156]

2.189 We consider it would be consistent with causality to only attribute the costs of these two teams on the basis of UK employees with all other Group HR costs in AG112 being attributed on the basis of all BT's employees, both UK and overseas.

2.190 In relation to the FRU, BT told us that although the costs of the FRU are included in Group HR, the only FRU costs that are included in AG112 are those that relate to staff seconded to group functions from the FRU. Where people from the FRU are seconded to other lines of business, such as Openreach or Global Services, the associated costs are attributed based on the pay costs of those lines of business.[157] On this basis, we do not consider that any adjustment needs to be made to the FRU costs of people assigned to lines of business other than group functions since the existing rule is based on pay for the relevant line of business. For the FRU costs that are associated with group functions and have been included in AG112 (around 25% of total FRU costs in 2014/15) we consider that an attribution based on employees, as for the rest of Group HR, would be cost causal.

2.191 We have therefore decided to make a base year adjustment to attribute Group HR costs using BT Group employees, taking into account the geographical areas supported by the teams in Group HR as applicable.

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[152] BT, November 2015 CAR Consultation response, page 11, paragraph 59
[153] TalkTalk letter dated 29 January 2016, page 3.
[154] November 2015 CAR Consultation, page, 38, paragraph 4.108
[155] BT response dated 23 February 2016 to question 1 of the 7th CAR section 135 notice.
[156] Derived from BT response dated 23 February 2016 to question 1 of the 7th CAR section 135 notice.
[157] See entry for "CHO" Flexible Resource Unit on page 46 of BT's 2015 Accounting Methodology Documents.

BT TSO Architecture & Global IT platforms (OUC TA) - [✂]£50m to £100m (November proposal: BT Group PAC; decision: BT Group PAC)

Description of cost

2.192 The costs from this OUC recorded in AG112 relate to a range of software and software development costs.

2.193 In its response to our June CAR Consultation, BT said that the costs in this OUC included in AG112 were made up of the following (with figures updated for 2014/15):

Table 2.16: Costs included in AG112 from TSO Architecture and Global IT platforms

Cost	2014/15 £m	% of total
Development	[✂] £0m to £10m	11%
UKBS development	[✂] £10m to £50m	33%
Oracle licence	[✂] £10m to £50m	56%
Total	[✂] £50m to £100m	

Source: Paragraph 90, BT response to June CAR Consultation and BT response dated 25 February 2016.

2.194 BT said that the "development charge represents the costs incurred in relation to programmes undertaken for Group support functions such as revenue assurance reporting, fleet procurement and other Group areas".[158]

2.195 BT said the UKBS development charge represents the costs incurred in relation to the systems separation work required as part of the undertakings.[159]

2.196 BT said that the Oracle licence "provides BT with unlimited access to a range of Oracle applications on a non-volumetric basis, i.e. the licence costs do not vary according to the number of users, upgrades or databases".[160]

2.197 As with OUC TM (TSO CIO for Group), the majority of these software development costs are capitalised and added to the balance sheet of the line of business to which the work relates. In this case, since the software development relates to group functions, the associated capitalisation credit and balance sheet entry will be recorded against the relevant group function (e.g. Group Finance, Group HR, etc).

What we said in November

2.198 In the November 2015 CAR Consultation we said that, since the majority of development costs are capitalised in the group function to which they relate, the relevant attribution rule for these development costs is the one that we propose to apply to the group function that contains the balance sheet value; that is, it is the attribution of the capitalised amount that matters and not the attribution of the

[158] BT, June CAR Consultation response, page 26, paragraph 91
[159] BT, June CAR Consultation response, page 26, paragraph 92
[160] BT, June CAR Consultation response, page 26, paragraph 93

operating cost.[161] As with OUC TM, we said where the development cost recorded in OUC TA is offset by a capitalisation credit we would expect both the operating cost and capitalisation credit to be attributed in a consistent way.

2.199 For the costs of this OUC recorded in AG112, we therefore focused on the non-development costs, i.e. the Oracle licence. If the cost of this licence depended on the number of employees using it then a causal attribution rule might be the number of employees. However, BT said that this licence is an enterprise wide licence that is not dependent on the number of users. On this basis, we considered that the cost of the licence cannot be associated with a specific activity since it supports a number of systems and users across the business. We therefore proposed to apply BT Group PAC.

2.200 In the November 2015 LLCC Consultation we therefore proposed to make a base year adjustment to reflect the allocation of these costs using BT Group PAC.

Stakeholder responses

2.201 No stakeholders commented on this specific proposal.

Ofcom's response and decision

2.202 We have not been able to identify an attribution rule that would better reflect causality. We have therefore decided to make a base year adjustment to estimate the impact of allocating these costs using BT Group PAC.

Learning Academy (OUC CC) - [✂]£10m to £50m (November proposal: BT Group employees; decision: BT Group employees)

Description of cost

2.203 BT describes the Learning Academy as a "way for people to continuously develop their skills and careers and provides tools, programmes and communities to help learn, share and collaborate".[162]

2.204 BT told us that all BT staff can take advantage of the Learning Academy and that there were no restrictions based on type of staff, geography or division. In addition, the same courses are available to all staff, subject to funding from the relevant budget.[163]

2.205 BT said that [✂]£10m to £50m (43% of the total) of this OUC cost in 2013/14 related to an HR outsourcing contract and the remainder related to the operational costs associated with the management training function that BT describes as the Learning

[161] This is because the operating cost is offset by a capitalisation credit and both the operating cost and capitalisation credit will have the same attribution rule.
[162] Quote comes from BT's website.
http://www.btplc.com/Betterfuture/OurPeople/Traininganddevelopment/Personaldevelopment.htm
[163] BT response dated 21 January 2016 to question 1.19 of the 4th CAR section 135.

Academy.[164] We note that the cost of the Learning Academy reduced by [✂]£0m to £10m (30%) in 2014/15 due to a reduction in outsourced HR services.[165]

What we said in November

2.206 In the November 2015 CAR Consultation, we said that we considered that there was a relationship between employing staff and incurring training costs for those staff. We also said that whether the training cost is associated more with the numbers of staff or the pay of staff would depend on the nature of the training being offered. On the basis that the same training courses are available to all staff, we considered that the cost of the Learning Academy was more associated with the number of employees rather than the pay of those employees.

2.207 While we considered that these costs should be attributed to lines of business where BT had information on the amount of training provided to each line of business; BT told us that that it was unable to identify any management information that could be used to attribute Learning Academy costs to lines of business.[166]

2.208 On this basis, we therefore proposed to attribute Learning Academy costs using BT Group employees. In the November 2015 LLCC Consultation we proposed to make a base year adjustment to estimate the impact of allocating these costs using BT Group employees.

Stakeholder responses

2.209 No stakeholders commented on this specific proposal.

Ofcom's response and decision

2.210 We consider that attributing the Learning Academy costs on the basis of employees would be cost causal because training costs are incurred as a result of employing staff. We have therefore decided to make a base year adjustment to estimate the impact of allocating these costs using BT Group employees.

Strategy, Policy and Portfolio (OUC CO) - [✂]£10m to £50m (November proposal: Relevant revenue/PAC; decision: Relevant revenue/PAC)

Description of cost

2.211 This cost includes the cost of the Ofcom licence fee, which in 2014/15 made up around 30% of the total cost of this OUC included in AG112.

2.212 BT told us that the remaining costs in the strategy, policy and portfolio team were associated with the following:[167]

[164] BT, June CAR Consultation response, page 26, paragraph 86
[165] BT response dated 11 January 2016 to question 4 of the 3rd CAR section 135.
[166] BT response dated 23 February 2016 to question 1.7 of the 4th CAR section 135 [167] BT response dated 21 January 2016 to question 1.20 of the 4th CAR section 135.
[167] BT response dated 21 January 2016 to question 1.20 of the 4th CAR section 135.

- Strategy: The Group strategy team drives strategic decision making on issues which are important to BT and sets the Group's strategy which defines their purpose, goals and culture.

- Policy: The Policy team ensures that BT's positioning and advocacy on communications industry policy is aligned with the corporate strategy and takes account of regulatory, political and market developments. The team advocate positions on all issues that have an impact on the company's business activities such as NGA broadband across networks, content, and Internet and media policy.

- Portfolio: This team works with the market-facing units (MFUs) to set pan-BT portfolio strategies describing what BT sells, and how the MFUs' portfolios fit together.

- Group Regulatory Affairs: This team leads on pan-BT regulatory issues and those that have a Group impact. The team provides practical advice and enables the business to achieve its goals within the regulatory regime.

- Mobility: This team is involved in delivering a commercially successful group-wide mobility programme, such as by developing key partnerships in support of BT's business development (e.g. developing the mobile communities).

- Better Future Team: This team focuses on BT's corporate responsibility, and was set up to establish BT as a responsible and sustainable business leader.

2.213 BT told us that in 2014/15 the costs of this team increased by [✂]£10m to £50m (58%) which was largely the result of a "reorganisation whereby BT donations to charities are now booked against this OUC instead of OUC CR Group Communications".[168]

What we said in November

2.214 In the November 2015 CAR Consultation, we proposed to attribute the costs of the Ofcom licence fee on the basis of relevant revenue because the Ofcom licence fee is determined based on BT's 'relevant revenue', as described in Ofcom's tariff tables.[169]

2.215 For the remaining costs, BT told us that "this unit does not use timesheet systems and we have not been able to identify any other internal management information to attribute costs to [lines of business] or products".[170] On this basis, we did not consider that the remaining costs of the Strategy, Policy and Portfolio OUC could be associated with specific activities and we therefore proposed to attribute these costs using BT Group PAC.

2.216 In the November 2015 LLCC Consultation we therefore proposed to make a base year adjustment to estimate the impact of i) allocating the Ofcom licence fee costs

[168] BT response dated 11 January 2016 to question 4 of the 3rd CAR section 135 notice.
[169] Ofcom's tariff tables are available here: http://www.ofcom.org.uk/about/annual-reports-and-plans/tariff-tables/. In 2014/15, the fee payable for networks and services was 0.0855% of all relevant revenue above £1bn.
[170] BT response dated 23 February 2016 to question 1.7 of the 4th CAR section 135

using relevant revenue and ii) allocating the remaining costs of the Strategy, Policy and Portfolio team using BT Group PAC.

Stakeholder responses

2.217 No stakeholders commented on this specific proposal.[171]

Ofcom's response and decision

2.218 We consider that attributing the Ofcom licence fee on the basis of relevant revenue would be more cost causal because the fee payable by BT is calculated by reference to relevant revenue. We have therefore decided to make a base year adjustment to estimate the impact of allocating the Ofcom licence fee using relevant revenue.

2.219 For the remaining costs of Strategy, Policy and Portfolio, we have not been able to identify an attribution rule that would better reflect causality. We have therefore decided to make a base year adjustment to estimate the impact of allocating these remaining costs using BT Group PAC.

Insurance (included in OUC CD) - [✂]£50m to £100m

Description of cost

2.220 Various categories of insurance are currently attributed via AG112, as set out in Table 2.17.

Table 2.17: Insurance costs in 2014/15 included in AG112

Insurance type	2014/15 £m	% of total
Employers Liability	[✂] £10m to £50m	17%
Employment Practice Liability	[✂] £0m to £10m	6%
Property damage & business interruption	[✂] £10m to £50m	13%
Healthcare	[✂] £10m to £50m	17%
Death in Service	[✂] £0m to £10m	9%
Motor Insurance	[✂] £10m to £50m	22%
General Liability insurance	[✂] £10m to £50m	11%
Other insurance	[✂] £0m to £10m	6%
Total	[✂] £50m to £100m	**100%**

Source: Derived from BT response dated 23 February 2016 to question 3 of the 7th CAR section 135 notice.

2.221 BT insures itself through a mixture of self-insurance, its own captive insurance company and external purchases.

[171] Under the heading of Strategy, Policy and Portfolio, Vodafone's response to the November 2015 CAR Consultation (paragraphs 4.1 to 4.9) makes some comments concerning BT's treatment of EE acquisition costs and the appropriate approach to attributing overheads more generally. The EE acquisition costs were included within OUC CP (Corporate Special Projects) which we discussed under that heading above, while we explain our approach to attributing general overheads at the start of this section.

2.222 BT attributes the cost associated with the insurance premiums to AG112 while any underlying surplus or deficit associated with providing self-insurance or captive insurance is attributed to residual.[172] Annual variances arise due to claims being higher or lower than expected.[173]

What we said in November

2.223 Following BT's response to the June 2015 CAR Consultation and further discussions with BT, we discovered that BT already attributed insurance premiums to lines of business for management reporting purposes on a basis which took into account the risk factors affecting the size of the premium. Since we considered this was a more cost causal approach, in the November 2015 CAR Consultation we proposed to attribute insurance costs to lines of business on the same basis as BT's internal attribution.

2.224 Within lines of business, and based on suggestions from BT, we proposed to attribute costs as shown in Table 2.18.

Table 2.18: Proposed attribution of insurance costs within lines of business

Line of business	Proposed attribution within line of business
Openreach	Pay[1]
TSO	Pay[1]
Group Property	Via AG106[2]
Group	PAC
BT Wholesale	Pay
Global Services and BT Retail	Pay

Notes: [1]except property damage, business interruption and terrorism insurance for which BT proposes to use fixed assets. [2]This would be subject to the changes we propose in section 3 affecting AG106.

2.225 We considered that BT's suggestions were appropriate since they reflected the main risk factors affecting the premiums for many of these insurance types, in particular the larger categories of insurance (i.e. those not included within 'other insurance' below). In the November 2015 LLCC Consultation we therefore proposed to make a base year adjustment to estimate the impact of attributing insurance costs i) to lines of business on a basis which takes into account the risk factors affecting the size of the premium and ii) within lines of business on a basis consistent with Table 2.18.

[172] BT response dated 21 January 2016 to question 1.21 of the 4th CAR section 135

[173] We considered that BT's approach of attributing the insurance premiums to lines of business rather than the underlying costs (for self and captive insurance) is reasonable. The alternative would be to attribute the underlying costs of self and captive insurance to lines of business rather than the premiums. In the long run the underlying costs and the cost of the premiums should be similar, but there will be a difference in any one year due to the nature of insurance claims.

Stakeholder responses

2.226 BT did not specifically comment on our insurance proposals, though we note that BT agreed that insurance was a category that could be causally attributed in its response to the June 2015 CAR Consultation.[174]

2.227 TalkTalk was concerned that Ofcom had accepted BT's approach to attributing insurance costs to lines of business without fully understanding it. TalkTalk had particular concerns that 56% of insurance costs in 2013/14 were attributed to Openreach.[175]

2.228 TalkTalk also said that it did not consider that pay or PAC was necessarily an appropriate approach to attributing costs within lines of business. TalkTalk considered that Ofcom should use the same method to attribute costs within lines of business to that used to attribute costs to lines of business.[176]

2.229 Vodafone thought that BT's use of self and captive insurance alongside the attribution of insurance premiums to regulated services (with the surplus or deficit each year going to residual) could create the potential for consistent surpluses such that premiums for regulated markets are too high.[177]

2.230 In relation to business interruption insurance, Vodafone noted Ofcom's proposal to attribute these costs to lines of business on the basis of maximum loss estimates (consistent with BT's internal approach). Vodafone said that this "assumes that the risk of loss or damage from incidents such as flood and fire is the same for £1m of buildings as it is for £1m of underground duct or £1m of telegraph poles. In Vodafone's view, the risk of flood or fire damage to network assets such as duct or poles is very likely to be lower than the risk of such damage to buildings".[178]

Ofcom's response and decision

2.231 Table 2.19 shows the lines of business that insurance costs were attributed to in 2014/15. In response to TalkTalk's comment, it shows that the main categories of insurance being attributed to Openreach are Employers liability and motor vehicle insurance. We discuss these further below.

Table 2.19: Insurance costs by lines of business

Insurance type	OR	GS	Property	TSO	Retail	WS	Group	Other
% of total insurance	*44%*	*9%*	*4%*	*15%*	*17%*	*4%*	*5%*	*2%*
Insurance in each lines of business as % of total in that line of business								
Employers Liability	28%	4%	0%	8%	12%	6%	11%	11%
Employment Practice Liability	2%	5%	0%	7%	8%	21%	10%	0%
Property damage & business interruption	9%	15%	97%	19%	2%	0%	0%	2%

[174] BT, June CAR Consultation response, paragraphs 101 to 113
[175] TalkTalk, November 2015 CAR Consultation response, page 14, paragraphs 4.4 and 4.5
[176] TalkTalk, November 2015 CAR Consultation response, page 14, paragraph 4.6
[177] Vodafone, November 2015 CAR Consultation response, page 10, Paragraph 4.11
[178] Vodafone, November 2015 CAR Consultation response, page 10, paragraph 4.14

Healthcare	3%	26%	1%	34%	20%	22%	36%	1%
Death in Service	8%	6%	0%	9%	16%	8%	9%	11%
Motor Insurance	36%	4%	0%	13%	7%	5%	13%	64%
General Liability insurance	9%	22%	1%	0%	20%	29%	0%	2%
Other insurance	6%	19%	1%	10%	15%	10%	21%	10%
Total	100%	100%	100%	100%	100%	100%	100%	100%

Source: Ofcom, derived from information provided by BT in its response dated 23 February 2016 to question 3 of the 7th CAR section 135 notice

2.232 For each category of insurance Table 2.20 provides a brief description of the insurance, sets out the main risk factors and describes the methodology BT uses internally to attribute the cost to lines of business. We consider that methodology BT uses internally to attribute these costs to lines of business is more cost causal than the existing Pay and ROA methodology.

Table 2.20: Attribution of insurance costs to lines of business

Insurance type	Description	Main risk factors	Method of attribution to lines of business
Employers Liability	Protects BT from claims brought from UK-based employees for death, injury, illness or disease. This category of insurance is compulsory in the UK.	Pay costs: damages are likely to be greater for those on higher salaries. Type of employee: manual staff are exposed to more risk of accidents and disease than clerical staff. Number of claims incurred in past	Value of claims from line of business over the previous five years (for self-insured premium) and headcount by line of business (for external premium)[179]
Employment Practice Liability	Protects BT from claims brought from employees for wrongful employment acts such as unfair dismal or discrimination	Pay costs: awards are greater for those on higher salaries. Number of claims	Pay costs
Property damage and business Interruption	Protects BT from i) loss or damage to assets such as that arising from flood or fire and ii) the consequential losses in terms of lost revenue or increased costs resulting from that damage.	Property damage: value of assets Business interruption: maximum loss by asset	Property damage: fixed asset values Business interruption: sum insured (value of assets and business interruption values)[180]
Employee healthcare	Cost of BT providing access to private medical care for eligible BT staff and the cost of the claims administrator	Number of members	Number and type of members (e.g. if they have single, family or married couples insurance)
Employee death in service benefit	Cost of providing death in service pension for eligible staff dependents. This benefit is associated with the BT Retirement Fund (Employees joining BT since 2001 will be members of this	n/a	Number of members in relevant pension scheme

[179] BT response dated 23 February 2016 in response to question 4 of the 7th section 135 notice.
[180] BT response dated 25 February 2016 in response to question 6 of the 7th section 135 notice.

	pension scheme. Longer-term employees will belong to the main BT Pension Fund)		
Motor	Cost of own and third party injury and damage	number of vehicles and the number of claims	Number of vehicles
General Liability	Protects BT from claims made by third parties for injury, death or damage to property	Revenue	Revenue[181]
Other	Various other smaller categories of insurance as set out in Table 4.15 of November 2015 CAR Consultation	See Table 4.15 of November 2015 CAR Consultation	Various

Source: Ofcom, derived from BT response dated 21 January 2016 to question 1.9 of the 4th CAR section 135 notice

2.233 TalkTalk was concerned that the amount of insurance attributed to Openreach was too high. Most insurance in Openreach relates to employers' liability and motor insurance. BT has provided us with the underlying data which supports the level of attribution of these insurance costs to Openreach.[182] In relation to employers liability this shows that most claims in last five years have come from Openreach and in relation to motor vehicle insurance it shows that the majority of vehicles are in Openreach.

2.234 Vodafone considered that the attribution of business interruption insurance may not reflect the probability of the loss occurring. BT confirmed that it didn't include the likelihood of damage occurring because in its experience it suffers more claims from damage caused by fire and floods in its network as opposed to damage to buildings (i.e. the opposite of Vodafone's concern). [183] BT also noted that the value of business interruption is relatively low.[184]

2.235 For attributions within lines of business we consider that the attributions set out in Table 2.18 would reflect causality since they take account of the main risk factors affecting the size of the insurance premiums. In principle we agree with TalkTalk that the methodology used to attribute insurance costs to lines of business should be maintained within lines of business. However, practically this is not always possible. For example, for one of the largest categories of insurance, employer's liability, pay and value of claims are used to attribute costs to lines of business. While pay costs could then be used within lines of business since this data is available, the data for the value of claims may only be available for the line of business as a whole rather than for more granular teams or functions with lines of business. In addition, some of the insurance categories attributed to individual lines of business are relatively small such that the attribution within lines of business does not have a material effect on the amount of cost attributed to regulated services such as leased lines.

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[181] BT told us that it also reviews whether there is any persistent high-level claims activity from specific lines of business and if so it would load the premiums onto that line of business. BT also told us that in attributing this insurance cost to lines of business it used total revenue adjusted for cost of sale payments between lines of business. For example, if BT Retail takes in £10m in total revenue but pays a cost of sale of £7m to Openreach, then 3m will be shown as BT Retail revenue and £7m as Openreach revenue.
[182] BT response dated 23 February 2016 to question 4 of the 7th CAR section 135 notice.
[183] BT response dated 25 February 2016 to question 6 of the 7th CAR section 135 notice.
[184] Ibid.

2.236 Finally, Vodafone considered that BT's use of self and captive insurance created the potential for consistent surpluses (which go to residual) and high premiums (which are attributed to regulated markets). The evidence received from BT over the last three years does not support this view: in 2012/13 there was a relatively large deficit followed by a relatively large surplus in 2013/14. In 2014/15 there was a relatively small surplus.[185]

2.237 We have therefore decided to make a base year adjustment to estimate the impact of attributing insurance costs i) to lines of business on a basis which takes into account the risk factors affecting the size of the premium and ii) within lines of business on a basis consistent with Table 2.18.

Employee Broadband offer - [✂]£10m to £50m (November proposal: BT Group Employees; decision: Employee Broadband Offer Methodology)

Description of cost

2.238 These costs relate to the free broadband service that BT offers to its UK-based staff.[186] This cost represents a transfer from BT Retail to BT Group.[187]

What we said in November

2.239 In the November 2015 CAR Consultation, we said that from a causality perspective, the cost of providing free broadband to employees is associated with the number of employees who take up this offer. If no employees took up the offer then it is not clear that there would be any costs associated with it.

2.240 Where the information is available, we proposed that the attribution rule should take into account the number employees taking up the offer. In the absence of this information, we considered that this cost should be attributed based on the number of UK employees, i.e. those potentially eligible to take up the offer, using factorised pay. We therefore proposed that BT should attribute these costs using employees (factorised pay) but said that we would explore with BT whether it has information on the number of employees taking up the broadband offer by line of business. In the November 2015 LLCC Consultation we proposed to make a base year adjustment to reflect the allocation of these costs using BT Group Employees.

Stakeholder responses

2.241 No stakeholders commented on this specific proposal.

Ofcom's response and decision

2.242 BT provided us with information on the number of eligible employees taking up the employee broadband offer by line of business. This is shown in Table 2.21.

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[185] BT response dated 21 January 2016 to question 1.21 of the 4th CAR section 135 notice.
[186] BT response dated 11 January 2016 to question 11 of the 3rd CAR section 135 notice. There are also other conditions such as the staff are full time employees, paid in Sterling and already have a BT phone line..
[187] BT's Accounting Methodology Documents 2014/15 describe this transfer charge: "This trade is from BT Retail to BT Group at external prices for the discounted broadband lines which employees are entitled to receive". See page 271.

Table 2.21: Percentage of eligible employees taking up the offer by line of business

Line of business	Employees taking up the offer by line of business %
Openreach	46%
BT Group	8%
BT Business	11%
BT Global Services	11%
BT Wholesale	2%
BT Consumer	8%
BT TSO	14%
Total	100%

Source: BT response dated 11 March to question 11f of the 3rd CAR section 135 notice.

2.243 We consider that using this information would reflect causality since each line of business would only be attributed the costs of the employee broadband offer associated with the number of people in that line of business taking up the offer. Within each line of business we consider that it would be appropriate to attribute these costs on the basis of pay for each line of business because the cost of employee broadband offer for that line of business is likely to be linked to the number of employees in that line of business. We have therefore decided to make a base year adjustment to allocate the costs of the employee broadband offer to lines of business based on the number of eligible employees taking up the offer and within lines of business based on the pay costs for that line of business (the Employee Broadband Offer methodology).

Other costs in AG112

Description of cost

2.244 The remaining costs in AG112 are made up of costs associated with a number of OUCs that have small amounts of cost associated with them, as well as some remaining costs in OUC CD (analysis code) that we have not specifically reviewed. These are summarised in Table 2.22.

Table 2.22: Other costs in AG112, 2014/15, £m

Cost	2014/15 £m
Other OUC costs	[✂] £10m to £50m
Other costs in OUC CD (analysis code)	[✂] £0m to £10m

Source: BT response dated 18 December 2015 to questions 1 and 2 of the 3rd CAR section 135 notice

What we said in November

2.245 In the November 2015 CAR Consultation, we proposed to attribute the other costs in AG112 using BT Group PAC and in the November 2015 LLCC Consultation we proposed to make a base year adjustment to reflect the allocation of these costs using BT Group PAC. We noted that:

- The largest remaining OUC in 2013/14, OUC E (corporate adjustments) had [✂]£0m to £10m of costs. Since the nature of corporate adjustments in OUC E can vary from year to year we considered that they cannot be associated

with specific activities and we proposed that they should be attributed using BT Group PAC.

- The largest remaining costs in OUC CD (analysis code) included an internal charge from Global Services and a software capitalisation credit. The Global services internal charge is made to BT Group for the use of its products[188] that BT uses to provide its own internal networks. Services delivered over its internal networks include the BT intranet, financial systems, HR systems and email. We said that while some services delivered over the internal networks could be associated with employees (for example the intranet and email), in general the internal network supports a number of services across BT such that the cost of providing the internal network cannot be associated with specific activities. We therefore proposed to attribute this cost using BT Group PAC. For software capitalisation credits, we said these should be attributed on a basis consistent with the offsetting operating cost, meaning that they have no impact on cost attributions.

Stakeholder responses

2.246 No stakeholders commented on this specific proposal.

Ofcom's response and decision

2.247 We have not undertaken a more detailed review of the other OUCs in AG112, although we note that the amount of cost against OUC E in AG112 is [✂]£0m to £10m in 2014/15 compared to [✂]£0m to £10m in 2013/14, indicating the amount of cost in this OUC can vary from year to year as indicated in the November 2015 CAR Consultation.[189]

2.248 The largest remaining costs in OUC CD remain those that we identified in the November 2015 CAR Consultation (Global Services internal charge and software capitalisation credits) and the comments we made then continue to apply.

2.249 We have not been able to identify an attribution rule that would reflect causality for any of the remaining costs in AG112. We have therefore decided to make a base year adjustment to allocate the remaining costs using BT Group PAC.

AG103: TSO support functions

Introduction

2.250 TSO manages the voice, data, TV networks and IT applications which make up the core infrastructure for BT's products and services.[190] TSO is an internal service unit providing services to the customer-facing lines of business, i.e. Openreach, BT Wholesale, BT Consumer, BT Business and Global Services. It receives no revenue directly and so its costs are attributed to BT's other lines of business.

[188] In particular, SHDS Connect, IP Connect UK, Optical Connect, X25 and Interconnect Connect products.
[189] While some of the costs in OUC E may be 'one off' in nature, due to the small amount of cost in this OUC in 2014/15, we do not consider that a base year adjustment is required.
[190] BT Group plc annual report 2015, page 76

2.251 In the November 2015 CAR Consultation, we provided a breakdown of the costs included in AG103 and proposed alternative attribution rules. For most costs in AG103 we disaggregated the cost by BT's OUC description (e.g. TSO Finance). However one of the OUCs (OUC TX 'BT Centre') contained various types of costs so we identified some of the costs in this OUC separately (e.g. redundancy payments).

2.252 Table 2.23 summarises the breakdown of costs in AG103 in 2013/14 and 2014/15 and shows the attribution rule that we proposed in the November 2015 CAR Consultation and reflected in the LLCC proposals alongside the attribution rules that we have decided to reflect in the base year adjustment for the 2016 LLCC.

Table 2.23: Costs in AG103 split by OUC and cost attribution proposals and decisions

OUC	Description	13/14 £m	14/15 £m	November Proposal	Base year adjustment
TX (part)	TSO Centre – Redundancy	[✂] £10m to £50m	[✂] £10m to £50m	TSO Pay	TSO Pay
TH	TSO HR & Communications	[✂] £10m to £50m	[✂] £10m to £50m	TSO Pay	TSO Pay
TB	TSO Service, strategy & operations	[✂] £10m to £50m	[✂] £0m to £10m	TSO PAC	TSO PAC
TF	TSO Finance	[✂] £0m to £10m	[✂] £0m to £10m	TSO PAC	TSO PAC
Various	TSO Career Transition Centre	[✂] £10m to £50m	[✂] £10m to £50m	TSO Pay	TSO Pay
n/a	Other costs	[✂] £10m to £50m	[✂] £0m to £10m	TSO PAC	TSO PAC
Total		[✂]£100m to £150m	[✂]£50m to £100m		

Source: Ofcom, based on data provided by BT on 10 March 2016 (excel models). Note that OUC TX includes costs other than TSO redundancy costs. These other costs in OUC TX are included in 'other costs'

2.253 For each of the costs in Table 2.23 we provide a description of the cost, refer to any comments from stakeholders or additional information from BT on the proposed rule, and set out our decision on the base year adjustment.

BT TSO Centre - Redundancy (recorded in OUC TX) - [✂]£10m to £50m (November proposal: TSO Pay; decision: TSO Pay)

Description of cost

2.254 These redundancy costs relate to TSO employees that have been made redundant during the year.[191]

What we said in November

2.255 In the November 2015 CAR Consultation we proposed to attribute these costs on the basis of TSO pay costs. We noted that BT agreed that Ofcom's proposed methodology of using pay was appropriate.[192]

[191] BT response dated 9 March 2016 to question 1.25 of the 4th CAR section 135 notice

2.256 We said that the size of redundancy payments is associated with the pay costs of the division to which the redundancies relate and that in this case the relevant division is TSO. In the November 2015 LLCC Consultation we proposed to make a base year adjustment to reflect the attribution of TSO redundancy costs on the basis of TSO pay costs.

Stakeholder responses

2.257 No stakeholders commented on this specific proposal.

Ofcom's response and decision

2.258 We consider that the attribution of BT TSO Centre – Redundancy costs on the basis of TSO pay costs would be causal since the size of redundancy payments is associated with the pay costs of the division to which the redundancies relate and that in this case the relevant division is TSO. We have therefore decided to make a base year adjustment to attribute the redundancy costs that relate to TSO employees on the basis of TSO pay costs.

TSO Human Resources and Communications (OUC TH) - [✂]£10m to £50m (November proposal: TSO Pay; decision: TSO pay)

Description of cost

2.259 BT said that this category "represents the costs associated with the [line of business] specific HR function for TSO, which manages the day to day HR requirements for TSO (i.e. in additional to general policy elements provided by BT Group HR)."[193] We note that the costs of this team reduced by 38% in 2014/15 as a result of the general reduction in headcount within BT TSO.[194]

2.260 Although this is a single OUC, BT told us that it estimates that around 15% of these costs relate to communications roles and 85% relate to HR roles.[195]

What we said in November

2.261 In the November 2015 CAR Consultation we considered that, as with Group HR (OUC CH described above), human resources costs are associated with the activity of employing people and the attribution rule should reflect this. We accepted that it is difficult for BT to reflect employee numbers for attribution purposes at a more granular level than by line of business.[196] We therefore proposed that TSO HR costs should be attributed on the basis of TSO pay costs since this will reflect the fact that TSO HR costs are incurred as a result of employing people in TSO. We said that this approach would also be consistent with our proposal for Group HR where we

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[192] BT, June CAR Consultation response, page 17, paragraph 38. Although BT's response indicates that it was going to discuss why it considered Ofcom's proposal was appropriate, it did not mention redundancy payments again in its response.
[193] BT, June CAR Consultation response, page 19, paragraph 55
[194] BT response dated 11 January 2016 to question 4 of the 3rd CAR section 135 notice.
[195] BT response dated 21 January 2016 to question 1.27 of the 4th CAR section 135 notice
[196] 'Factorised pay' can reflect the number of employees in each line of business, but within each line of business this methodology attributes costs using pay.

proposed to use factorised pay (employees) and also BT's attribution of Openreach HR costs, which are attributed using Openreach pay.

2.262 We said that although it was less clear what TSO Communications costs relate to, these are also likely to be incurred as a result of employing people; i.e. the costs are incurred as a result of TSO's need to communicate with its staff. We therefore proposed to attribute TSO Communications costs on the basis of TSO pay costs.

2.263 In the November 2015 LLCC Consultation we proposed to make a base year adjustment to attribute the costs associated with the TSO Human Resources and Communications function using TSO Pay.

Stakeholder responses

2.264 No stakeholders commented on this specific proposal.

Ofcom's response and decision

2.265 We consider that attributing TSO HR costs on the basis of TSO pay costs is causal because it reflects the fact that TSO HR costs are incurred as a result of employing people in TSO. This approach would also be consistent with our base year adjustments relating to Group HR (which uses factorised pay) and Openreach HR (which uses Openreach pay).

2.266 We also consider that TSO Communications costs are likely to be incurred as a result of employing people and that it would therefore be causal for them to be attributed on the basis of TSO pay costs.

2.267 We have therefore decided to make a base year adjustment to allocate TSO HR costs and TSO Communications costs on the basis of TSO pay costs.

TSO Service, strategy and operations (OUC TB) - [✂]£0m to £10m (November proposal: TSO PAC; decision: TSO PAC)

Description of cost

2.268 BT said that the costs attributed to AG103 from the TSO Service, Strategy and Operations ("SSO") function were a small proportion ([✂]<20% in 2013/14) of the total costs incurred by SSO. BT said that the costs in SSO included in AG103 relate to three teams:

- Strategy team: supports all of TSO, providing strategic analysis, continuous improvement and project management support.
- Business analytics team: supports all of TSO, providing business analytics reports and associated analysis.
- Production planning team: supports exchange-based engineers that make up the vast majority of SSO in relation to, for example, demand forecasting.[197]

[197] BT, June CAR Consultation response, page 20, paragraph 56

What we said in November

2.269 In the November 2015 CAR Consultation we said that it is difficult to associate the strategy and business analytics teams with specific activities for the purposes of cost attribution since they appear to provide services across the whole of TSO. For production planning, we said an argument could be made that these costs are associated with the TSO engineers that they support (in which case TSO pay or TSO engineering pay may be an appropriate attribution methodology). However, we considered that the production planning work could be affected by a number of activities across TSO that could impact, for example, the demand forecasting activities undertaken by this team.[198]

2.270 As a result, in the November 2015 LLCC we proposed to make a base year adjustment to reflect the impact of attributing TSO SSO costs in AG103 using TSO PAC.

Stakeholder responses

2.271 No stakeholders commented on this specific proposal.

Ofcom's response and decision

2.272 Given that we cannot associate the strategy and business analytics teams with specific activities as they provide services across the whole of TSO, and that production planning work could be affected by activities across all of TSO, we have not been able to identify an attribution rule that would reflect causality.

2.273 We have therefore decided to make a base year adjustment to allocate the costs of TSO SSO on the basis of TSO PAC.

TSO Finance (OUC TF) - [✂]£0m to £10m (November proposal: TSO PAC; decision: TSO PAC)

Description of cost

2.274 BT said that "all of the costs associated with the TSO Finance team are assigned to the AG103 TSO Support Function activity group, and are primarily pay or pay-related costs. The team provides a range of finance support services across all TSO functions, including management reporting, business case and capital investment review, support to internal and external audit and business partnering".[199]

What we said in November

2.275 In the November 2015 CAR Consultation we said that it was difficult to associate TSO Finance costs with specific activities since this unit provides financial support across all TSO functions. Therefore, in the November 2015 LLCC Consultation we proposed to make a base year adjustment to attribute these costs using TSO PAC.

[198] FTI said that it also considered whether the production planning team could be separately attributed. It said that that "the low materiality of the cost of this team of 10 staff suggests that the treatment as a general overhead across all of TSO does not materially affect the distribution of total TSO costs across markets" (FTI, June CAR Consultation response, page 48, paragraph 5.36). .
[199] BT, June CAR Consultation response, page 20, paragraph 57

This was consistent with our proposal for Group Finance (OUC CF) which we proposed to attribute using BT Group PAC.

Stakeholder responses

2.276 No stakeholders commented on this specific proposal.

Ofcom's response and decision

2.277 We have not been able to identify an attribution rule that would reflect causality for TSO Finance costs. We have therefore decided to make a base year adjustment to allocate TSO Finance costs on the basis of TSO PAC.

TSO Career Transition Centre costs (various OUCs) - [✂]£10m to £50m (November proposal: TSO Pay; decision: TSO Pay

Description of cost

2.278 In the November 2015 CAR Consultation we said that BT had told us that TSO Career Transition Centre (CTC) costs are recorded in a number of different TSO OUCs which are included in AG103.[200]

2.279 The CTC costs reflect the pay and associated staff costs relating to employees whose role is no longer required (for example as a result of BT's transformation programmes or other restructuring programmes). Employees in the CTC can be retrained and redeployed.

2.280 BT told us that for other lines of business it attributes CTC costs in proportion to the previously allocated pay in the line of business which the staff were previously employed.[201, 202] We noted that BT's 2013 Reconciliation report said that BT had changed the attribution of CTC costs from attributing the CTC cost to the line of business in which the employee previously worked to attributing the CTC cost using the Pay and ROA methodology via AG112.[203] However, BT reverted to its previous attribution methodology in 2013/14.[204]

2.281 In the November 2015 CAR Consultation we also noted that, during the course of investigating the costs in AG103, BT discovered an error in the amount of cost attributed to AG103 which related to the treatment of TSO CTC costs.[205] TSO CTC costs are directly allocated to AG103; however, CTC costs were incorrectly also included in the 'Except' base methodology attributing other TSO costs across a

[200] BT response dated 23 February 2016 to question 1.28 of the 4th CAR section 135 notice
[201] BT response dated 23 February 2016 to question 1.29 of the 4th CAR section 135 notice
[202] For Openreach BT said that the pay costs of staff redeployed are accounted for and attributed on the same basis as the pay costs of the Openreach OUC from which the employee was redeployed (BT response dated 23 February 2016 to question 1.30 of the 4th CAR section 135 notice)
[203] BT, Reconciliation report 2013, page 29
[204] We note that PwC disagreed with the methodology change in 2012/13 in which BT included the CTC costs in AG112. In a slide presentation to Ofcom dated 14 May 2014 BT says "PwC disagreed with our method because it spreads the costs of the CTC over the business rather than linking them to the root cause of the inefficiency (i.e. the business unit which no longer requires the resource)".
[205] BT refers to this error in paragraph 73 of its response to the November 2015 CAR Consultation.

number of activity groups.[206] As a result, the amount of costs included in AG103 was too high (with costs in other costs categories being correspondingly too low). BT estimated that the impact of correcting this error in 2013/14 would be to remove around £1.5m of cost from regulated markets, with around £0.5m of this relating to business connectivity markets. BT has included the impact of correcting this error when modelling the base year adjustment relating to AG103.

What we said in November

2.282 In the November 2015 Car Consultation we said that, as with TSO redundancy costs, TSO CTC costs are associated with the TSO pay costs. We said that the CTC costs in AG103 should be attributed consistently with the CTC costs in other lines of business.

2.283 In the November 2015 LLCC Consultation we therefore proposed to make a base year adjustment to reflect the attribution of these costs using TSO Pay.

Stakeholder responses

2.284 No stakeholders commented on this specific proposal.

Ofcom's response and decision

2.285 We consider that the attribution of TSO CTC costs using TSO pay costs would be causal since the size of the TSO CTC costs is associated with the pay costs of TSO. We also note that using TSO pay costs would be consistent with how CTC costs are attributed in other lines of business.

2.286 We have therefore decided to make a base year adjustment to attribute TSO CTC costs using TSO pay costs.

Other AG103 costs

Description of costs

2.287 AG103 includes other OUCs which contain relatively small amounts of cost. These are summarised in Table 2.24.

Table 2.24: Other costs in AG103, 2014/15

OUC	Description	2013/14 £m	2014/15
TX	TSO Centre – non redundancy costs	[✂] £10m to £50m	[✂] £0m to £(10)m
T	BT TSO	[✂] £0m to £(10)m	[✂] £0m to £(10)m
Other		[✂] £0m to £10m	[✂] £0m to £10m
Total		[✂] £10m to £50m	[✂] £0m to £10m

Source: Ofcom, derived from BT response dated 18 December 2015 to questions 1 and 2 of the 3rd CAR section 135 notice and data provided by BT on 10 March 2016 (excel models)

[206] Except bases are explained on page 42 of BT's 2014/15 AMD.

What we said in November

2.288 In the November 2015 CAR Consultation we said that we had not undertaken a detailed review of the other costs included in AG103 in 2013/14 but noted that they were largely associated with the OUCs TX (TSO Centre) and T (TSO). We said that around half of the remaining costs in OUC TX in 2013/14 related to one-off fees associated with terminating third-party contracts[207] while the other half largely related to national insurance payments on employee share options.[208] The negative value associated with OUC T included transfer charges and various accounting adjustments to move costs between TSO cost lines.[209] We said that we would not expect these transfers or accounting adjustments to have an impact on cost attributions as long as they are attributed on a consistent basis.

2.289 As we were unable to identify an attribution rule that would better reflect causality for the other costs in AG103 we proposed in the November 2015 LLCC Consultation to make a base year adjustment to attribute the other costs in AG103 using TSO PAC.

Stakeholder responses

2.290 In its response to the November 2015 CAR Consultation TalkTalk noted that non-redundancy costs in OUC TX (TSO Centre) appeared to be a large cost category that Ofcom should investigate in more detail.[210]

Ofcom's response and decision

2.291 We explained in November that the non-redundancy costs in OUC TX included in AG103 appeared to be one-off in nature. BT told us that "the costs in OUC TX relate to certain central TSO costs and various central accounting adjustment[s] and provisions. The nature of this OUC means we can expect considerable variability in the amounts recorded each year. The biggest cost in this OUC in both years was the central BT TSO cost of redundancy. This decreased by [✂]£0m to £10m in the year to [✂]£10m to £50m. The remaining costs in the OUC mostly relate to accounting adjustments and they total a credit of [✂]£0m to £10m compared to a debit of [✂]£10m to £50m last year."[211] On the basis that the remaining costs in OUC TX in AG103 were relatively small in 2014/15 and that the nature of these costs can differ year to year, we have not identified an attribution rule that would reflect causality.[212]

2.292 We have not undertaken a more detailed review of the costs included in the other OUCs in AG103 since the November 2015 CAR Consultation.

2.293 We have therefore decided to make a base year adjustment to attribute the other costs in AG103 using TSO PAC.

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[207] Derived from BT response dated 21 January 2016 to question 1.26 of the 4th CAR section 135 notice.
[208] Derived from BT response dated 21 January 2016 to question 1.26 of the 4th CAR section 135 notice.
[209] Derived from BT response dated 21 January 2016 to question 1.33 of the 4th CAR section 135 notice.
[210] TalkTalk, November 2015 CAR Consultation response, page 14, paragraph 4.10
[211] BT response dated 11 January 2016 to question 4 of the 3rd CAR section 135 notice.
[212] While some of the other costs in OUC TX may be 'one off' in nature, due to the small amount of these costs in 2014/15 we do not consider that a base year adjustment is required.

COMCOS: Openreach overheads

Introduction

2.294 COMCOS is the name of BT's methodology that attributes c[✂]£50m to £100m of Openreach overheads.

2.295 In the November 2015 CAR Consultation we provided a breakdown and explanation of the Openreach overheads attributed using COMCOS.

2.296 Table 2.25 provides a breakdown of OUC costs attributed using COMCOS in 2013/14 and 2014/15. The table also shows the attribution rules that we proposed in the November 2015 CAR Consultation and reflected in the LLCC proposals alongside the attribution rule that we have decided to reflect in the base year adjustment for the 2016 LLCC.

Table 2.25: COMCOS costs split by OUC and cost attribution proposals and decisions

OUC	Description	13/14 £m	14/15 £m	November proposal	Base year adjustment
BA	Openreach Learning and Development	[✂]£10m to £50m	[✂]£10m to £50m	Openreach Pay	Openreach Learner Days+Pay
BF	Openreach Finance	[✂]£10m to £50m	[✂]£10m to £50m	Openreach PAC	Openreach PAC
BR	Openreach Marketing and Sales	[✂]£10m to £50m	[✂]£10m to £50m	Openreach product revenues	Openreach product revenues
BQ	Openreach Transformation	[✂]£10m to £50m	[✂]£10m to £50m	Openreach PAC	Openreach PAC
BJ	Openreach General Counsel	[✂]£10m to £50m	[✂]£10m to £50m	Openreach PAC	Openreach PAC
BL	Openreach Network investment	[✂]£0m to £10m	[✂]£0m to £10m	Openreach engineering team pay cost	
BV	Openreach Service Delivery	[✂]£0m to £10m	[✂]£0m to £10m		
BK	Openreach Next Generation Access	[✂]£0m to £10m	[✂]£0m to £10m		Openreach engineering team pay cost
BI	Openreach Frames Congestion	[✂]£0m to £(10)m	[✂]£0m to £10m		
BD	Openreach Business & Ethernet	[✂]£0m to £10m	[✂]£0m to £10m		
Total		[✂]£50m to £100m	[✂]£50m to £100m		

Source: Table 4.23 of the November 2015 CAR Consultation and BT response dated 18 December 2015 to question 1 of the 3rd CAR section 135 notice. Note 2014/15 figures do not sum due to rounding.

Openreach Learning and Development (OUC BA) - [✂]£10m to £50m (November proposal: Openreach pay; decision: Openreach Learner days and pay)

Description of cost

2.297 BT told us that the Openreach Learning and Development team is part of the Openreach HR team and is responsible for designing and delivering training and development programmes for all Openreach staff.[213] The costs in this OUC largely relate to clerical and management pay costs and hospitality costs associated with training courses and meetings.[214]

2.298 BT said that this team mostly provides standalone training specifically for Openreach; for example, technical, safety, process and procedural training for the field engineering workforce in Openreach and also training for Openreach call centre staff. BT also said that job-specific leadership courses for the small number of senior managers in the group is provided by BT Group (through the Learning Academy, OUC CC), as is generic professional training for non-engineers such as project managers or finance staff.[215]

What we said in November

2.299 In the November 2015 CAR Consultation we considered that training costs are incurred as a result of employing staff. The majority of training courses offered by the Openreach Learning and Development team appear to be standard courses available to engineering and office-based staff. We said that an attribution rule based on Openreach employees could reflect the fact that the same training is available to the majority of Openreach staff, although we said that we understood it is difficult to reflect in an attribution rule the number of employees below the level of line of business.

2.300 We also said that BT had told us that staff delivering this training record the number of learner days provided to each Openreach OUC by programme.[216] This information could therefore be used to attribute Openreach Learning and Development costs to particular Openreach OUCs since it would reflect the actual training delivered, although an attribution rule would be required to attribute costs within each OUC, such as pay.

2.301 At the time we said that we did not know whether it would be practicable to use information on recorded learner days to attribute these costs. As a result we proposed to attribute the Openreach Learning and Development costs on the basis of Openreach Pay. We noted that this proposal is consistent with the way BT currently attributes Openreach HR costs, which is also on the basis of Openreach pay.[217]

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[213] BT response dated 21 January 2016 to question 1.34 of the 4th CAR section 135 notice.
[214] BT response dated 23 February 2016 to question 1.35 of the 4th CAR section 135 notice.
[215] BT response dated 21 January 2016 to question 1.36 of the 4th CAR section 135 notice.
[216] BT response dated 23 February 2016 to question 1.37 of the 4th CAR section 135 notice. This information indicates that almost all training was provided to the engineering teams (such as OUCs BV, BK and BL explained below), which is consistent with these teams representing the most staff in Openreach.
[217] BT, Accounting Methodology Document 2014/15, page 43

2.302 In the November 2015 LLCC Consultation we proposed to make a base year adjustment to reflect the attribution of Openreach Learning and Development costs on the basis of Openreach Pay.

Stakeholder responses

2.303 No stakeholders commented on this specific proposal.

Ofcom's response and decision

2.304 We asked BT for a breakdown of the proportion of training days provided by Openreach Learning and Development to each Openreach OUC in 2014/15. These proportions are shown in Table 2.26, alongside the proportion of cost that would be attributed to each OUC if Openreach pay was used.

Table 2.26: Openreach learner days and Openreach pay by Openreach OUC, 2014/15.

OUC	Description	Learner days	Openreach pay
BV	Openreach Service Delivery	58.0%	48.3%
BL	Openreach Infrastructure Delivery	26.4%	24.2%
BK	Openreach BDUK	7.5%	1.4%
BD	Openreach Business and Corporate Delivery	4.4%	9.0%
BW	Openreach Customer service	3.6%	5.6%
BP	Openreach Strategy, Commercial, Portfolio Policy	0.1%	0.9%
	Other Openreach OUCs	-	10.6%
Total		100%	100%

Source: Derived from BT response dated 11 January 2016 to question 12 of the 3rd CAR section 135 notice.

2.305 We consider that using information on the number of learner days to attribute Openreach Learning and Development costs to Openreach OUCs would be more cost causal because it would attribute costs to the OUCs that have used the services of the Openreach Learning and Development team during the year. Attributing these costs using Openreach pay would give a reasonably similar attribution for some OUCs, but would be less accurate for others. In particular the use of Openreach pay would attribute costs to some OUCs that did not receive any training during the year.

2.306 Given that BT has the data on the number of learner days by Openreach OUC we consider that it would be causal to attribute the costs of the Openreach Learning and Development team to Openreach OUCs on this basis. Within these OUCs, we consider that the use of Openreach pay would be reasonable since the training is provided to employees.

2.307 We have therefore decided to make a base year adjustment to attribute Openreach Learning and Development costs to Openreach OUCs on the basis of learner days and within OUCs on the basis of Openreach pay.

Openreach Finance (OUC BF) - [✂]£10m to £50m (November proposal: Openreach PAC; decision Openreach PAC)

Description of cost

2.308 BT told us that the Openreach Finance team works across Openreach to provide commercial support across Openreach to "analyse, understand and execute plans to improve the business.[218]

What we said in November proposal

2.309 In the November 2015 CAR Consultation we said that, as with Group Finance (OUC CF), we do not consider that Openreach Finance costs can be associated with specific activities since the function provides support to a range of activities across Openreach.

2.310 Therefore, in the November 2015 LLCC Consultation we proposed to make a base year adjustment to reflect the attribution of Openreach Finance costs using Openreach PAC.

Stakeholder responses

2.311 No stakeholders commented on this specific proposal.

Ofcom's response and decision

2.312 We have not been able to identify an attribution rule that would reflect causality for Openreach Finance costs. We have therefore decided to make a base year adjustment to estimate the impact of attributing Openreach Finance costs using Openreach PAC.

Openreach Marketing and Sales (OUC BR) - [✂]£10m to £50m (November proposal: Openreach product revenues; decision: Openreach product revenues)

Description of cost

2.313 In the November 2015 CAR Consultation we explained that the Openreach Marketing and Sales team is the customer account management team that is responsible for managing the relationship with Openreach's customers.[219]

What we said in November

2.314 In the November 2015 CAR Consultation we said that this team manages customers that buy multiple Openreach products so it is not possible to directly allocate these costs to specific Openreach products. However, we said that the costs incurred by this team are likely to be related to the number of customers and the amount spent by those customers; for example, more costs may be associated with managing the relationship with the largest customers by spend. Therefore, we considered that a

[218] BT response dated 21 January 2016 to questions 1.34 and 1.38 of the 4th CAR section 135 notice.
[219] BT response dated 21 January 2016 to question 1.39 of the 4th CAR section 135 notice.

relationship could be established between these costs and Openreach product revenues. We therefore proposed to attribute the Openreach Marketing and Sales costs on the basis of Openreach product revenues and in the November 2015 LLCC Consultation we proposed to make a base year adjustment to reflect the attribution of Openreach Marketing and Sales (OUC BR) using Openreach product revenues.[220]

Stakeholder responses

2.315 No stakeholders commented on this specific proposal.

Ofcom's response and decision

2.316 We consider that attributing the costs of the Openreach Marketing and Sales team (OUC BR) on the basis of Openreach product revenues would better reflect causality because the costs of the team are likely to be related to the number of customers and the amount spent by those customers (e.g. more costs may be associated with managing the relationship with the largest customers by spend).[221]

2.317 We have therefore decided to make a base year adjustment to reflect the impact of attributing the costs of Openreach Marketing and Sales (OUC BR) using Openreach product revenues.

Openreach Transformation (OUC BQ) - [✂]£10m to £50m (current proposal: Openreach PAC; decision: Openreach PAC)

Description of cost

2.318 The Openreach Transformation team is responsible for improving efficiency, reducing costs and improving customer satisfaction.[222] This team only provides support to Openreach rather than other lines of business.

What we said in November

2.319 In the November 2015 CAR Consultation we said that BT had told us that there was no recorded timesheet information that could be used to attribute costs, but that work was recorded against 'programmes' to provide details of what employees had worked on.[223] However when asked for details of these programmes, BT told us that the Openreach Transformation team "does not record work against programmes".[224]

2.320 As a result we said that it is difficult to associate the Openreach Transformation team with specific activities because it appears to work across Openreach and looks to improve efficiency in a number of areas (for example through reviewing employee

[220] We noted that this attribution rule would be similar to that applied to the Openreach Sales and Product Management team (OUC BP) in 2013/14. This team is responsible for developing specific products that are sold to customers by the Marketing and Sales team (OUC BR).
[221] We note that this would mean that the costs of the Openreach Marketing and Sales team (OUC BR) would be attributed on the same basis as the Openreach Sales and Product Management team (OUC BP).
[222] BT response dated 21 January 2016 to question 1.34 of the 4th CAR section 135 notice.
[223] November 2015 CAR Consultation, page 77, paragraph 4.319
[224] BT response dated 23 February 2016 to question 1.37 of the 4th CAR section 135 notice

costs, working practices and other types of costs). We therefore proposed to attribute these costs using Openreach PAC.

2.321 In the November 2015 LLCC Consultation we proposed to make a base year adjustment to reflect the attribution of Openreach Transformation costs using Openreach PAC.

Stakeholder responses

2.322 No stakeholders commented on this specific proposal.

Ofcom's response and decision

2.323 We have not been able to identify an attribution rule that would reflect causality for Openreach Transformation costs. We have therefore decided to make a base year adjustment to estimate the impact of attributing these costs using Openreach PAC.

Openreach General Counsel (OUC BJ) - [✂]£10m to £50m (November proposal: Openreach PAC; decision: Openreach PAC)

Description of cost

2.324 Openreach General Counsel provides legal and regulatory advice to people mainly in Openreach on all aspects of law and regulation, including the Undertakings, Acts of Parliament and contracts entered into by Openreach.[225]

2.325 BT said that Openreach General Counsel provides legal and regulatory advice to the whole of BT[226] but did not explain whether this accounted for a significant proportion of Openreach General Counsel's workload in each year. BT has since told us that it considers that the total amount of time spend on work carried out by Openreach General Counsel for lines of business other than Openreach is immaterial, representing less than one FTE, out of a total FTE of [✂] >100 in 2014/15.[227]

What we said in November

2.326 In the November 2015 Car Consultation we said that where Openreach General Counsel provides legal advice to lines of business other than Openreach those costs should be attributed to those lines of business. However, we noted that this may not be practicable because BT told us that Openreach lawyers do not usually record the time spent on different projects.[228] We therefore assumed that the majority of costs incurred by Openreach General Counsel were incurred advising Openreach, but said that we will explore this assumption further with BT. We said that within Openreach, it is difficult to associate the Openreach General Counsel costs with specific activities

[225] BT response dated 21 January 2016 to question 1.34 of the 4th CAR section 135 notice
[226] BT response dated 25 February 2016 to question 1.42 of the 4th CAR section 135 notice
[227] BT response dated 4 March 2016 to a follow up to question 14 of the 3rd CAR section 135 notice. BT also said that examples of the types of work carried out by Openreach General Counsel for other lines of business in 2014/15 included i) a junior lawyer supporting BT Group Legal on EE transaction for 4 months, ii) lawyer supporting BT Group Legal on VULA margin squeeze, iii) advice to BT Group Regulatory Finance on cost allocation issues, iv) legal advice to BT Benevolent Fund and v) chairing the BT Legal Policy forum which reviews contractual policies across the group.
[228] BT response dated 23 February 2016 to question 1.37 of the 4th CAR section 135 notice

because the team provides advice on a range of legal matters, the nature and relative amount of which is likely to vary year to year. We therefore proposed to attribute these costs using Openreach PAC.

2.327 Therefore, in the November 2015 LLCC Consultation we proposed to make a base year adjustment to reflect the attribution of Openreach General Counsel costs using Openreach PAC.

Stakeholder responses

2.328 No stakeholders commented on our proposal to make a base year adjustment to attribute the costs of Openreach General Counsel using Openreach PAC. However, TalkTalk said that it was unacceptable for Openreach to provide free of charge legal advice to the rest of BT. TalkTalk said that the "current approach is inconsistent with the intent of functional separation" and that the effect is that "other CPs are paying (via regulated product charges) for BT's retail legal advice."[229]

2.329 TalkTalk said that either Openreach General Counsel should stop providing legal advice to the rest of BT or provide the same service to other CPs at cost.[230]

Ofcom's response and decision

2.330 In principle we consider that the costs of work undertaken by Openreach General Counsel for other lines of business within BT should be attributed to those lines of business. However, as set out in the background section, BT has told us that the amount of work undertaken by Openreach General Counsel for other parts of BT is limited and the costs are principally incurred in relation to Openreach. On this basis, and given that BT also told us that Openreach lawyers do not usually record the time spent on different projects, we have not been able to identify an attribution rule that would reflect causality for Openreach General Counsel costs. We have therefore decided to make a base year adjustment to estimate the impact of attributing these costs using Openreach PAC, and we have not made any further adjustment for the limited amount of work Openreach General Counsel undertakes for other parts of BT.

2.331 We have noted TalkTalk's concern about Openreach General Counsel's provision of limited legal advice to other parts of BT. We consider that in the first instance these concerns should be reported to the Equality of Access Board (EAB) who monitor and report on BT's compliance with its Undertakings.[231]

[229] TalkTalk, November 2015 CAR Consultation response, page 14, paragraph 4.8
[230] TalkTalk, November 2015 CAR Consultation response, page 14, paragraph 4.9
[231] CPs can make complain to the EAB if they suspect that BT is in breach of the undertakings. See: http://www.btplc.com/Thegroup/Ourcompany/Theboard/Boardcommittees/EqualityofAccessBoard/Makingacomplaint/Makingacomplaint.htm

Openreach Engineering teams (OUCs BL, BV, BK, BI, BD) - [✂]£0m to £10m (November proposal: Openreach engineering team pay; decision: Openreach engineering team pay)

Description of cost

2.332 There are a number of engineering teams in Openreach and each team books time, and hence cost, to various 'classes of work' (CoWs). CoWs specify a type of activity or asset type on which engineers are engaged.[232]

2.333 Many CoWs are attributed to plant groups associated with particular assets (and these plant groups are subsequently attributed to cost components and services). However, some CoWs are generic in nature and so they cannot be attributed directly to plant groups. BT attributes some of these CoWs using COMCOS.

2.334 Table 2.27 shows the engineering teams that have some of their costs attributed using COMCOS in 2014/15. The table indicates that in 2014/15 the maximum proportion of cost attributed from these teams using COMCOS was 8%, and on average across these teams it was closer to 1%.

Table 2.27: Percentage of engineering team cost attributed using COMCOS, 2014/15

OUC	Description	£m	% of total team cost
BL	Openreach Network investment	[✂] £0m to £10m	8%
BD	Openreach Business & Ethernet	[✂] £0m to £10m	3%
BV	Openreach Service Delivery	[✂] £0m to £10m	0.4%
BK	Openreach Next Generation Access	-	-
BI	Openreach Frames Congestion	-	-
Total		[✂] £0m to £10m	1%

Source: BT response dated 18 December 2015 to question 1 of the 3rd CAR section 135 notice

2.335 The majority of engineering team costs attributed using COMCOS is from three engineering teams:[233]

- Openreach Network Investment (OUC BL). This is an operational team that works mainly on capital build programs.
- Openreach Services Delivery (OUC BV). This team consists of engineers who visit around 30,000 homes and offices every weekday on behalf of Openreach's customers.[234]

[232] BT, Accounting Methodology Document 2014/15, page 8
[233] BT response dated 21 January 2016 to question 1.34 of the 4th CAR section 135 notice.
[234] BT response dated 21 January 2016 to question 1.34 of the 4th CAR section 135 notice. The other two teams in 2013/14 are Openreach Next Generation Access which plans and deploys NGA in areas funded by BDUK and Openreach Frames Congestion which is a team which cleanses the main distribution frames of ceased jumpers to relieve congestion. The costs attributed from these teams using COMCOS is close to zero.

- Openreach Business and Ethernet (OUC BD). This is an operational team responsible for installing and maintaining Ethernet, optical and part services to business customers.

2.336 The CoWs recorded in these three engineering teams that are attributed using COMCOS capture the following activities:

- OBREC: Recovery of network equipment, cable and duct. BT told us that in practice this relates mainly to the recovery of redundant decayed poles and street cabinets.[235]

- GENM: time spent on general management support.

- MG: time spent on miscellaneous activities such as time spent with vehicles, administrative paperwork or some types of attempted fault clearance.

What we said in November

2.337 We said in the November 2015 CAR Consultation that the activities associated with the CoWs that are attributed using COMCOS could be considered to occur as a consequence of the other functions undertaken by the engineering teams; functions which are often directly attributed to plant groups. For example, while working on cable or duct projects the engineering team may need to spend some time on paperwork, on general management duties and recovering obsolete equipment. As a result, we said that the costs of these CoWs attributed using COMCOS are related to the other activities undertaken by these engineering teams and we proposed in the November 2015 CAR Consultation to attribute them using the previously attributed pay costs of these engineering teams ("Openreach engineering team pay").

2.338 Therefore, in the November 2015 LLCC Consultation we proposed to make a base year adjustment to reflect the attribution of Openreach Engineering Team costs currently attributed via COMCOS using Openreach engineering team pay.

Stakeholder responses

2.339 No stakeholders commented on this specific proposal.

Ofcom's response and decision

2.340 We consider that attributing these Openreach Engineering Team costs on the basis of Openreach engineering team pay would be causal since it appears that these costs often occur as a consequence of the other, primary functions undertaken by these engineering teams. For example, while working on cable or duct projects the engineering team may need to spend some time on paperwork, on general management duties and recovering obsolete equipment.

2.341 We have therefore decided to make a base year adjustment to reflect the impact of attributing these Openreach Engineering Team costs using Openreach engineering team pay.

[235] BT response dated 23 February 2016 to question 1.43 of the 4th CAR section 135 notice. Note that the recovery of copper is carried out by a different engineering team (OUC BLH) and the costs of this activity are attributed to plant group PG986R (Openreach other activities).

AG409: BT Wholesale general software and AG410: Openreach general software

Introduction

2.342 BT spends a significant amount each year developing software internally or purchasing software externally. For example, BT's statutory accounts show that in 2013/14 and 2014/15 it capitalised over £400m of internally developed software and around £70m of purchased software.[236]

2.343 The costs of developing and purchasing software are initially incurred by BT TSO. Software costs are then attributed to other lines of business where they are generally capitalised. At a high level, within lines of business, software costs (both operating costs and balance sheet entries) are either identified as product- or asset-specific (in which case they can be attributed directly to relevant plant groups), or they are identified as general software costs related to the support functions of that line of business.

2.344 For BT Wholesale and Openreach the general software costs associated with these lines of business are attributed to AG409 and AG410 respectively.[237] In 2014/15 AG409 included around [✂]£10m to £50m of general Wholesale software depreciation costs. In 2014/15 AG410 included around [✂]£10m to £50m of general Openreach software depreciation costs, although as explained below, AG410 also includes some other costs unrelated to software.

2.345 AG410 attributes costs in a similar way to COMCOS (both relate to Openreach costs), albeit at a different level of the cost attribution system.[238]

AG409 (BT Wholesale general software)

Description of cost

2.346 AG409 includes costs relating to internally developed software and externally purchased software relating to BT Wholesale. Table 2.28 shows a breakdown of software depreciation costs included in AG409 in 2014/15. Approximately 80% of depreciation costs related to internally developed software.

[236] Note 12, page 166, BT Group plc 2014/15 annual report. Note that not all software costs are necessarily capitalised (see page 152 of the BT Group plc 2014/15 annual report).
[237] Page 130 of BT's 2013/14 DAM says that AG409 and AG410 capture the costs of 'non-specific software depreciation' for BT Wholesale and Openreach respectively.
[238] COMCOS is a base methodology which means it applies to costs recorded in the general ledger. Following the base methodology stage costs from the ledger have been attributed to activity groups, plant groups or residual. AG409 and AG410 take place at the subsequent stage of the cost attribution hierarchy, when a number of activity groups are exhausted to other cost categories. For more information on the sequencing of cost attributions, see Section 3 of the June 2015 CAR Consultation.

Table 2.28: Software depreciation costs included in AG409

F8 code	Description	2014/15 £m
458334	Internally developed software	[✂] £10m to £50m
457134	Externally purchased software	[✂] £0m to £10m
Total		[✂] £10m to £50m

Source: BT response dated 18 December 2015 to question 7b of the 3rd CAR section 135 notice

What we said in November

2.347 We said in the November 2015 CAR Consultation that BT has found it difficult to provide a comprehensive explanation of the types of software that are included in AG409. The examples it gave of software included in AG409 were: development of systems to comply with the Undertakings, development of a white label call service for CPs who do not have network capability and development work associated with managing a TDM network for specific customers.[239]

2.348 While product specific software should be attributed to the relevant BT Wholesale product, the software costs in AG409 should relate to general BT Wholesale software costs. We considered that non-specific, general software costs cannot be associated with particular products or activities and we proposed that they should be attributed on the basis of BT Wholesale PAC.[240]

2.349 Therefore, in the November 2015 LLCC Consultation we proposed to make a base year adjustment to reflect the attribution of software depreciation costs included in AG409 on the basis of BT Wholesale PAC.

Stakeholder responses

2.350 No stakeholders commented on this specific proposal.

Ofcom's response and decision

2.351 We have not been able to identify an attribution rule that would reflect causality for the general software costs included in AG409. We have therefore decided to make a base year adjustment to estimate the impact of attributing software depreciation costs included in AG409 on the basis of BT Wholesale PAC.

AG410 (Openreach general software)

Description of cost

2.352 In 2014/15, around 44% of the costs in AG410 were associated with internally developed software relating to Openreach. There was only a very small amount of externally purchased software. The majority of the remaining costs included in AG410 were associated with miscellaneous activity carried out by Openreach engineering teams. Table 2.29 shows a breakdown of costs included in AG410 in 2014/15.

[239] BT response dated 23 February 2016 to question 1.44 of the 4th CAR section 135 notice
[240] We noted that where AG409 currently includes costs relating to software that can be directly allocated to products, BT should ensure that such costs are not included in AG409 in future.

Table 2.29: Software depreciation costs included in AG410

F8	Description	2014/15 £m	Proposed attribution
458334	Internally developed software	[✂] £10m to £50m	Openreach PAC
103931	Miscellaneous engineering activity	[✂] £10m to £50m	Engineering team pay
109650	Non-engineering pay	[✂] £0m to £10m	Openreach PAC
209317	Outsourced finance and accounting	[✂] £0m to £10m	Openreach PAC
	Other	[✂] £0m to £10m	Openreach PAC
Total		[✂] £50m to £100m	

Source: BT response dated 18 December 2015 to question 7b of the 3rd CAR section 135 notice. Note 2014/15 numbers do not sum due to rounding.

What we said in November

2.353 We said in the November 2015 CAR Consultation that BT had told us that the internally developed software cost attributed to AG410 in 2013/14 included fixed costs associated with testing Openreach software and an engineering tool called Artisan.[241] The examples of Openreach software provided by BT suggest that the software included in AG410 is non-specific and used across Openreach. On this basis we proposed to attribute the Openreach software costs included in AG410 using Openreach PAC.

2.354 We also explained that the second largest category of costs included in AG410 relates to miscellaneous engineering activity. This activity is associated with the MG class of work described above. We said that these particular costs in AG410 are related to the Openreach Service Delivery engineering team (OUC BV). Consistent with our proposal for Openreach engineering team costs currently attributed using COMCOS, we proposed that these costs should be attributed using engineering team pay.

2.355 We were not able to associate the relatively small remaining costs in AG410 with specific activities in Openreach and proposed to attribute them using Openreach PAC.

2.356 Therefore, in the November 2015 LLCC Consultation we proposed to make a base year adjustment to reflect the impact of attributing:

- Costs in AG410 related to miscellaneous engineering activity of the Openreach Service Delivery engineering team (OUC BV) using engineering team pay; and
- the remaining costs in AG410, including general internally developed software costs, using Openreach PAC.

Stakeholder responses

2.357 No stakeholders commented on this specific proposal.

[241] BT response dated 23 February 2016 to question 1.44 of the 4th CAR section 135 notice. Artisan is described on page 253 of BT's 2013/14 DAM.

Ofcom's response and decision

2.358 Other than the miscellaneous engineering team costs, we have not been able to identify an attribution rule that would reflect causality for the costs included in AG410. We have therefore decided to make a base year adjustment to reflect the impact of attributing:

- Costs in AG410 related to miscellaneous engineering activity of the Openreach Service Delivery engineering team (OUC BV) using engineering team pay; and
- The remaining costs in AG410, including general internally developed software costs, using Openreach PAC.

Section 3

Property and electricity

Introduction

3.1 Property and electricity costs accounted for [✂] £500m to £1bn of BT's costs in 2014/15. Property costs include the costs of running and maintaining BT's property estate in the UK, including its offices, exchange buildings, computer centres and motor transport workshops. Electricity costs are incurred within both offices, operational buildings and in some cases at NGA street cabinets.

3.2 In the November 2015 CAR Consultation we proposed adjustments to the way BT attributed its property and electricity costs in the RFS. In the November 2015 LLCC Consultation we proposed to adjust our base year costs to reflect these adjustments.

3.3 In this section, we explain how we have adjusted the base year costs to reflect the CAR analysis relating to property and electricity costs, as shown in Tables 3.1 and 3.2.

Table 3.1 Estimated impact of base year adjustments for Property costs, 2014/15, £m

	Operating costs	MCE	FAC
TI	4.3	(13.2)	3.0
Ethernet	(3.1)	(0.6)	(3.2)

Table 3.2 Estimated impact of base year adjustments for Electricity costs, 2014/15, £m

	Operating costs	MCE	FAC
TI	(0.6)	3.4	(0.2)
Ethernet	(0.5)	(0.5)	(0.5)

Background

3.4 Around 7% of operating costs in business connectivity markets relate to property costs and around 9% of the operating costs in these markets relate to electricity.

3.5 Property and electricity costs are included in three activity groups: AG106 (Group Property and Facilities Management Costs), AG412 (BT Property Fixed Assets) and AG414 (Property Provision)).

3.6 AG106 (Group Property and Facilities Management) has separate attribution bases for specialised space and for office space. There are also separate attribution bases for specialised electricity and specialised property costs. Nevertheless, property and electricity costs for offices are attributed together.

3.7 We explained in the November 2015 CAR Consultation that BT had suggested separating electricity costs out of AG106 and attributing these separately. We said that BT's suggestion seemed objective as it took account of all available information.

3.8 We proposed that property and electricity costs should be attributed separately. No stakeholders commented on this proposal. We therefore consider the attribution of property and electricity separately, below.

Property costs

Introduction

3.9 In the November 2015 CAR Consultation we considered the following issues relating to the way BT attributed property costs:

- The treatment of non-chargeable vacant space;
- Application of the Anchor Tenant principle in operational buildings with an MDF;
- The mark-up of space of LLU Hostels in operational buildings with an MDF; and
- The attribution of costs in exchanges that have not been unbundled.

3.10 We proposed in the November 2015 CAR Consultation that:

- The costs of any vacant space within any building should be attributed in the same way that non-vacant space is attributed within that building;
- BT should not attribute all vacant space within operational buildings with an MDF in accordance with the Anchor Tenant principle, i.e. it should not be attributed solely to Openreach, cable chambers or MDF areas;
- BT should not apply any mark-up for potential future growth to LLU hostel areas; and
- The costs of each type of space should be identified and attributed separately.

3.11 In the November 2015 LLCC Consultation, we proposed to adjust our base year costs to reflect these adjustments.

3.12 As explained below, informed by stakeholders' responses to the proposals in the LLCC and CAR Consultations and our further analysis, we have adjusted the base year costs to reflect the changes proposed in the November 2015 CAR Consultation.

3.13 For TI, BT has estimated that the impact of this base year adjustment is to increase operating costs by £4.3m and reduce MCE by £13.2m. For Ethernet, BT has estimated that the impact of this base year adjustment is to reduce operating costs by £3.1m and reduce MCE by £0.6m

3.14 Our adjustment to the base year costs reflects the combined impact of the individual adjustments proposed in the November 2015 CAR Consultation. While some of the decisions relate to equipment or space that is not used by Leased Lines services, changing the proportion of costs allocated to one market can affect the allocation of those (or other) costs to other markets, including leased lines.

3.15 We have therefore not calculated how the base year costs for the business connectivity markets would be affected if we adjusted for each element separately and have instead modelled the effect of all the changes to make a single adjustment to the base year costs.

Non-chargeable vacant space

3.16 Non-chargeable vacant space is the term used by BT to describe vacant space that is not re-charged to lines of business using transfer charges. It predominantly relates to space in office buildings.

3.17 The costs of non-chargeable vacant space are recorded within AG106 (Group Property and Facilities Management). They are however effectively attributed across all building types, including operational buildings with an MDF, in which vacant space had been attributed to Openreach under the Anchor Tenant principle (which we consider in more detail later in this section).

What we said in November

3.18 In the June 2015 CAR Consultation, we explained that the treatment of non-chargeable vacant space was not objective because costs of office buildings (which are more likely to be associated with non-regulated businesses) are attributed to operational buildings (which are more likely to be associated with regulated businesses). We proposed that BT should attribute property costs separately by building type, including non-chargeable vacant space, on the basis of the transfer charges for that building type.

3.19 In the November 2015 CAR Consultation, we explained that BT attributes property costs by type of space rather than by building type (as previously understood). This did not affect our view that the current methodology was neither causal nor objective. However, we updated our proposal to require BT to separately identify and separately attribute the costs of each type of space. These costs should include the costs of non-chargeable vacant space.

3.20 We said in the November LLCC Consultation that the further review and proposals made in the November 2015 CAR Consultation were relevant to the charge controls we proposed to set.[242] We therefore proposed to make a base year adjustment to reflect that the costs of each type of space should be identified and attributed separately and should include the costs of non-chargeable vacant space.[243]

Stakeholder responses

3.21 Only BT responded to the proposal that property costs must be attributed separately by type of space. BT did not explain why it considered its current methodology for the attribution of costs of non-chargeable vacant space was causal or objective but did say that it considered our November 2015 CAR proposal to be an appropriate alternative.

Ofcom's response and decision

3.22 We do not consider it is objective to attribute the cost of non-chargeable vacant space (which tends be in office buildings) to other buildings (which tend to be used more for regulated activities). Instead, we consider that the costs of each type of space should be separately identified and separately attributed.

[242] November 2015 LLCC Consultation, paragraph 3.8
[243] November 2015 LLCC Consultation, paragraphs 3.11 and 3.12

3.23 We have therefore decided to adjust the base year costs so that property costs (including the cost of vacant space) are attributed separately by type of space.

Application of the Anchor Tenant Principle

3.24 To attribute costs of an operational building with an MDF, BT attributes the costs to divisions in line with the floor space used by the BT divisions in that building. However, where there is spare capacity in such an operational building, BT treats this vacant space as if it was being used by Openreach. Allocating all vacant space in Operational Buildings with an MDF to Openreach is therefore consistent with Openreach being the anchor tenant in these buildings. BT refers to this as the Anchor Tenant Principle.

3.25 BT introduced this attribution basis in the 2012/13 Regulatory Financial Statements. Prior to this, BT did not separately identify vacant space as a separate cost and instead attributed the total property costs in proportion to usage.

3.26 The effect of this change was to increase the proportion of costs attributed to Openreach and to regulated services.

What we said in November

3.27 In the June 2015 CAR Consultation we explained why we considered BT's use of the Anchor Tenant Principle was not inappropriate.

3.28 In the November 2015 CAR Consultation, we explained why we changed our assessment and no longer considered the Anchor Tenant Principle to be an appropriate methodology for preparing the RFS.

3.29 We said that BT's methodology implies that vacant space in operational buildings with an MDF has a cost to BT equal to the costs BT has allocated to that space and that cost has been caused by Openreach. We said that BT had not demonstrated this to be the case.[244]

3.30 We said that there may be an argument that the presence of Openreach equipment in that building has caused BT to incur increased property costs if all of the following four criteria are met:

- BT was using a building that was larger than it needed;
- moving to a smaller building would be cheaper;
- the only reason BT could not move to the smaller, cheaper, building was the presence of Openreach equipment that in turn made that move impossible; and
- absent that reason, BT would already be in the cheaper building and already incurring the lower costs.

3.31 We said that BT has not demonstrated that these criteria are met. Instead, we said that it is likely that:

[244] November 2015 LLCC Consultation, paragraph 5.51

- *BT would still be using some of these buildings in any event.* We said it was not clear that BT would have already vacated these buildings had it not been for the presence of Openreach equipment, or that the costs and difficulties of moving this equipment would be the deciding factor in every building. On this basis, we said that the Openreach equipment could not be said to be the reason why BT was still in all of these buildings Therefore, Openreach cannot be said to have caused the vacant space; and

- *The cost caused by remaining in the other buildings is less than BT's methodology implies.* We explained that BT's attribution methodology is not a good measure of the costs of its vacant space. Specifically, we had no evidence that costs would reduce in proportion to the size of the building.

3.32 We also said that the attribution of the costs of vacant space under the Anchor Tenant Principle is not consistent with the attribution of costs of other underused or redundant assets. For example, the costs of spare capacity in duct space and in fibre cables are attributed on the basis of the current services that use those ducts or cables. The costs of moving underused ducts or cables on which there is spare capacity are not considered nor whether there is an anchor tenant of these assets.

3.33 As a result of our analysis we proposed in the November 2015 CAR Consultation that the Anchor Tenant Principle did not appear to be objective, consistent with other attribution methodologies or causal.

3.34 We therefore proposed that vacant space within operational buildings with an MDF must be attributed in the same way that non-vacant space is attributed in that exchange. We said that the effect of this proposal together with our proposal for non-chargeable vacant space would be to make the attribution of vacant space consistent across types of space within all of BT's buildings. It would also make the treatment of vacant space consistent with the treatment of other under-used and redundant assets.

3.35 In the November LLCC Consultation we said that the further review and proposals undertaken in the November 2015 CAR Consultation in relation to this type of vacant space were relevant to the charge controls we proposed to set. We therefore proposed to make a base year adjustment to reflect that vacant space within operational buildings with an MDF must be attributed in the same way that non-vacant space is attributed in that building.[245]

Stakeholder responses

3.36 Four stakeholders responded to our proposal that BT should not use the Anchor Tenant Principle to attribute costs of vacant space in exchanges. BT disagreed with our analysis and proposals. Other stakeholders broadly agreed.

3.37 BT did not agree that the use of the Anchor Tenant Principle to attribute vacant space is inappropriate and said that Ofcom's proposal for attributing vacant exchange space was itself inappropriate.

[245] November 2015 LLCC Consultation, paragraphs 3.11 and 3.12

3.38 BT said that the majority of its exchanges "do meet all four of Ofcom's criteria."[246] BT, supported by a report commissioned from FTI, stated that:

- It is "obvious that our exchanges are in general larger than would be needed for our current operations and Ofcom does not appear to disagree."[247] BT said its data was clear that the average amount of vacant space at its exchanges is 20%.[248]

- Moving to a smaller building with similar facilities in a similar location would have a smaller rent if the £ per square metre price was similar. BT explained that in many cases equipment could be housed in cabinets saving more rent. FTI supported BT's position, noting that "all other things being equal, the rental costs of a smaller building would be lower than a larger building" and that, in their view, "assuming that commercial property costs are proportional to floor space is reasonable."[249]

- BT's plans to move out of the majority of its exchanges in the medium term. BT explained that leases on its exchanges typically run until 2031and that its goal is to serve all voice customers by an IP to the premises solution by 2025 mitigating the need for [✂] >4,000 exchanges. BT said that the exception would be the exchanges housing ADSL equipment which are expected to be replaced by VDSL over time.[250] FTI said that for most of the redundant exchange buildings "the entire cost of the property could be saved"[251] but that a number of very small exchanges in rural locations will be retained where either the costs of vacating do not outweigh those of moving or where a radio mast may be housed on the exchange.

- The "only reason that exchanges would not be vacated immediately (thus saving on rental, rates and other accommodation costs) is the costs of relocating the copper network to another building."[252] FTI explained that "BT is currently planning to migrate its PSTN services to an IP platform and expects to do so by 2025. The only factor delaying this migration is the need to maintain current copper based services: ADSL and PSTN".[253]

3.39 FTI estimated that [✂] 'around a third' of vacant space costs is incurred at exchanges that BT expects to vacate by 2031 when it has no need to house MDF or other E-side copper network related equipment. On this basis, FTI considered that [✂] around a third of the costs of vacant space meet Ofcom's criteria and should therefore be allocated to Openreach in accordance with the Anchor Tenant Principle.[254]

3.40 In its report commissioned by BT, Deloitte said that "on the basis of the analysis and evidence provided by FTI, the application of the Anchor Tenant Principle does not

[246] BT, November 2015 CAR Consultation response, page 14, paragraph 77
[247] BT, November 2015 CAR Consultation response, page 13 paragraph 73
[248] Vacant space at BT exchanges with an MDF as calculated by FTI based on data provided by BT. FTI, November 2015 CAR Consultation response, page 14, paragraph 3.15
[249] FTI, November 2015 CAR Consultation response, page 14, paragraphs 3.16 – 3.21
[250] BT, November 2015 CAR Consultation response, page 14, paragraph 75
[251] FTI, November 2015 CAR Consultation response, page 15, paragraphs 3.25
[252] BT, November 2015 CAR Consultation response, page 14, paragraph 76
[253] FTI, November 2015 CAR Consultation response, page 16, paragraph 3.29
[254] FTI, November 2015 CAR Consultation response, page 16, paragraph 3.32

seem inappropriate, for the proportion of vacant space that satisfies the four criteria."[255] Deloitte noted that the proportion of vacant space and therefore the cost attributable to Openreach may, given the nature of migration to an IP network, need to be reviewed periodically.

3.41 BT also challenged the need for "the criteria to apply in every exchange" in order for the Anchor Tenant Principle to be appropriate with reference to the RAP.[256] BT explained that even if it were correct that all criteria had to be met "Ofcom's objections would be met by restricting the methodology to those exchanges where its tests were met, and not by striking it our completely as Ofcom is proposing."[257]

3.42 Both BT and FTI argued that the Anchor Tenant Principle approach is consistent with the approach for duct and fibre. BT said that in "all cases we are allocating costs of our assets across existing (and not past) services" and that "there is no evidence that spare capacity in duct or fibre costs are being incurred due to a single service or set of services as there is with vacant exchange space."[258]

3.43 TalkTalk said that Ofcom was right to reject what it saw as an unjustified methodology that was inconsistent with causality.

3.44 Vodafone said "that the Anchor Tenant Principle is inconsistent with the allocation of costs of other underused, redundant or spare assets."[259] Vodafone argued that BT "had not demonstrated and should not assume that Openreach equipment was the sole cause preventing forward looking avoidance of vacant space,"[260] or "that forward –looking property costs would reduce in proportion to floor space."[261]

3.45 In its supplementary response Vodafone argued that:

- BT's November response demonstrates that it will not move from all exchanges. This undermines the basis of the Anchor Tenant Principle by confirming its basic assumption has no grounds in reality.
- Vacant space will only be avoided once all space is avoided and there is no need for exchanges to house TSO and Openreach equipment[262] and this means that vacant space should be treated as a common cost between Openreach and TSO equipment.
- Unit costs (£ per square metre) are not common across different sized properties and due to economies of scale and transition costs "the costs caused by remaining in a larger building are likely to be less than BT's method implies."[263]
- BT's plans to leave exchanges also require a migration from ADSL broadband (with DSLAMs at exchanges) to VDSL broadband. This will require TSO

[255] Deloitte, November 2015 CAR Consultation response, page 2
[256] BT, November 2015 CAR Consultation response, page 14, paragraph 78
[257] BT, November 2015 CAR Consultation response, page 14, paragraph 78
[258] BT, November 2015 CAR Consultation response, page 15, paragraph 82
[259] Vodafone, November 2015 CAR Consultation response, page 12, paragraph 5.2
[260] Vodafone, November 2015 CAR Consultation response, page 12, paragraph 5.2
[261] Vodafone, November 2015 CAR Consultation response, page 12, paragraph 5.2
[262] Vodafone, Supplementary November 2015 CAR Consultation response, page 5, paragraph 33
[263] Vodafone, Supplementary November 2015 CAR Consultation response, page 5, paragraph 38

DSLAM broadband equipment at exchanges even if Openreach equipment has been removed.

3.46 In its response Virgin agreed that "the current attribution methodology may overstate the extent to which Openreach equipment is causally responsible for incurring the cost of this vacant space across its portfolio of exchanges."[264] Virgin said that BT should provide the analysis to demonstrate that the presence of Openreach equipment "is genuinely one of the primary economic factors in not rationalising premises in some cases."[265]

Ofcom's response and decision

3.47 As explained above, prior to 2012/13, BT attributed the cost of exchange buildings in proportion to the space taken by the activities that used them. In 2012/13 BT chose instead to separately identify the space that it considered to be vacant, attribute a proportion of the property costs to that vacant space, then attribute all of that cost to Openreach. The effect of this change was to increase the proportion of property costs that were attributed to regulated services.

3.48 BT explained that its new methodology reflects its view that the cost of the vacant space is caused by the presence of Openreach equipment in the exchange buildings. We said in November that to consider that Openreach had in fact caused the cost that BT attributes to vacant space, four criteria had to be met.

3.49 Having considered stakeholders' responses, we still consider that these four criteria need to be met and remain of the view that BT has not demonstrated that this is the case.

3.50 BT has explained why moving out of exchanges is made more complicated by the presence of Openreach equipment, but we agree with Vodafone that BT has not demonstrated that it would have already moved out of these exchanges if these complications did not exist.

3.51 BT might be correct that moving Openreach equipment is expensive and presents considerable difficulties. However, it has not shown that absent these difficulties it would have already vacated these buildings. We consider that there are likely to be other reasons why BT has not moved out of these buildings.

3.52 The difficulties BT would face if it chose to vacate a building are not limited to those relating to Openreach equipment; other non-Openreach equipment such as PSTN and data network switches associated with Traditional and Contemporary Interface networks or Broadband could also be a factor. We agree with Vodafone that the need for TSO DSLAMs will remain even if the need for Openreach equipment is removed so this might also complicate or prevent any change of premises. BT's consultants also recognise that Openreach equipment is not the only factor; as noted above, FTI states that "BT is currently planning to migrate its PSTN services to an IP platform and expects to do so by 2025. The only factor delaying this migration is the need to maintain current copper based services: ADSL and PSTN". However, the ADSL equipment is not managed by Openreach.

[264] Virgin, November 2015 CAR Consultation response, page 2, question 5.2
[265] Virgin, November 2015 CAR Consultation response, page 2, question 5.2

3.53 Therefore, BT has not demonstrated that it only remains in these buildings because of the Openreach equipment. Indeed, as explained below, it appears that BT would still be in most of these buildings in any event.

3.54 BT states that it has plans that would remove the need for [✂] >4,000 exchanges by 2025. No evidence of these plans or progress against these plans has been provided. As a result we are unable to take a view as to the likelihood of BT's plans being achieved by 2025. Further, while BT says that it is "continually assessing opportunities to vacate exchange buildings in prime locations" no evidence has been provided as to the outcomes of this continual assessment or that BT would have already moved out of any operational buildings with vacant space.

3.55 In fact, BT's own analysis appears to confirm that, in most cases, it would not have already moved out of these buildings. BT's consultants, FTI, estimated that only [✂] around a third of vacant space costs is incurred at exchanges that BT plans to vacate by 2031 (when it says it will have no need to house MDF or other E-side copper network related equipment). On this basis, FTI considered that [✂] 'around a third of the costs of vacant space meet Ofcom's criteria and should therefore be allocated to Openreach in accordance with the Anchor Tenant Principle. Based on FTI's analysis, it therefore appears that BT has no plans to leave the exchanges that incur [✂] around two thirds of the vacant space costs at any point, even when it no longer considers the presence of Openreach equipment to be a factor. Therefore, it cannot be said that the cost BT has attributed to vacant space is caused by Openreach.

3.56 BT has not provided any details of the exchanges that it says account for [✂] around a third of vacant space costs or shown that it would have already vacated them. As noted above, BT's evidence that it would have moved out of these exchanges is an assertion that it plans to vacate them by 2031 by when it says it will have no need to house MDF or other E-side copper network related equipment. We do not consider a plan to vacate premises by 2031 to be persuasive evidence that BT would vacate the same premises over a decade earlier (by the end of the current charge control period in 2018) were it not for the presence of Openreach equipment.

3.57 Finally, even if BT would have already moved out of some of the exchanges that it says it plans to vacate by 2031, we are not persuaded that the cost attributed to the vacant space is a good measure of the cost that would be saved. This is in part because BT has not demonstrated that it would be able to eliminate all vacant space and in part because BT has not demonstrated that it would reduce costs in proportion to any reduction in vacant space that it could achieve.

3.58 As explained in the November 2015 CAR Consultation, we still consider that it is unlikely that all vacant space in exchanges can be avoided. No exchange is likely to be exactly the size required, without any spare capacity, nor would this be desirable. Vacant space might be needed to provide room for systems expansion, or might grow as systems are miniaturised through technological change. The existence of some vacant space would not therefore necessarily lead to BT wanting to vacate an exchange building. Further, we would not expect BT to want (or be able to find) an alternative building with no vacant space at all so it does not follow that BT could or would avoid all of the vacant space by changing the buildings.

3.59 Further, if BT could reduce the amount of vacant space, it does not follow that the reduction in cost would be in proportion to the reduction in space. FTI says that "all other things being equal, the rental costs of a smaller building would be lower than a larger building" and that "assuming that commercial property costs are proportional to floor space is reasonable". However, the nature of BT's Telereal lease agreement

(based on rates agreed in 2001 plus a fixed 3% annual inflator)[266], means that it is unlikely that the costs of each building are in line with market rates, so it is also unlikely that any change in costs would be in proportion to the reduction in space.

3.60 Finally, we do not agree with BT's assertion that the Anchor Tenant Principle is consistent with the approach to the allocation of duct and fibre. In the November 2015 CAR Consultation we explained that the costs of spare capacity in duct space and in fibre cables are attributed on the basis of the current services that use those ducts or cables. The costs of moving underused ducts or cables on which there is spare capacity are not considered nor whether there is an anchor tenant of these assets.

3.61 Therefore, we do not accept BT's assertion that the cost it now attributes to vacant space is a good measure of the cost caused by that vacant space or that the vacant space itself is caused by the presence of Openreach equipment. We therefore do not consider that the attribution basis introduced by BT in 2012/13 provides an objective or causal basis for determining base year costs.

3.62 We have therefore adjusted the base year costs.

3.63 We do not consider there to be a clear causal driver of the costs that BT attributes to vacant space. Therefore, we have looked for an objective basis for attributing these costs in the base year. We consider that the most objective basis is to treat these costs in same way as the other property costs and attribute them to divisions in proportion to the space that they use.

3.64 The effect of this adjustment is to treat property costs on a similar basis to the way BT treated them before it introduced the concept of vacant space in 2012/13.

The mark-up of space of LLU Hostels in operational buildings with an MDF

3.65 BT currently marks up LLU hostel space by 42% to allow for future growth but does not then attribute any of the remaining vacant space to these areas.

What we said in November

3.66 In the June 2015 CAR Consultation we noted that BT currently marks up LLU hostel space by 42% to allow for future growth but does not then attribute any of the remaining vacant space to these areas. We said that the mark-up was based on data that was out of date.

3.67 In the November 2015 CAR Consultation, we said that it was not clear why LLU hostel areas should be marked-up for future growth while equipment areas owned by TSO were not. We said that while some justification for this "forward looking approach" might have existed when large numbers of local exchanges were being unbundled and demand for unbundling services was growing rapidly there seemed

[266] See for example: BT Group, Financial Review: profit on sale of property fixed assets, 2002, http://www.btplc.com/report/financial_fixedassets.shtml.

little current justification. The continued adoption of a 42% mark-up based on forecasts from 2012[267] seems biased and not to be objective.

3.68 We explained that our proposed rejection of the Anchor Tenant Principle would also lead to an inconsistent treatment of vacant space if LLU hostel space continued to be marked-up.

3.69 We therefore said that the current methodology for attributing costs of operational space to LLU hostel areas did not appear objective because it takes account of out of date information that results in costs for LLU hostel areas being overstated.

3.70 In the November 2015 LLCC Consultation, we said that the proposals made in the November 2015 CAR Consultation in relation to these costs were relevant to the charge controls we proposed to set. We therefore proposed to adjust the base year costs to treat LLU hostel areas in the same way as any other areas within operational buildings ensuring that the current space requirements should not be increased to reflect any potential future growth.

Stakeholder responses

3.71 Stakeholders other than BT broadly agreed with the analysis in the November 2015 CAR Consultation and our proposal to treat LLU hostel areas in the same way as any other areas within operational buildings.

3.72 TalkTalk said that "the mark-up for LLU hostels was inappropriate both in principle and in terms of the actual assumption."[268] Vodafone also agreed that the mark-up of LLU hostel space is inappropriate and argued that it is inconsistent with BT's overall cost allocation methodology which "bases allocations on current usage and not a forecast of future usage, and it results in the overstatement of LLU hostel costs."[269]

3.73 Virgin said that if some vacant space is earmarked for future growth requirements, "accounting for this space would lead to a more causal driver as it would reflect one of the economic factors BT considers."[270] Virgin explained that for the "approach to be causal, unbiased and objective, any such mark-up should rely on more up-to-date information than 2012 forecasts."[271] Virgin considered that not having this information would mean "that future growth requirements may not be an economic factor that is actively considered in decision making."[272]

3.74 BT did not agree that its current methodology was inappropriate and argued that rather than finding the whole methodology inappropriate Ofcom's objection could be overcome by using more recent information. However, BT agreed that our proposal provided an appropriate alternative methodology.[273]

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[267] We explained in paragraph 9.66 of the June consultation that this uplift was calculated in 2012 using a forecast of future Point of Presence provided by CPs to Openreach. This was used to forecast the increase in LLU space requirements between 2012 and 2017.
[268] TalkTalk, November 2015 CAR Consultation response, page 15, paragraph 4.12
[269] Vodafone, November 2015 CAR Consultation response, page 12, paragraph 5.1
[270] Virgin, November 2015 CAR Consultation response, page 2, question 5.2
[271] Virgin, November 2015CAR Consultation response, page 2, question 5.2
[272] Virgin, November 2015 CAR Consultation response, page 2, question 5.2
[273] BT, November 2015 CAR Consultation response, page 16, paragraph 93

Ofcom's response and decision

3.75 If the relative allocation of space in operational buildings was likely to change significantly during the period of a price control, there may be a case to take this into account when deciding how best to attribute costs in the final years of a cost forecast used to inform a charge control.

3.76 However, such an approach should be based on reliable forecasts of changes in the space required for all services and divisions. As explained above, BT's mark-up is based on out of date data which appears likely to significantly overstate the additional space that may be required by LLU hostels and does not appear to be objective as it does not consider whether other services (regulated or unregulated) may also need additional space in future.

3.77 Further, even if it was appropriate to reflect BT's forecast change in how space will be used in the later years of the price control period, we do not consider it is appropriate to do so by baking it in to the base year costs.

3.78 We have therefore adjusted the base year costs to remove the effect of BT's mark-up by attributing the costs associated with LLU hostel areas in the same way as any other areas within operational buildings (without any increase to reflect any potential future growth).

Attribution of costs in exchanges that have not been unbundled

3.79 In the November 2015 CAR Consultation, we noted that TalkTalk had raised a potential objectivity concern that the current attribution "appears to allow LLU operators to be attributed space costs in exchanges that are not and never will be unbundled."[274]

What we said in November

3.80 In November, we explained that for LLU hostel areas there do not appear to be grounds for such concerns. Under both the current and our proposed attribution methods these areas should only attract costs from exchanges that are unbundled. As space costs are allocated within each exchange LLU hostel areas should not be attributed any space in exchanges that have not been unbundled.

3.81 We noted that the situation was less clear for costs that may be shared across, for example, both WLR and MPF rental services such as the costs of MDF or cable chamber areas.

3.82 However, we noted that attributing costs in unbundled exchanges separately from those that have not been unbundled would add considerable complexity and that such a change may well be impractical the current methodology seems objective.

3.83 We therefore said that we did not consider that there was a need to change the way that costs in exchanges that have not been unbundled.

[274] TalkTalk, June Consultation response, page 18, paragraph 3.84

Stakeholder responses

3.84 Stakeholders did not respond to this proposal

Ofcom's response and decision

3.85 We do not consider that any base year adjustment is needed.

Calculation of the adjustment

3.86 Table 3.3 sets out our adjustment to base year costs in respect of property costs.

Table 3.3 Estimated impact of base year adjustments for Property costs, 2014/15, £m

	Operating costs	MCE	FAC
TI	4.3	(13.2)	3.0
Ethernet	(3.1)	(0.6)	(3.2)

Electricity costs

Introduction

3.87 In this part of the section, we consider adjustments to the base year data relating to electricity costs. Electricity costs represent around 9% of costs in the Business Connectivity markets in 2014/15.[275]

3.88 In 2014/15 BT attributed [✂]£200m to £250m of costs associated with electricity between Openreach and TSO and then between regulated and unregulated products.[276]

3.89 In the November 2015 CAR Consultation we said we had causality and objectivity concerns because the attribution of electricity incurred by TSO equipment does not take account of all available and up to date information and in some cases uses redundant information.

3.90 In the November 2015 LLCC Consultation we therefore proposed to make a base year adjustment to reflect the impact of (1) directly allocating electricity costs for equipment (not related to offices or Openreach) that is specifically metered to product and asset groups and (2) apportioning the remaining electricity costs for equipment that is not specifically metered on the basis of relative estimated electricity consumption, calculated using disaggregated and the most recent annual data.

3.91 As explained below, informed by stakeholders' responses to the proposals in the LLCC and CAR Consultations and our further analysis, we have adjusted the base year costs to reflect the changes proposed in the November 2015 CAR Consultation.

3.92 For TI, BT has estimated that the impact of this base year adjustment is to reduce operating costs by £0.6m and increase MCE by £3.4m. For Ethernet, BT has

[275] BT, response to 8th CAR s135, dated 10 March 2016, question 2bii
[276] BT, 2014/15 RFS Additional financial Information schedule A12 – control files, dated 17 August 2015

estimated that the impact of this base year adjustment is to reduce operating costs by £0.5m and reduce MCE by £0.5m.[277]

3.93 We note that our adjustment to the base year costs reflects the combined impact of the individual adjustments proposed in the November 2015 CAR Consultation. While some of our decisions relate to equipment that is not used to provide Leased Lines, changing the proportion of costs allocated to one market can affect the allocation of those (or other) costs to other markets.

3.94 We have therefore not calculated how the base year costs for the business connectivity markets would be affected if we adjusted for each element separately and have instead modelled the effect of all the changes to make a single adjustment to the base year costs.

Description of methodology

3.95 All electricity costs are included in AG106 (Group Property and Facilities Management). Electricity costs in operational space are generally either attributed to TSO or Openreach.

3.96 The electricity costs incurred by TSO equipment are attributed to plant groups using a bottom up model. This estimates power consumption for different types of equipment using maximum consumption ratings or sample readings. These estimates are then used to attribute electricity costs to these equipment types and on to plant groups.

Electricity for Openreach

3.97 In the November 2015 LLCC Consultation we said that we had no concerns about the manner in which Openreach electricity costs are allocated. No stakeholders responded on this point. We have therefore not adjusted the base costs in respect of Openreach electricity costs.

Electricity for TSO

What we said in November

3.98 In the November 2015 CAR Consultation we noted that BT had made or proposed some changes to the way that it attributes electricity costs. These changes include:

- *Changes already made by BT in its 2014/15 RFS,* as follows:
  - To correct errors in the model used to attribute electricity costs to PSTN digital switching equipment (see *1.PSTN Equipment Errors*, below); and
  - To correct an error in the way LLU energy costs were attributed to LLU services (See 2.*LLU Energy Costs ring-fencing*).
- *Changes proposed by BT, but not reflected in its 2014/15 RFS*, as follows:

[277] BT, response to 8th CAR s135, dated 9 February 2016, question 1

- To use more granular volume data to better reflect the relative power use of different PSTN switching equipment, and more up to date data to attribute electricity costs to processors and main exchange equipment (See *3.PSTN Equipment Methodology Change*);

- To estimate transmission equipment power consumption by each type of equipment by multiplying equipment volumes from PACS or INS by the manufacturers' theoretical power consumption (see *4.Transmission Equipment*);

- To use card volumes rather than rack capacity as a basis for estimating energy consumption for 21CN equipment (see *5.21CN Equipment*);

- To estimate power consumption for DSLAMs by using the volume of actual racks, using different power ratings for each category of mux type; and assuming unused racks had a lower power rating of 1/3 max power load (see *6.DSLAM Equipment*);

- To use the volumes used by the TSO Network electricity planning team to attribute electricity costs for IP equipment (see *7.IP Equipment*); and

- To correct an error in the way BT applied the ring-fencing of the LLU energy costs in the 2014/15 RFS (which meant that not enough cost was attributed to some specialised accommodation equipment and back-up power equipment (see *8.Implementation of LLU Energy Costs ring-fencing*).

3.99 As explained below, we proposed that:

- all the changes made by BT in its 2014/15 RFS were appropriate; and

- BT should now make the changes it proposed but did not reflect in the 2014/15 RFS.

3.100 In the November LLCC Consultation, we proposed to adjust the base year data to reflect the proposals made by BT but not yet reflected in the 2014/15 RFS.

3.101 We also identified three further issues. We proposed that:

- the costs of power consumed by NGA street cabinets should be directly attributed to NGA in the same way that electricity costs for LLU equipment are ring-fenced (see *9.NGA Equipment*);

- the base data used to attribute electricity consumption by building should be updated annually (see *10.Electricity Consumption by Building*); and

- we would work with BT to better understand how BT measured electricity consumption for different equipment (see *11.Measures of Electricity Consumption*).

3.102 In the November 2015 LLCC Consultation, we proposed to adjust the base year costs in respect of the costs of power consumed by NGA street cabinets. We did not, at that time, have the necessary data to make an adjustment in respect of electricity consumption by building. We made no proposed adjustments relating to measures of electricity.

3.103 We explain the proposals listed above in more detail, below.

1. PSTN Equipment Errors

3.104 We explained in the November 2015 CAR Consultation that BT had identified errors in the 2013/14 TSO electricity model used to attribute electricity costs to PSTN digital switching equipment.

3.105 We explained in the November 2015 CAR that we agree with the corrections that BT had made. As these errors were corrected in the 2014/15 Regulatory Financial Statements, no adjustment to the base year costs was required.

2. LLU Energy Costs ring-fencing

3.106 In the November 2015 CAR, we noted that in the 2013/14 Regulatory Financial Statements, BT identified the energy consumed by and recharged to LLU operators. However, as BT attributes electricity costs within AG106 on the basis of the transfer charges, applying a percentage to the transfer charges will not necessarily result in the actual incurred LLU energy costs being attributed to LLU services.

3.107 BT corrected this error in the 2014/15 Regulatory Financial Statements.

3.108 We explained in the November 2015 CAR that we agree with the corrections that BT had made. As these errors were corrected in the 2014/15 Regulatory Financial Statements, no adjustment to the base year costs was required.

3. PSTN equipment methodology changes

3.109 In the November 2015 CAR Consultation, we noted that BT identified outdated data hardcoded into electricity models and proposed the use of more granular volume data that better reflected different PSTN switching equipment's relative power use.

3.110 BT also proposed to update the attribution of electricity costs to processors and main exchange equipment to reflect the most up to date data from TSO. BT said that this would result in the attribution of electricity costs for AXE10 switching equipment being more accurate as it would no longer be based on System X switching equipment's power levels. Instead it would use actual relevant equipment volumes and separate power assumptions for each type of equipment.

3.111 We said that the current methodology for attributing electricity costs to PSTN equipment does not take into account the most accurate and up to date information and is therefore not objective. As BT's proposals appeared to take this information into account, we proposed BT should implement the change.

3.112 In the November 2015 LLCC Consultation, we proposed to adjust the base year costs to reflect this change.

4. Transmission equipment

3.113 In the November 2015 CAR Consultation, we explained that the assumptions for transmission equipment power consumption were last updated in 2004/05. Volumes were taken from the Core Transmission Costing System (CTCS) but the CTCS did not contain the correct volume of transmission equipment. Therefore, BT restated the volumes of transmission equipment by manually increasing the value.

3.114 Since 2012/13 the volumes used in the electricity model have been sourced from Network Control Layer Planning Assignment and Configuration System (PACS), or Integrated Network System (INS). These sources include all relevant equipment volumes, so these no longer need to be augmented.

3.115 BT proposed to estimate power consumption by each type of equipment by multiplying equipment volumes from PACS or INS by the manufacturers' theoretical power consumption. The exception would be Core Radio electricity for which maximum power consumption rating data was available.

3.116 We said that the current methodology for attributing electricity costs to transmission equipment is not appropriate because it takes account of redundant information.

3.117 We considered that BT's proposal to remove volume adjustments is an improvement on those methods in place in the 2013/14 Regulatory Financial Statements and proposed BT should attribute these costs in its RFS on this basis.

3.118 In the November 2015 LLCC Consultation, we proposed to adjust the base year costs to reflect this change.

5. 21CN equipment

3.119 In the November 2015 CAR Consultation, we explained that BT's current attribution model uses maximum card rack capacity to calculate the electricity consumption for 21CN equipment. However, not all racks are full so the current method will overstate power consumption for this equipment. Internal models used by BT's TSO energy team use actual card volumes instead of racks.

3.120 BT proposed to align the regulatory accounting treatment with the attribution used by the TSO energy team and thus use the card volumes rather than rack capacity as a basis for estimating energy consumption for 21CN equipment.

3.121 We considered that the current methodology for attributing electricity costs to 21CN equipment was not objective as it does not take account of available information about rack usage.

3.122 We proposed that BT should implement its proposal for the attribution of costs to 21CN equipment, as we considered that BT's proposal addressed our objectivity concern by using card volumes rather than rack volumes.

3.123 In the November 2015 LLCC Consultation, we proposed to adjust the base year costs to reflect this change.

6. DSLAM equipment

3.124 In the November 2015 CAR Consultation, we explained that BT's current attribution model uses the maximum rack count volumes of used and unused racks to attribute electricity costs to DSLAM equipment. The maximum rack count is the total number of racks that could be installed in locations. This overstates the number of racks actually installed and consuming power.

3.125 We also noted that the current power rating assumption is the same for all mux types. However, different types of muxes will consume different levels of power. In addition not all racks are used and these will consume less power than one that is in use.

These two effects; rack count and power ratings, lead to the current models overstating electricity consumption of DSLAMs.

3.126 We explained that BT had proposed to estimate power consumption for DSLAMs by: using the volume of actual racks, using different power ratings for each category of mux type; and assuming unused racks had a lower power rating of 1/3 max power load.[278]

3.127 We said that the current methodology for attributing electricity costs to DSLAM equipment is not objective as it does not take account of the available data on rack use and multiplexor (mux) type.

3.128 We explained that we considered BT's proposal to reflect different power ratings for different pieces of equipment and use actual rack volumes to be objective as it takes account of all available data. We therefore proposed that BT should implement its 2015 proposal for the attribution of costs to DSLAMs.

3.129 In the November 2015 LLCC Consultation, we proposed to adjust the base year costs to reflect this change.

7. IP equipment methodology changes

3.130 In the November 2015 CAR Consultation, we explained that BT's attribution model estimates electricity costs for three types of IP cabinets and noted that this data has not been updated since 2012/13 and is no longer available in the format required by the current model.

3.131 We explained that BT proposed to use the same volumes as those used by the TSO Network electricity planning team in their cost model in order to use more relevant and up to date data.[279] We said that BT's proposal to use up to date data held by BT TSO is objective as it takes account of all available data.

3.132 We therefore proposed that BT should implement its proposal for the attribution of costs to IP equipment.

3.133 In the November 2015 LLCC Consultation, we proposed to adjust the base year costs to reflect this change.

8. Implementation of LLU Energy Costs ring-fencing

3.134 In the November 2015 CAR Consultation we said that, during our review of BT's proposed changes to the 2014/15 Regulatory Financial Statements, BT identified an error in the implementation of ring-fencing LLU energy costs.

3.135 BT erroneously had not taken account of the impacts of the LLU ring-fencing when attributing the costs of activity groups AG161, AG162, AG163 and AG164 in 2014/15 Regulatory Financial Statements. We said that this led to LLU products being

[278] This assumption was based on a study by ETSI, the European Telecommunications Standards Institute

[279] BT, ASIG paper RA15-072 provided to Ofcom 25 August 2015

attributed some of the specialised accommodation[280] equipment and back-up power equipment costs, but not as much as they should have been. Instead too much cost was attributed to other products.

3.136 We said that we agreed BT should correct this error in the 2015/16 Regulatory Financial Statements.

3.137 In the November 2015 LLCC Consultation, we proposed to adjust the base year costs to reflect this change.

9. NGA Equipment

3.138 In the November 2015 CAR Consultation we explained that NGA street cabinets are not supplied by power from BT's exchange buildings. They have their own power supply and are individually metered. These metered amounts feed into the current electricity attribution model, which then calculates the percentage that this consumption makes of total electricity costs. It is this percentage that is used within the attribution model to attribute electricity costs to NGA network components.[281]

3.139 We said that this methodology contains an error which is similar to that which BT identified when it sought to ring-fence LLU equipment costs. Applying a percentage to the total electricity consumption will not result in the same consumption value as that recorded by the meters in the NGA cabinets.

3.140 We explained that BT has confirmed it has the information about how much power is consumed by NGA street cabinets and therefore the costs. We said that we are not aware of any reasons why these costs cannot be directly attributed to NGA in the same way that electricity costs for LLU equipment are separately ring-fenced.

3.141 We said that the current methodology for attributing electricity costs to NGA equipment is not objective because it does not take account of all available data.

3.142 We therefore proposed that the costs of power consumed by NGA street cabinets must be directly attributed to NGA in the same way that electricity costs for LLU equipment are separately ring-fenced. We said that our proposal addresses our objectivity concern as it takes account of all available data and that it is consistent with our proposed treatment of LLU equipment costs.

3.143 To further aid consistency of approach we also proposed that where BT meters and tracks actual electricity usage for any specific types of equipment BT must ring-fence or directly allocate these costs to services using that equipment and then apportion the remaining costs across all the other equipment types.

3.144 In the November 2015 LLCC Consultation, we proposed to adjust the base year costs to reflect these proposals.

10. Electricity Consumption by building

[280] Activity groups AG161, AG162, AG163 and AG164 relate to specialised accommodation equipment and back-up power equipment. Specialised accommodation equipment includes heating, ventilation and air-conditioning units whereas back-up power includes back-up generators.
[281] BT, response to 5th CAR s135, dated 15 January 2016 (Q1 b)

3.145 In the November 2015 CAR Consultation we explained that the electricity attribution base is built on BT Property's transfer charges and that this in turn is based on building electricity consumption information dating from 2007.

3.146 We said that it seems likely that each building's relative electricity consumption now will be different to what it was in 2007. Consumption will have been affected by many factors. Equipment types and numbers employed will have changed in response to network initiatives, such as rollout of the 21CN and NGA platforms, and unbundling. There may well have been significant changes in office occupancy.

3.147 We said that the use of 2007 data on which to base electricity attributions is not objective as it does not take account of available and up to date financial and operational data that is relevant. We also said that BT TSO holds up to date data on electricity consumption by building and there is no reason why this information could not be used as a basis for the attribution of electricity costs.[282]

3.148 As a result we said that the current electricity attribution base is not objective and that more up to date information is practicable to use.

3.149 We therefore proposed that BT must update the base data annually on which it calculates electricity attributions to reflect the most recent annual consumption in each building. We said that our proposal addresses the identified objectivity concern.

3.150 At the time of the November 2015 CAR Consultation we did not have the information necessary to adjust the base year costs.

11. Measures of electricity consumption

3.151 In the June 2015 CAR Consultation, we identified inconsistencies between measures of electricity consumption used for different equipment.

3.152 In the November 2015 CAR Consultation, we noted that we had already proposed that, where BT can identify actual usage, they should ring-fence the costs and ensure the actual costs are attributed to the relevant services. This applies to electricity costs for LLU and NGA equipment. For these types of equipment theoretical measures of power usage are not required.

3.153 We explained that, for other equipment, BT generally uses the theoretic maximum power consumption as the relative measure of usage. The exception is equipment on CISL and IN platform equipment[283] which use measured consumption. However, we noted that these equipment types account for less than 0.1% of all power consumed.[284]

3.154 We said that the current approach shows reasonable consistency across all equipment types. We noted that the possible exception of PSTN/Switch equipment for which BT was proposing to estimate power consumption from average sample meter readings.[285] The current approach for this equipment is to use theoretic ratings.

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[282] BT, response to the 5th CAR section 135 notice, dated 15 December 2015, question 1
[283] CISL is BT's Common Intelligence Service Layer and IN is BT's Intelligent Network
[284] BT, TSO model – 024 TSO Electricity Best Practice Model P12 FY1314 FINAL, 24 September 2015
[285] BT, ASIG paper RA15-024 provided to Ofcom 25 August 2015

It would appear then that retaining the current measures would seem more consistent.

3.155 We said that we would engage with BT to understand the current approach better and to confirm the appropriateness of the current measures.

3.156 In the November 2015 LLCC Consultation, we did not propose to adjust the base year costs.

Stakeholder responses

3.157 Stakeholders' broadly supported our analysis and the changes that we proposed to existing methodologies.

3.158 In respect of the changes proposed by BT, BT said that it did not agree that its current methodologies are clearly inappropriate. However, it did say that it did consider that the proposals it "presented to Ofcom as set out in the Consultation are an appropriate alternative and we would wish to implement these in the 2015/16 RFS."[286] BT made no response in connection with the three further issues that we identified in November.

3.159 TalkTalk said that further transparency is required about BT's process for attributing electricity costs. TalkTalk noted that "the first stage in BT's approach to attributing electricity costs starts with an allocation between TSO and Openreach. No description is provided of the method or data used for this attribution."[287] TalkTalk said that while it had requested this transparency in its June Consultation response, none had been provided.

3.160 In its response Vodafone said that it agreed "with Ofcom's proposals for improvements in the allocation of electricity costs."[288] Virgin Media also agreed that the proposed changes in attribution rules for Electricity for TSO and Openreach "should be implemented, as data appears to be available that would improve the objective basis of these attributions."[289]

3.161 Virgin Media said that "factors such as used vs unused DSLAM racks should be reflected in power consumption data and up-to-date information on IP cabinets should be reflected." [290] Virgin Media also agreed that "where a direct causal attribution can be made, such as NGA street cabinets' electricity usage, this should be reflected in [an] attribution rule."[291]

Ofcom's response and decision

3.162 In response to TalkTalk's request for a description about the method or data that BT uses to attribute electricity costs between TSO and Openreach, BT has confirmed that:

[286] BT, November 2015 CAR Consultation response, page 16, paragraph 91
[287] TalkTalk, November 2015 CAR Consultation response, page 15 paragraph 4.15
[288] Vodafone, November 2015 CAR Consultation response, page 13, paragraph 5.7
[289] Virgin Media, November 2015 CAR Consultation response, page 3, question 5.3
[290] Virgin Media, November 2015 CAR Consultation response, page 3, question 5.3
[291] Virgin, November 2015 CAR Consultation response, page 3, question 5.3

- BT first calculates the share of space within each building occupied by each Line of Business and categorise each type of space.

- Each type of space is then given a weighting to represent the relative energy use. These weightings are used to derive the relative energy usage by multiplying the area of the space by the weighting.[292]

3.163 As summarised above, stakeholders generally agreed with the proposals in the November 2015 CAR Consultation that related to the attribution of electricity costs. We have adopted these proposals in the calculation of our base year costs as they better reflect causality and objectivity.

3.164 In the November 2015 CAR Consultation we noted that BT had made changes to the way that it attributes electricity costs in its 2014/15 RFS, relating to:

- 1. PSTN Equipment Errors; and

- 2. LLU Energy Costs ring-fencing.

3.165 We explained that it was appropriate for BT to correct these errors, that these changes were already reflected in the 2014/15 RFS and that therefore no adjustment to the base year costs in the November 2015 LLCC Consultation was required. We remain of that view.

3.166 In the November 2015 CAR Consultation we also noted that BT had proposed further changes to the way it attributed electricity costs that were not reflected in the 2014/15 RFS, relating to:

- 3. PSTN Equipment Methodology Change;

- 4. Transmission Equipment;

- 5. 21CN Equipment;

- 6. DSLAM Equipment;

- 7. IP Equipment; and

- 8. Implementation of LLU Energy Costs ring-fencing.

3.167 Informed by the analysis in the November 2015 CAR and stakeholders' views, we consider that BT's proposed changes are appropriate. We have therefore adjusted our base year costs to include the above changes proposed in the November 2015 CAR Consultation and reflected in the base year costs in the November 2015 LLCC Consultation.

3.168 Finally, in the November 2015 CAR Consultation, we identified further issues relating to:

- 9. NGA Equipment;

[292] BT, response to the 9th CAR section 135 notice, dated 4 March 2016, questions 1 and 2

- 10. Electricity Consumption by Building; and
- 11. Measures of Electricity Consumption.

3.169 We note that Vodafone agreed with our November 2015 CAR Consultation proposals. We agree with Virgin Media that up-to-date information about electricity usage such as for NGA street cabinets should be included in attribution rules.

3.170 Informed by the analysis in the November 2015 CAR and stakeholders' views, we have adjusted our base year costs to reflect that the costs of power consumed by NGA street cabinets is directly attributed to NGA in the same way that electricity costs for LLU equipment are separately ring-fenced; and that where BT meters and tracks actual electricity usage for any specific types of equipment these costs have been ring fenced and attributed directly to services using that equipment.

3.171 In respect of electricity consumption by building, in the November 2015 CAR consultation we did not have the information to adjust the base year data.

3.172 Since then we have asked BT to update the information which is used as an input into the methodology used to attribute electricity costs by building to reflect the current year annual consumption in each building.

3.173 We have adjusted the base year costs so the base data reflects the most recent annual consumption in each building. The base year adjustment was calculated using data relating to the year ended 31 March 2015.[293]

3.174 From 2015/16 RFS onwards BT expects to change the data source for the inventory of historic metered power consumption in each building.[294]

3.175 In respect of measures of electricity consumption, where BT has measured the consumption then it uses that measured value. In cases BT does not have this information it uses the manufacturer's theoretic/historic maximum consumption as the basis. It considers this to be the best alternative. Ideally BT would have the measured consumption for all equipment types but in the absence of this information we consider BT is using a suitable alternative. Therefore, we have not further adjusted our base year data. However, we may consider this further as part of the next fixed access market review.

3.176 We have therefore decided to make a base year adjustment to estimate the impact of i) implementing BTs proposed changes for updating the estimated electricity consumption for different equipment types, ii) directly allocating the metered actual electricity usage for NGA cabinets to NGA products and iii) updating the base data on which BT calculates electricity attributions to reflect the most recent annual consumption in each building, using the 2014/15 BT TSO data on electricity consumption by building.

Calculation of the adjustment

3.177 Table 3.4 sets out our adjustment to base year costs in respect of electricity costs.

[293] BT, response to 8th CAR s135, dated 10 March 2016 Q2bii
[294] BT, response to 5th CAR s135, dated 15 January 2016 Q1 b

Table 3.4 Estimated impact of base year adjustments for Electricity costs, 2014/15, £m

	Operating costs	MCE	FAC
TI	(0.6)	3.4	(0.2)
Ethernet	(0.5)	(0.5)	(0.5)

Section 4

Duct

Introduction

4.1 In this section we consider adjustments to the base year data relating to duct costs, which are attributed using the Duct Valuation Methodology (PDTDUCT). Duct costs form a significant part (approximately 37% of total MCE) of the asset base for business connectivity markets in 2014/15.295

4.2 In 2014/15 BT attributed [✂]£250m to £300m of depreciation and [✂]£5.0bn to £5.5bn of MCE associated with duct to access, inner core and backhaul duct.[296]

4.3 In the November 2015 CAR Consultation we said we had causality and objectivity concerns because the attribution of core duct between backhaul and inner core only used information on live circuit volumes and did not use available information about live circuit lengths.

4.4 In the November 2015 LLCC Consultation we therefore proposed to make a base year adjustment to reflect the impact of attributing core duct costs between backhaul and inner core using both live circuit lengths and live circuit volumes.

4.5 Following responses from stakeholders we have decided to also make an adjustment to the attribution of duct costs between access and core to better reflect the types of circuit that use duct. We have therefore decided to make a base year adjustment to estimate the impact of i) allocating duct costs between core and access using the estimated GRC value of core and access duct and ii) allocating core duct between inner core and backhaul using live circuit lengths and live circuit volumes.

4.6 For TI, BT has estimated that the impact of this base year adjustment is to increase operating costs by £0.2m and reduce MCE by £4.6m. For Ethernet, BT has estimated that the impact of this base year adjustment is to increase operating costs by £2.1m and increase MCE by £38.5m.[297]

Background

Attribution methodology

4.7 Duct is the pipe within which cables and other equipment are installed. Duct is run underground and comes in a variety of sizes. In its cost attribution system, BT attributes costs associated with duct (depreciation, pay, street work costs and MCE) to three parts of the network: access, core and backhaul using the Duct Valuation

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[295] Derived from BT's response to question 2b)ii) of the 8th CAR section 135 notice, dated 10 March 2016

[296] BT, 2014/15 RFS Additional financial Information schedule A12 – control files, dated 17 August 2015

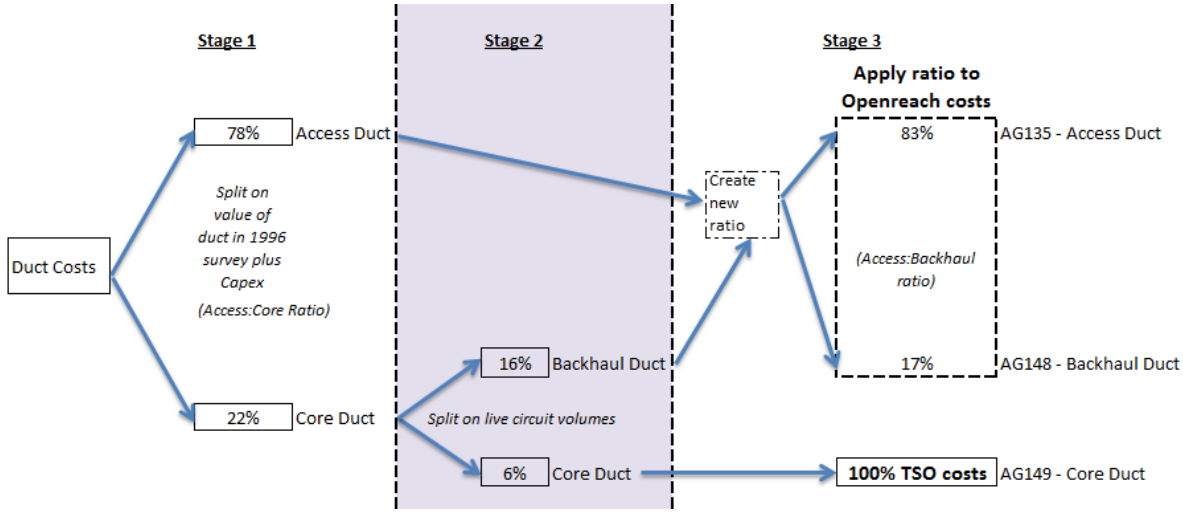
[297] BT response dated 9 February 2016 to question 1 of the 8th CAR section 135 notice.

Methodology.[298] The proportion of duct costs that is allocated to the leased lines markets is determined by the Duct Valuation Methodology.

4.8 BT told us that Openreach is responsible for expenditure on and maintenance of all duct in each part of the network. BT said that the nature of duct is such that it cannot be physically separated so it is pragmatic for Openreach to carry out all the work. However, BT said that there is an accounting transfer of the assets and depreciation relating to duct in the inner core network to BT TSO. As a result assets and depreciation relating to the access and backhaul network remain in Openreach.[299] Therefore, BT needs to attribute the duct costs which remain in Openreach between access and backhaul.

4.9 The Duct Valuation Methodology attributes these non-TSO duct costs in three stages, as illustrated in Figure 4.1.[300]

Figure 4.1: Three stages of the Duct valuation methodology (2014/15 percentages)



4.10 In stage one, BT estimates the proportion of duct costs that relate to access and core on the basis of the GRC of access and core duct.[301] The split in 2014/15 was 78% access, 22% core.[302]

4.11 In stage two, BT estimates the proportion of core duct that relates to backhaul and inner core (or simply 'core') on the basis of the number of live circuit volumes.[303] The split of core duct in 2014/15 using live circuit volumes was 76% backhaul and 24% core. As a proportion of all duct this gives 16% backhaul and 6% core (which together sum to the 22% of duct that relates to core from the first stage).

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[298] BT refers to this as base methodology PDTDUCT. BT, Accounting Methodology Document 2015, page 91.
[299] BT response to the 6th CAR section 135 notice, dated 2 February 2016, question 2b.
[300] Derived from BT, Model 018_OR_Duct, 25 August 2015.
[301] Page 91 of BT's 2014/15 AMD explains that this split is based on the outputs of a duct study carried out by BT in 1996, augmented by capital expenditure incurred since then which is recorded on a class of work basis.
[302] BT, Model 018_OR_Duct, provided 25 August 2015
[303] Specifically the volumes of trunk and distribution circuits, where trunk circuits map onto 'core' and distribution circuits map onto 'backhaul'.

4.12 In stage three, duct costs assigned to TSO under the accounting transfer are attributed directly to core (activity group AG149). BT currently fixes this percentage at 5.6% of total duct.[304] This means that the remaining non-TSO duct costs are split between access and backhaul by combining the ratios from the first and second stages. The resulting split in 2014/15 was 83% access and 17% backhaul.[305] Access duct is attributed to activity group AG135 and backhaul duct is attributed to activity group AG148.

4.13 In this section we are concerned with the process of attributing duct costs to access, backhaul and core at the second stage.

Core and backhaul duct

4.14 A distinction exists between access, backhaul and core because the Undertakings set out that Openreach is responsible for the assets in the Physical Layer of the Backhaul Network and the Access Network. The Undertakings define the Backhaul Network as one that runs from a BT Local Access Node to i) another BT Local Access Node, ii) a BT Core Node or iii) another Communication Provider's point of handover (subject to distance limitations). Openreach backhaul products and some Openreach access products use connections that are classified as Backhaul Network Physical Layer.[306]

4.15 While the Physical Layer of the Backhaul Network primarily consists of the duct and fibre providing the connectivity, the physical duct used can rarely be identified as either core or backhaul (or even access in many cases).[307] For example, for much of the length of a circuit, one cable (in a single duct) could contain one fibre that provides backhaul connectivity and another that provides core connectivity.

4.16 Given this shared nature, BT needs a way of attributing the costs associated with duct to the different types of network (such as access, core and backhaul) and eventually those products that use it.

What we said in November

4.17 In the November 2015 CAR Consultation we identified causality as a concern in relation to the attribution of core duct costs between backhaul and inner core.

4.18 We said that the cost of building duct is associated with the size of the duct (i.e. its cross-sectional area) and the length of the duct. However, when estimating the amount of core duct that relates to inner core and backhaul BT only takes account of the size of the duct (via the number of live circuits it carries) and does not take account of the length of the circuits. BT told us that it would be practicable to take

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[304] BT response to the 6th CAR section 135 notice, dated 2 February 2016, question 4a. BT confirmed that this percentage has been unchanged since at least 2010/11.
[305] The access ratio of 78% from the first stage is combined with the backhaul ratio of 16% from the second stage. Combining these gives an access ratio of 83% (78%/(78%+16%)) and a backhaul ratio of 17% (16%/(78%+16%)).
[306] The SMP regulation imposed in the 2016 BCMR review lists BT's core nodes and is set out in Annex 35. Figure 7.2 in the November 2015 CAR Consultation illustrated the core and backhaul network.
[307] BT, response to 4th s135, dated 25 February 2016, question 1.49

account of circuit length when estimating the amount of core duct that relates to inner core and backhaul since this information is included in its systems.[308]

4.19 Since the length of circuits could vary between inner core and backhaul we proposed that BT must take account of circuit length as well as circuit volumes when estimating the amount of core duct that relates to inner core and backhaul.

4.20 We said in the November LLCC 2015 Consultation that the further review and proposals made in the November 2015 CAR Consultation in relation to duct costs were of relevance to the charge controls we proposed to set. We therefore proposed to make a base year adjustment to reflect the attribution of core duct costs between inner core and backhaul using both circuit length and circuit volumes.

Stakeholder responses

4.21 BT said that Ofcom's proposal to "use circuit lengths instead of circuit counts to attribute [core duct] between backhaul duct and inner core duct would be an appropriate alternative to the current methodology".[309] BT said that Ofcom's alternative methodology would "make the attribution of duct consistent with the way we [BT] attribute fibre costs between these two networks".[310]

4.22 Ofcom's proposal increased the proportion of core duct that is backhaul compared to inner core. However, BT noted that the effect of Ofcom's proposal was to move costs from access to backhaul when the rationale is to move costs from inner core to backhaul.[311] The reason for this is that for a number of years BT has 'fixed' the amount of duct that is categorised as inner core at 5.6%. In its response BT said that "in our books we split the physical infrastructure between backhaul, which is carried on the books of Openreach, and [inner] core, carried on the books of BT TSO. This is achieved by way of an accounting adjustment in our general ledger. The accounting adjustment was based on historical information from the RFS".[312]

4.23 BT suggested resolving this by treating Openreach and BT TSO duct as a common cost pool such that the amount of duct that is access is derived from the duct survey (i.e. on the basis of the estimated GRC between access and core as per stage 1 of Figure 4.1) and then core duct is split between inner core and backhaul using Ofcom's proposed methodology.[313]

4.24 Vodafone appeared to agree that length was a key driver of costs with attributing duct.[314] However, Vodafone was concerned that attributing duct costs between access and core duct on the basis of GRC risks over-allocating costs to older duct.[315]

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[308] BT says that information on circuit lengths is included in the Core Transmission Circuit costing System (CTCS), BT, response to 4th s135, question 1.47, dated 25 February 2016 . BT's 2013/14 DAM describes CTCS on pages 265 and 266.
[309] BT, November 2015 CAR Consultation response, page 21, paragraph 116
[310] BT, November 2015 CAR Consultation response, page 21, paragraph 116
[311] BT, November 2015 CAR Consultation response, page 21, paragraph 120
[312] BT, November 2015 CAR Consultation response, page 21, paragraph 119
[313] BT, November 2015 CAR Consultation response, page 21, paragraph 121
[314] Vodafone, November 2015 CAR Consultation response, page 15, paragraph 5.23
[315] Vodafone, November 2015 CAR Consultation response, page 15, paragraph 5.21

4.25 The Passive Access Group (PAG) supported Ofcom's proposal to take into account circuit length as well as circuit volumes but it had concerns with the "inherent ambiguity of the underlying circuit volume measurement". PAG recommended that Ofcom should:

- Find out exactly what BT counts as a circuit in its volume measures.
- Ensure that a consistent approach is adopted across access, backhaul and core.
- Consider alternatives to the attribution of cost by circuit volumes. These should include measurements of the volume of passive infrastructure since this avoids the inherent difficulties associated with the measurement of active circuits. For example, the cost attribution could be based on the length of duct routes used for backhaul and core, taking into account the number of duct bores and the depth of the duct since these factors affect the cost of building new duct."[316]

4.26 Finally, we note that BT agreed to further explain its duct attribution methodology in its 2015/16 Accounting Methodology Documents in response to Ofcom's view that it should explain which parts of BT are responsible for i) different products in different parts of the network and ii) expenditure on duct and fibre in different parts of the network and to which parts of BT costs of different types of duct should be attributed.[317]

Ofcom's response and decision

Base year adjustment

4.27 Stakeholders generally agreed with our proposal to take into account circuit length as well as circuit volumes when attributing core duct costs. We consider that this adjustment would better reflect causality since it reflects the fact that the cost of duct is likely to be associated with the size and length of the duct.

4.28 We consider that BT's suggested refinement would also better reflect causality since the amount of duct cost attributed to inner core (TSO) would reflect both the outcome of the duct survey (which attributes duct between access and core on the basis of estimated GRC) and our adjustment to attribute core costs between inner core and backhaul using both circuit length and circuit volumes. Fixing the amount of duct that is core at 5.6% based on "historic information from the RFS", as BT currently does, does not appear to take into account the fact that duct can be used by different combinations of core and backhaul circuits over time.

4.29 We have therefore decided to make a base year adjustment to estimate the impact of i) allocating duct costs between core and access using the estimated GRC value of core and access duct (i.e. using the outcomes of BT's duct survey as shown in stage one of Figure 4.1) and ii) allocating core duct between inner core and backhaul using live circuit lengths and circuit volumes.

4.30 Table 4.1 illustrates the effect of the base year adjustment on the proportion of duct costs attributed to access, inner core and backhaul.

[316] PAG, November 2015 CAR Consultation response, page 5, paragraph 2.9
[317] BT, November 2015 CAR Consultation response, page 21, paragraph 124

Table 4.1 Illustration of the effect of base year adjustment on the proportion of duct costs attributed to access, inner core and backhaul

	Current methodology	Effect of base year adjustment	
		Revise core duct %	Include circuit length in core/backhaul split
Access	78.2%	78.4%	78.4%
Backhaul	16.2%	16.3%	17.5%
Inner core	5.6%	5.3%	4.1%
Total	100%	100%	100%

Source: Ofcom based on BT response to question 2bii of 8th CAR section 135 notice and models provided on 10 March 2016.

4.31 The effect of the base year adjustment can be explained in two steps:

- Removing the fixed inner core duct percentage means that the proportion of duct relating to access is taken straight from the duct survey and the amount of backhaul and inner core duct is derived directly from the volume of live circuits. This has the effect of slightly increasing the proportion of duct that is categorised as access and backhaul duct and reduces the proportion categorised as core duct.

- Estimating the proportion of core duct that relates to backhaul and inner core using both the volume and length of live circuits increases the proportion that relates to backhaul and reduces the proportion that relates to inner core. The proportion of duct categorised as access remains unchanged.

Use of GRC to attribute duct between access and core

4.32 In principle we agree with Vodafone that the use of GRC to attribute duct depreciation and MCE between access and core could mean that older duct attracts too much cost.[318] However, we believe any impact would be unlikely to be significant. In addition, to assess this we would require information about the age profile and usage of particular sections of duct (e.g. whether older duct was more or less likely to be used to provide access services), and this information is not available. However, we recognise that more accurate information may be available to BT in future which could improve the estimate of the amount of duct that is associated with the access and core parts of the network. Therefore, we may consider this issue again as part of future charge controls should additional or more accurate information become available.

Circuit definitions

4.33 In response to PAG, BT told us that in estimating the amount of core duct that relates to inner core and backhaul it defines a transmission circuit as "a circuit or part of circuit connecting equipment, where both ends are located within a BT exchange. This is opposed to an access circuit which is a circuit or part of a circuit which

[318] For example, fully depreciated duct (which is still associated with a GRC value) could receive a share of depreciation based on the estimated access-core split using GRC.

connects equipment, where one end is located in customers premises".[319] BT also said that the circuit types used "are equivalent to components in the Regulatory Financial Statements (RFS) apart from the circuits used for 21CN which are shown at a plant group level."[320]

4.34 We note that circuits are not used to estimate the proportion of duct that relates to access. As shown in Figure 4.1, BT estimates this proportion by reference to the estimated GRC of access and core duct.

4.35 We have noted PAG's recommendation that Ofcom should consider alternatives to the attribution of cost by circuit volumes, including measurements of the volume of passive infrastructure. As part of this business connectivity market review we have imposed a requirement on BT to offer Dark Fibre access[321] and to report total costs and revenues for all of BT's dark Fibre CISBO non-CLA services."[322] While in future it may be necessary and practicable to include measurements of the volume of passive infrastructure when attributing duct costs, we do not consider that this is currently necessary. We would note that to date there has been limited uptake of passive infrastructure including Passive Infrastructure Access (PIA).[323]

Calculation of the adjustment

4.36 Table 4.2 shows BT's estimate of the impact of this base year adjustment. For TI, BT has estimated that the impact of this base year adjustment is to increase operating costs by £0.2m and reduce MCE by £4.6m. For Ethernet, BT has estimated that the impact of this base year adjustment is to increase operating costs by £2.1m and increase MCE by £38.5m.

Table 4.2 Estimate of market impact of duct valuation base year adjustment, £m

	Operating costs	MCE	FAC
TI	0.2	(4.6)	(0.3)
Ethernet	2.1	38.5	5.8

Source: BT response dated 9 February 2016 to question 1 of the 8th CAR section 135 notice

[319] BT response to the 6th CAR section 135 notice, dated 19 January 2016, question 3.
[320] Response to 6th CAR section 135 notice, dated 19 January 2016, question 3. Note that a list of components is set out in Section 14 of the Accounting Methodology Documents and provides the definitions of each of the circuits.
[321] Ofcom, BCMR Statement, Section 9
[322] Ofcom, LLCC Statement, Section 17
[323] In the 2014 Fixed Access Market Review Statement, we said that "Passive Infrastructure Access (PIA) has so far seen very low levels of take-up. We note that a key use of PIA that we had envisaged – in areas subject to state funding – has not occurred, in part because no non-BT CP has won any of the main BDUK programme contract. Ofcom, http://stakeholders.ofcom.org.uk/binaries/telecoms/ga/fixed-access-market-reviews-2014/statement-june-2014/volume1.pdf

Section 5

Software

Introduction

5.1 In this section we consider adjustments to the base year data relating to Openreach and TSO software costs which are attributed using the Software depreciation methodology (SOFTDEP). Openreach and TSO software forms 6% of operating costs for business connectivity markets in 2014/15.[324]

5.2 All software development in BT is carried out by TSO. In 2014/15 TSO recorded [✂]£300m to £350m of software depreciation costs and [✂]£200m to £250m of software MCE. Approximately 31% of this software related to TSO itself and 27% related to Openreach.[325]

5.3 In the November 2015 CAR Consultation we said we had causality and objectivity concerns about the attribution of Openreach software costs because:

- BT does not allocate Openreach software costs directly to product or asset groups where the information it holds demonstrates that such costs are associated with those product or asset groups.
- BT does not attribute shared Openreach software costs to all the products that the relevant software supports.

5.4 We also considered that the attribution of TSO software was not causal or objective because BT does not allocate TSO software directly to product groups, asset groups or lines of business where the information it holds demonstrates that such costs are associated with those product groups, asset groups or lines of business.

5.5 In the November 2015 LLCC Consultation we therefore proposed to make a base year adjustment to reflect the impact of i) attributing Openreach and TSO software directly to product or asset groups where the information demonstrates that such costs are associated with those product or asset groups and ii) attributing Openreach shared software to all the products that the relevant software supports.

5.6 Following stakeholder responses to the November 2015 CAR Consultation we have made one amendment to our base year adjustment which is to attribute Openreach shared software using Openreach PAC (consistent with Section 2 of this annex) because the information currently available to BT does not enable us or BT to identify which products the shared software supports.

5.7 For TI, BT has estimated that the impact of this base year adjustment is to decrease operating costs by £1.6m and reduce MCE by £1.4m MCE. For

[324] Derived from BT, response to 8th CAR s135, dated 10 March 2016, models from question 2bii
[325] BT, 2014/15 RFS Additional financial Information schedule A12 – control files, dated 17 August 2015

Ethernet, BT has estimated that the impact is to decrease operating costs by £7.1m and reduce MCE by £15.7m.[326]

Background

5.8 In the November 2015 CAR Consultation we explained that all software development is carried out by BT TSO and TSO recharges other lines of business for work undertaken on their behalf. In 2014/15 TSO recorded [✂]£300m to £350m of software depreciation costs and [✂]£200m to £250m of software MCE.[327] These costs need to be attributed to the lines of business to which they relate.

5.9 In 2014/15, approximately 31% of software costs related to TSO itself (for example to support the core assets managed from TSO), while 27% related to Openreach, 18% to BT Wholesale, 4% to BT Group and the remaining 19% related to BT Retail and Global Services.

5.10 Software costs relating to TSO are attributed to the activity group AG102 (TSO Operational Costs) along with other TSO operational costs. All costs from this activity group are attributed on the basis of the net book value of TSO fixed assets.[328]

5.11 Software relating to Openreach is broadly categorised as being either i) specific to particular product or asset groups, ii) shared across products or iii) general software. Using the SOFTDEP methodology[329] these Openreach software types are attributed in the following ways:

- Software specific to particular product or asset groups is directly allocated. In 2014/15, approximately 29% of Openreach software cost was directly allocated to product groups or asset types. For example software associated with access duct is directly allocated to activity group AG135 (Access Duct) and software associated with NGA FTTC is directly allocated to the plant group PG197A (FTTC Service Delivery & Development).

- Shared software is apportioned across relevant products. In 2014/15, approximately 45% of Openreach software was identified as supporting a number of different Openreach products. These 'shared software' costs are apportioned to products on the basis of the software depreciation costs of the relevant products.

- General software is attributed across all of Openreach. In 2014/15, approximately 26% of Openreach software cost related to Openreach support functions or could not be associated with specific product or asset groups. These general Openreach software costs are attributed to AG410 (Openreach General Software). Costs from this activity group are currently

[326] BT, response to 8th CAR s135, question 1, dated 9 February 2016
[327] We have estimated these amounts using the classes of work COMPG (externally purchased software) and COMPS (internally developed software).
[328] BT, Accounting Methodology Documents 2015, page 125
[329] BT, Accounting Methodology Documents 2015, page 122. The SOFTDEP methodology is described on pages 363 – 365 of the Cartesian report.

attributed across Openreach using the Pay and ROA methodology for which we have made base year adjustments in Section 2 of this annex.

What we said in November

5.12 In the November 2015 CAR Consultation we considered the attribution of Openreach and TSO software costs.

Openreach software

5.13 In the November 2015 CAR Consultation we explained that although we considered that the categorisation of Openreach software into i) product specific, ii) shared, and ii) general software was reasonable, we did not consider that BT had correctly categorised software into these three categories. We said that for the attribution of Openreach shared software costs BT does not:

- allocate software costs directly to product or asset groups where the information it holds demonstrates that such costs are associated with those product or asset groups.
- attribute shared software costs to all the products that the relevant software supports.

5.14 For these reasons we considered that the current attribution of Openreach software costs was not causal or objective. We proposed that:

- BT should allocate Openreach software costs directly to product or asset groups where the information it holds demonstrates that such costs are associated with those product or asset groups.
- BT should attribute Openreach software that is shared across a number of products to all the products that the relevant software supports.

5.15 Table 5.1 summarises our November 2015 CAR Consultation proposals for Openreach software.

Table 5.1: Proposals for Openreach software in the November 2015 CAR Consultation

Software type	2013/14 Depreciation £m	% of Openreach software 2013/14	Current treatment	Proposed treatment
LLU, WLR, Ethernet, ISDN2	[✂] £10m to £50m	30%	Shared across WLR, LLU and Ethernet product groups	Directly attribute to relevant product groups
Shared software	[✂] £10m to £50m	22%	Shared across WLR, LLU and Ethernet product groups	Shared across WLR, LLU and Ethernet, ISDN2 and NGA product groups

Note: Remaining 48% of Openreach software was categorised in 2013/14 as directly allocated or general software.

5.16 In the November 2015 LLCC Consultation we proposed a base year adjustment to reflect the impact of attributing Openreach software costs in line with our proposal in the November 2015 CAR Consultation.

TSO software

5.17 In the November 2015 CAR Consultation we explained that all TSO software costs are currently included in AG102 (TSO Operational costs) and attributed across TSO on the basis of the net book value of TSO assets. We said that this approach differs from Openreach where software is categorised into software that is i) specific to particular product or asset groups, ii) shared across particular products or assets and iii) general software.

5.18 We said that we had asked BT to categorise TSO software costs in the same way as Openreach software. In response BT suggested that TSO software could be attributed in the manner set out in Table 5.2.

Table 5.2: BT's suggested attribution of TSO software, 2014/15[330]

Software category	Depreciation £m	Depreciation %	Suggested treatment
Product/asset specific	[✂] £10m to £50m	43%	Direct to relevant products/assets
Operational/TSO infrastructure	[✂] £10m to £50m	35%	AG102 (TSO operational costs)
Line of business specific:	[✂] £10m to £50m	22%	
- TSO support functions	[✂] £10m to £50m	*13%*	*AG103 (TSO support functions)*
- Group	[✂] £0m to £10m	*5%*	*AG112 (Corporate costs)*
- BT Wholesale	[✂] £0m to £10m	*1%*	*AG409 (BT Wholesale general software)*
- Wholesale Residual	[✂] £0m to £10m	*1%*	*Residual*
- BT Business/BT Consumer	[✂] £0m to £10m	*1%*	*Residual*
- Global Services	[✂] £0m to £10m	*1%*	*Residual*
Total	[✂] £50m to £100m	100%	

Source: Ofcom based on data from BT, response to 4th CAR section 135 notice, dated 9 March 2016 2016 question 1.56.

5.19 We said that BT does not allocate TSO software directly to products, assets or lines of business where it has the information to do so. For this reason we did not consider that the current attribution of TSO software costs was causal or objective. In the November 2015 CAR Consultation we proposed that BT should allocate TSO software directly to products, assets or lines of business where the information it holds demonstrates that such costs are associated with those products, assets or lines of business. We considered that attributing TSO software costs on the basis set out in Table 5.2 would be consistent with this proposal.

[330] In the November 2015 CAR Consultation this table was said to relate to 2013/14 FY, however BT told us that the figures provided actually relate to 2014/15. BT, response to 7th CAR s135, dated 23 February 2016, Q9a follow up

5.20 In the November 2015 LLCC Consultation we therefore made a base year adjustment to reflect the impact of attributing TSO software costs on the basis set out in Table 5.2.

Stakeholder responses

5.21 Vodafone said that it welcomed Ofcom's proposed changes to the allocation of Openreach and TSO software costs.[331]

5.22 BT said that its existing methodology "provided a practical and proportionate methodology for software allocation in both Openreach and BT TSO".[332]

5.23 BT said that Ofcom's proposal to directly allocate some of the Openreach software included in the 'shared software' category had no impact since BT already allocated "costs associated with products to specific components that reflect those products via a common plant group, 'product Specific Software'".[333]

5.24 However, BT agreed that Ofcom had identified some instances where BT had omitted certain products when attributing Openreach 'shared software' (for example NGA and ISDN products were not receiving an appropriate attribution of 'shared software').[334] BT considered that this reflects errors in the application of its existing methodology rather than an issue with the methodology itself.

Ofcom's response and decision

Openreach software

5.25 While we consider that the categories BT uses to attribute software costs are reasonable (i.e. splitting software into product specific software, shared software and general software) we are concerned that:

- BT does not allocate software costs directly to product or asset groups where the information it holds demonstrates that such costs are associated with those product groups; and
- BT does not attribute shared software costs to all the products that the relevant software supports.

5.26 Where BT attributes costs on a basis that is not or insufficiently causal or objective, we consider it is necessary to make an adjustment to ensure the financial information which we use for the charge control is reflective of the relevant level of costs. In this case, we accept that moving Openreach software that is directly allocated via the 'shared software' category to the 'product specific' category has no effect on base year costs for the LLCC and as such it is not necessary to make a base year adjustment.

[331] Vodafone, November 2015 CAR Consultation response, page 15, paragraph 5.18
[332] BT, November 2015 CAR Consultation response, page Paragraph 128
[333] BT, November 2015 CAR Consultation response, page Paragraph 129
[334] BT, November 2015 CAR Consultation response, page Paragraphs 131 - 133

5.27 In relation to the remaining Openreach 'shared software' we proposed in November that this should be attributed across all products that the relevant software supports. We have since asked BT whether it was able to determine which specific Openreach products or groups of Openreach products use this shared software.

5.28 BT said that its fixed asset register only allowed it to determine that the shared software related to the three categories shown in Table 5.3.

Table 5.3: Openreach shared software, 2014/15

Software category	Depreciation £m	Depreciation %
Telecoms Strategic review systems	[✂] £0m to £10m	44%
Fixed release costs	[✂] £0m to £10m	31%
Other	[✂] £0m to £10m	25%
Total	[✂] £10m to £50m	100%

Source: BT response dated 2 February 2016 to question 8 of the 6th CAR section 135 notice

5.29 BT told us that the fixed release software costs are not specific to any products and they intend to categorise these costs as general Openreach software in future.[335]

5.30 BT said the telecoms strategic review (TSR) software relates to many projects and development across different Openreach systems. As such, for TSR and other shared software, BT said the information held on its fixed asset register did not provide enough detail to determine which Openreach products used the software and the relative usage of that software by each product.[336]

5.31 While we consider that from a causality perspective Openreach shared software should be attributed to those products that the software supports, the information currently available to BT does not enable us or BT to identify which products the shared software supports.[337] We therefore consider that, given current information, the Openreach software costs currently categorised as 'shared software' would be more appropriately categorised as 'general software'. In relation to AG410 (which includes 'general software'), we decided in Section 2 of this annex that for the purpose of establishing base year costs for the LLCC, such costs should be attributed using Openreach PAC.

5.32 We have therefore decided to make a base year adjustment to reflect the impact attributing software that is currently categorised as 'shared software' using Openreach PAC (consistent with Section 2 of this annex).

TSO software

5.33 No stakeholders commented on our November proposals relating to TSO software. We consider that the current attribution of TSO Software costs is not or not sufficiently causal or objective because BT does not allocate software directly to

[335] BT, Response to 6th section 135 notice, dated 2 February 2016, question8 c
[336] BT response dated 2 February 2016 to question 8c of the 6th CAR section 135 notice.
[337] In its response dated 2 February 2016 to question 8d of the 6th CAR section 135 notice BT told us that it was assessing the possibility of linking its fixed asset register entries to more detailed information relating to the development projects to which they relate. Once completed, this information may allow it to identify which Openreach products use shared software.

products, assets or lines of business where it has the information to do so. Therefore, we need to make an adjustment to ensure the financial information which we use for the charge control is reflective of the relevant level of costs.

5.34 Table 5.2 indicates that TSO software can be attributed to i) specific products or asset, ii) operational software supporting core network infrastructure in TSO and iii) specific lines of business or TSO support functions.

5.35 We consider that attributing TSO software on the basis set out in Table 5.2 would be more cost causal since the TSO software would be more accurately attributed to the products, assets or functions that use it.

5.36 We have therefore decided to make a base year adjustment to reflect the impact of attributing TSO software costs to products, assets or lines of business on the basis set out in Table 5.2.

Calculation of the adjustment

5.37 Table 5.4 shows BT's estimate of the base year adjustment for Openreach and TSO software. For TI, the total impact is to reduce operating costs by £1.6m and MCE by £1.4m. For Ethernet, the total impact is to reduce operating costs by £7.1m and MCE by £15.7m.

Table 5.4: Base year adjustment for Openreach and TSO software, £m

	Operating costs	MCE	FAC
TI			
Openreach software	0.4	1.3	0.5
TSO software	(2.0)	(2.7)	(2.3)
Total TI adjustment	(1.6)	(1.4)	(1.8)
Ethernet			
Openreach software	(3.1)	(10.5)	(4.2)
TSO software	(3.9)	(5.2)	(4.5)
Total Ethernet adjustment	(7.1)	(15.7)	(8.6)

Source: BT response dated 9 February 2016 to question 1 of the 8th CAR section 135 notice

Section 6

Fibre

Introduction

6.1 In this section we consider adjustments to the base year data relating to fibre costs, which are attributed using the Fibre gross replacement cost (GRC) methodology (base methodologies PDTLFSC and PDTLFDC). Fibre costs form a significant part of the asset base (38% of total MCE) for business connectivity markets in 2014/15.[338]

6.2 BT uses the Fibre GRC Methodology to attribute access (spine and distribution) fibre depreciation, maintenance and MCE costs between Next Generation Access (NGA) and Non NGA. The proportion of each of the access fibre depreciation, maintenance and MCE that is allocated to the leased lines markets is determined by the Fibre GRC Methodology. The Fibre GRC Methodology attributed [✂]£100m to £150m of operational costs and [✂]£1.0bn to £1.5bn of MCE in the 2014/15 Regulatory Financial Statements.[339]

6.3 In the November 2015 CAR Consultation we said we were concerned about the use of the Fibre GRC Methodology to attribute distribution fibre and spine fibre costs between NGA and non-NGA. We proposed that i) distribution fibre costs should be attributed between NGA and non-NGA in a way that took account of the difference in asset lives between NGA and non-NGA distribution fibre assets and ii) spine fibre costs should be attributed between NGA and non-NGA using the ratio of distribution fibre NGA volumes to non-NGA volumes.

6.4 We said in the November 2015 LLCC Consultation that the review and proposals in the November 2015 CAR Consultation in relation to the Fibre GRC Methodology were relevant to the charge controls we proposed to set. We therefore proposed to make a base year adjustment to reflect the impact of the proposals in the November 2015 CAR Consultation.

6.5 Following stakeholder responses we continue to have concerns about the use of the Fibre GRC Methodology to attribute distribution fibre and spine fibre costs between NGA and non-NGA. We have therefore decided to make a base year adjustment to reflect the impact of attributing i) distribution fibre costs between NGA and non-NGA in way that takes account of the difference in asset lives between NGA and non-NGA distribution fibre assets and ii) spine fibre costs between NGA and non-NGA using the ratio of distribution fibre NGA volumes to non-NGA volumes.

6.6 BT has estimated that the impact of the base year adjustment on TI is to reduce operating costs by £0.2m and MCE by £4.3m. For Ethernet, the impact is to reduce operating costs by £3.3 and MCE by £56.8m.

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[338] Derived from BT, response to 8th CAR s135, dated 10 March 2016, question 2bii
[339] BT, 2014/15 RFS Additional financial Information schedule A12 – control files, dated 17 August 2015

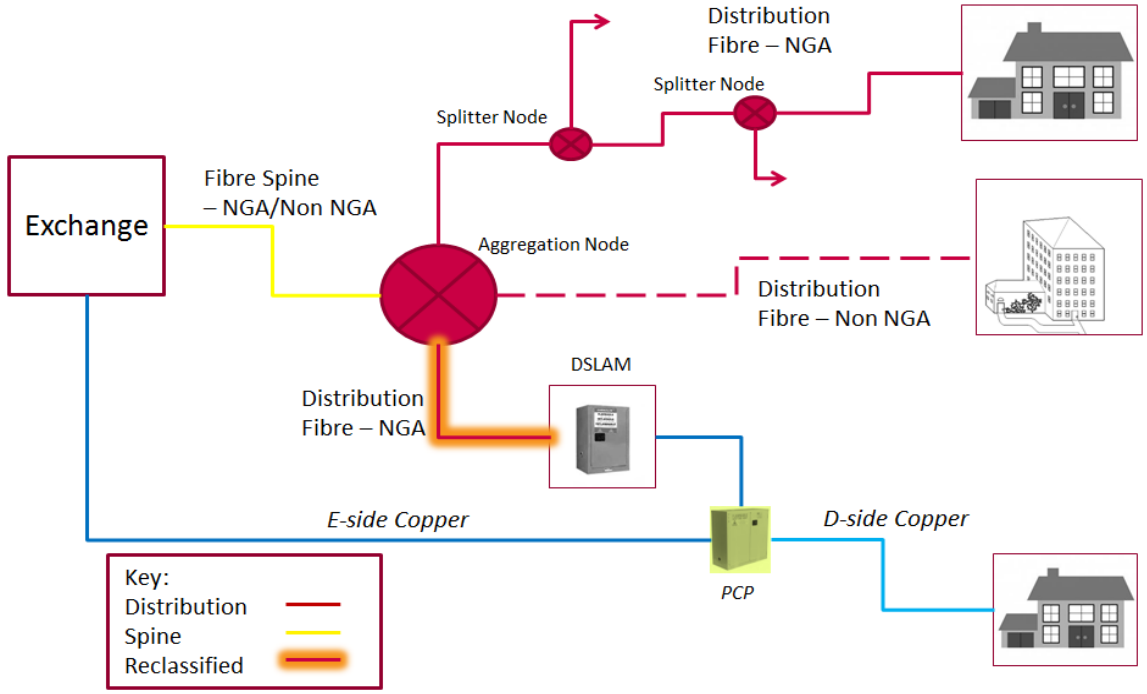
Background

6.7 Fibre cables on the customer side of the exchange are referred to as access fibre and these fibre cables are split into two categories; spine fibre and distribution fibre.[340] Spine and distribution fibre are illustrated in Figure 6.1.

6.8 Spine fibre cables run between the exchange and the fibre aggregation node. The fibre aggregation node is usually located in a street level manhole and allows the signal to be split to run to FTTP, FTTC or as a private circuit for a business.

6.9 Distribution fibre cables run from the fibre aggregation node towards a residential or business customer's premises (via a DSLAM in the case of FTTC fibres, which is separate from the aggregation node).

Figure 6.1: Access fibre and copper networks.



6.10 Spine and distribution fibre are further split between NGA[341] fibre and non-NGA fibre. NGA fibre is deployed for Generic Ethernet Access (GEA) and generally refers to broadband products that provide a maximum download speed that is greater than 24 Mbit/s.[342] BT told us that while there is a one to one relationship between individual fibres in spine and distribution cables, spine fibre cables typically carry between 6 and 24 times more fibres than distribution fibre cables.[343]

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[340] We understand that fibre cables can carry between 2 and 256 individual fibres bound together.
[341] NGA is also known as superfast broadband.
[342] Ofcom, 'Review of the wholesale local access market' October 2010, Paragraph 2.8, page 10: http://stakeholders.ofcom.org.uk/binaries/consultations/wla/statement/WLA_statement.pdf
[343] We note that in 2013/14 BT reclassified some fibre cables used to provide FTTC from NGA spine fibre to NGA distribution fibre leading to a large reduction in spine fibre cable volumes and an increase in distribution fibre cable volumes. While this appeared to be a large reduction in spine fibre

6.11 BT currently attributes spine and distribution fibre costs associated with historical cost accounting (HCA) depreciation, maintenance and HCA balance sheet values between NGA and non-NGA using the Fibre GRC Methodology, as follows:

- Distribution fibre costs are split between NGA and non-NGA using the ratio of NGA fibre GRC and non-NGA fibre GRC. BT said that it is able to separately identify the NGA and non-NGA GRC for distribution fibre.[344]
- Spine fibre costs are split between NGA and non-NGA using the ratio of distribution fibre NGA/non NGA GRC. BT said that it is not able to separately identify NGA and non-NGA spine fibre cables, so it uses the GRC ratio applied to distribution fibre.[345]

6.12 Table 6.1 shows that the amount of depreciation, MCE and maintenance costs in 2014/15 associated with spine and distribution fibre that are attributed between NGA and non-NGA using the Fibre GRC Methodology. The table shows that the main application of the Fibre GRC Methodology is to access fibre depreciation and MCE, with only a small amount of access fibre maintenance being attributed.

Table 6.1: Access fibre costs, 2014/15, £m

	Depreciation	MCE	Maintenance
Spine fibre	[✂] £10m to £50m	[✂] £250m to £300m	[✂] £0m - £10m
Distribution fibre	[✂] £50m to £100m	[✂] £500m to £1.0bn	

Source: Ofcom using data provided by BT, 2014/15 RFS Additional financial Information schedule A12 – control files, dated 17 August 2015

What we said in November

6.13 In the November 2015 CAR Consultation we considered the attribution of distribution fibre, spine fibre and maintenance costs between NGA and non-NGA using the Fibre GRC Methodology.

Distribution fibre

6.14 BT assumes that NGA distribution fibre has an asset life of 20 years while non-NGA distribution fibre has an asset life of 15 years. BT told us that it uses a

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cable volumes, this reflected the fact that the distribution fibre cables carry fewer individual fibres (i.e. the cables being reclassified were not the same as the remaining, larger, spine fibre cables).

[344] BT, response to 4th CAR s135, dated 9 March 2016 (Q1.64).

[345] BT, response to 4th CAR s135, dated 9 March 2016 (Q1.63). BT also informed us that it does not estimate a CCA valuation for distribution and spine fibre separately; rather it estimates a single CCA valuation for total access fibre. BT attributes the CCA adjustments via a base methodology called CCAFIB. BT confirmed that "our attribution methodology for [access fibre] CCA adjustments, CCAFIB is a weighting of both the PDTLFSC methodology and the PDTLFDC methodology. We do this because we do not have separate CCA valuations for these two assets".

shorter asset life for non-NGA distribution fibre to reflect the higher commercial risk of non-NGA distribution fibre becoming redundant.[346]

6.15 We were concerned that, when attributing distribution fibre costs between NGA and non-NGA, BT did not take account of this difference in asset lives. We said that where asset lives differ and information on depreciation and asset costs is available by asset type, we considered that an objective methodology would use this information to attribute the depreciation and asset costs. We considered that such information was available to BT.[347]

6.16 We therefore proposed that BT should attribute the distribution fibre depreciation and MCE costs between NGA and non-NGA in a way which took into account the difference in asset lives between NGA and non-NGA fibre assets. In the November 2015 LLCC Consultation we proposed to include a base year adjustment to reflect the impact of attributing distribution fibre costs in this way.

Spine fibre

6.17 We noted that spine fibre NGA and non-NGA assets have an asset life of 20 years. We said that if BT was able to separately identify NGA and non-NGA spine fibre cables, the use of spine fibre GRC to attribute costs between NGA and non-NGA would appear appropriate since we would not expect this to skew the attribution given that the asset lives are the same.

6.18 However, BT is unable to separately identify NGA and non-NGA spine fibres, so it currently uses the distribution fibre GRC NGA/non-NGA ratio to attribute spine fibre costs.

6.19 BT said that its rationale for applying the distribution fibre NGA/non-NGA GRC ratio to spine fibre was that a signal passing through a distribution fibre must have first passed through a spine fibre, implying that the ratio of NGA to non-NGA traffic volume would be similar for spine and distribution fibre.[348] While we agreed with BT's logic that it would be reasonable to expect the ratio of spine fibre NGA/non-NGA traffic volume to be similar to the ratio of distribution fibre NGA/non-NGA traffic volume, we did not consider that the distribution fibre GRC would appropriately reflect this because the mix of cable sizes between distribution fibre NGA and non-NGA is dissimilar.

[346] BT response to the 4th CAR section 135 notice, dated 23 February 2016, questions 1.58 and 1.59.
[347] We said that BT would need information on the gross and net book values of these assets and a method of reflecting the current cost (CCA) values. BT's 'life of plant list' (see page 281 of the 2013/14 DAM) has records of distribution fibre assets by NGA and non-NGA, gross book value, net book value and asset life. Although BT has told us that it does not estimate current cost values such as NRC for distribution fibre separately, we consider that BT could estimate these values by reference to the information it has on distribution fibre; namely the gross book values (GBV), net book values (NBV) and gross replacement costs (GRC). For example, the NBV/GBV ratio multiplied by the GRC would give an estimate of the NRC.
[348] BT response to the 4th CAR s135, dated 9 March 2016 to question 1.63, includes reference to ASIG paper RA14-088

6.20 We explained that almost all NGA distribution fibre cables contain four fibres while non-NGA distribution fibre cables are relatively larger (although the majority of non-NGA distribution fibre cables also contain four fibres).[349]

6.21 The GRC for distribution fibre is estimated by applying a replacement cost price to different cable sizes. We said that, since NGA distribution fibres are carried through relatively smaller cables than non-NGA distribution fibres, the impact of economies of scale[350] means that the cost per fibre for NGA distribution fibre is greater. We explained that, as a result, the impact of attributing spine fibre costs between NGA and non-NGA using the distribution fibre GRC ratio would be to attribute more cost to NGA than would be implied by the simple volume of distribution fibres that are associated with NGA. In 2014/15 for example, around 13% of distribution fibres were NGA fibres, but 16% of the distribution fibre GRC was associated with NGA due to the relative differences in cable sizes.

6.22 For this reason, we did not consider that cable size appropriately represents the amount of NGA and non-NGA distribution traffic. We proposed that BT should attribute spine fibre costs between NGA and non-NGA using the volume of distribution fibre NGA and non-NGA fibres. We explained that using the volumes of distribution fibres would reflect the fact that the ratio of spine fibre NGA/non-NGA traffic volume would be similar to the ratio of distribution fibre NGA/non-NGA traffic volume.[351] In the November 2015 LLCC Consultation we proposed to include a base year adjustment to reflect the impact of attributing spine fibre costs using the relative distribution fibre NGA and non-NGA volumes.

Access fibre maintenance costs

6.23 In the June 2015 CAR Consultation we considered that maintenance costs could be higher for older access fibre than newer access fibre. If this was the case we considered that the Fibre GRC Methodology could be inappropriate because it would not reflect the age of the fibre when attributing fibre maintenance costs.

6.24 However, in the November 2015 CAR Consultation we said that, unlike copper, the level of fibre maintenance is not necessarily linked to the age of the fibre. We explained that this is because fibre is less sensitive to age and atmospheric factors than copper. We said that while fibre can be sensitive to manual intervention or environmental impacts[352] we had not been able to identify an activity or characteristic of fibre that is associated with the amount of maintenance required.

6.25 We said that in the absence of a specific activity or characteristic of fibre that could be used to attribute maintenance costs between NGA and non-NGA, we did

[349] See Table 9.3 of the November 2015 CAR Consultation. 85% of non-NGA distribution fibre cables contain four fibres.
[350] For example, the price of replacing a 12-fibre cable is less than three times the cost of replacing a 4-fibre cable, BT Fibre Model 232 - CCA Fibre 13-14_p12_PART_E, 6 November 2014.
[351] We noted that in 2013/14 using distribution fibre volumes would indicate that 10% of spine fibre costs were associated with NGA, compared to 13% using the Fibre GRC Methodology. We said that while this percentage difference was not large in 2013/14, BT's on-going investment in NGA meant that this difference had the potential to be more marked in future and that changes to the distribution fibre cable-size mix would also affect this difference.
[352] Manual intervention includes damage from road works or utility works and environmental impacts include flooding and subsistence.

not consider that an attribution rule using GRC was inappropriate. We also noted that the amount of access fibre maintenance costs in 2013/14 was [✂]£0m to £10m.[353] This is a relatively small amount and an alternative attribution rule would not necessarily have a significant impact on the amount of fibre maintenance costs attributed to regulated markets. We therefore did not propose an alternative attribution rule for access fibre maintenance costs in the November 2015 CAR Consultation and did not propose to make a base year adjustment in relation to access fibre maintenance costs in the November 2015 LLCC Consultation.

Stakeholder responses

6.26 BT did not agree that its existing methodology for distribution and spine fibre should be replaced. BT said that the existing methodology was appropriate, practical and proportionate.[354]

6.27 BT said that Ofcom's proposed alternative "may be an acceptable alternative to the current approach". [355] However, BT considered that the attribution of access fibre costs should take into account the fact that access fibre costs incurred in relation to BDUK are separately accounted for.[356]

6.28 Vodafone agreed that allocating distribution fibre depreciation and MCE between NGA and non-NGA on the basis of GRC ignores the fact that differences in asset lives create differences in depreciation and MCE.[357] Vodafone said that the attribution of distribution fibre should take account of differences in both asset lives and in asset ages.

6.29 Vodafone agreed that the current methodology used to allocate spine fibre depreciation and MCE between NGA spine fibre and non-NGA spine fibre was inappropriate. Vodafone said that "the split of NGA spine traffic and non-NGA spine traffic is unlikely to be similar to the split of NGA distribution GRC and non-NGA distribution GRC, since the latter will be influenced by non-traffic related factors."[358] Vodafone considered that the relative length of NGA and non-NGA distribution cables could differ and that the allocation of spine fibre should take this into account.[359]

6.30 No stakeholders commented on our proposal not to make any adjustment for access fibre maintenance costs.

[353] In 2014/15 the amount of access fibre maintenance costs was £4m taken from BT, 2014/15 RFS Additional financial Information schedule A12 – control files, dated 17 August 2015
[354] BT, November 2015 CAR Consultation response, page 25, paragraph 135
[355] BT, November 2015 CAR Consultation response, page 25, paragraph 136
[356] BT, November 2015 CAR Consultation response, page 25, paragraph 137
[357] Vodafone, November 2015 CAR Consultation response, page 15, paragraph 5.19
[358] Vodafone, November 2015 CAR Consultation response, page 15, paragraph 5.22
[359] Vodafone, November 2015 CAR Consultation response, page 15, paragraph 5.23

Ofcom's response and decision

Distribution fibre

6.31 We continue to be concerned about the attribution of distribution fibre. This is because the current methodology does not take account of the fact that distribution fibre NGA and non-NGA assets have different asset lives and information is available to BT to separately identify the depreciation and MCE associated with distribution fibre NGA and non-NGA assets.

6.32 Attributing distribution fibre depreciation and MCE costs using the available data on distribution fibre NGA and non-NGA assets will take account of both asset lives and also asset ages, as suggested by Vodafone. This is because the depreciation and MCE associated with distribution fibre NGA and non-NGA assets will already reflect the relative asset life and age of the assets; e.g. where NGA distribution fibre is younger than non-NGA distribution fibre it will have a higher relative MCE since it has accumulated fewer years of depreciation.

6.33 BT's response to the November 2015 CAR Consultation did not elaborate on how it considered our proposal should take into account the access fibre costs incurred in relation to BDUK. BT has since told us that the costs of distribution and spine fibre currently attributed using the Fibre GRC Methodology exclude costs associated with BDUK. However, BT told us that the assets used to calculate the GRC within the Fibre GRC Methodology includes assets incurred for BDUK.[360]

6.34 In principle, we consider that the depreciation and MCE used in the base used to attribute distribution fibre costs between NGA and non-NGA should exclude BDUK, since BDUK costs are separately accounted for. However, BT told us that its cost attribution models do not currently distinguish between fibre assets in BDUK areas and fibre in other areas.[361] Since BDUK spend is incurred to support the rollout of NGA fibre, the consequence of this is that the proportion of access fibre that relates to NGA is likely to be over-estimated under both BT's existing methodology and our proposed methodology. However, since the information currently available to BT does not allow it to distinguish between fibre assets in BDUK areas and fibre in other areas, we are unable to determine whether this effect is likely to be significant or not.

6.35 We consider that attributing distribution fibre costs between NGA and non-NGA in a manner that takes account of the difference in asset lives would be more objective than the current methodology since the distribution fibre depreciation and MCE costs would be attributed to the NGA and Non-NGA assets to which they relate.

6.36 We have therefore decided to make a base year adjustment to reflect the impact of attributing distribution fibre costs to NGA and non-NGA in a way takes account of the difference in asset lives. Although in principle the base used to attribute these costs should exclude costs associated with BDUK where applicable, BT has

[360] BT response dated 25 February 2016 to question 10b of the 7th CAR section 135 notice.
[361] BT response dated 25 February 2016 to question 10b of the 7th CAR section 135 notice.

told us that it has not been able to take account of this when modelling the size of the base year adjustment. [362]

Spine fibre

6.37 Unlike with distribution fibre, BT is unable to separately identify NGA and non-NGA spine fibres. It is therefore not possible to attribute the depreciation and MCE costs of spine fibre between NGA and non-NGA using information on the underlying spine fibres as we can for distribution fibre.

6.38 While we agree with BT that the ratio of NGA to non-NGA traffic volume would be similar for spine and distribution fibre (since a signal passing through a distribution fibre must have first passed through a spine fibre), we do not consider that the distribution fibre GRC ratios for NGA and non-NGA would reflect this relationship because the mix of cable sizes between NGA and non-NGA is dissimilar, as described in the November 2015 CAR Consultation.

6.39 We also agree with Vodafone that the GRC of distribution fibre NGA and non-NGA cables could be affected by relative cable length and this may not reflect the amount of traffic passing through the cables to inform the NGA/non-NGA split for spine fibre.

6.40 We do not agree that it would be appropriate to attribute spine fibre costs between NGA and non-NGA by reference to the length of distribution fibre cables (as Vodafone appears to suggest) because i) fibre length in any case is captured in part by the GRC ratios (i.e. the current methodology) and ii) it is not clear how the distribution fibre cable lengths would reflect the relative NGA/non-NGA traffic volumes for spine fibre; we consider this would be better reflected by the relative volume of individual distribution NGA/non-NGA fibres.

6.41 We consider that the ratio of individual distribution fibre NGA volumes to non-NGA volumes would better reflect the relative distribution fibre traffic volume than the relative GRC values because a signal passing through a distribution fibre must have first passed through a spine fibre. We consider that attributing spine fibre costs between NGA and non-NGA using this ratio would ensure that the ratio of NGA to non-NGA traffic volume would be similar for spine and distribution fibre.

6.42 We have therefore decided to make a base year adjustment to reflect the impact of attributing spine fibre costs to NGA and non-NGA using the ratio of distribution fibre NGA volumes to non-NGA volumes. As with distribution fibre, BT told us it was unable to take into account BDUK when estimating the size of the base year adjustment for spine fibre.[363]

Access fibre maintenance

6.43 We have not been able to identify a more causal or objective attribution methodology for access fibre maintenance costs. Given the relatively small amount of access fibre maintenance cost and the fact that no stakeholders commented on our proposal in the November 2015 CAR Consultation and the

[362] BT, response to 8th CAR s135, dated 8 March 2016, question 6
[363] BT, response to 8th CAR s135, dated 8 March 2016, question 6

November 2015 LLCC Consultation, we have decided not to make any base year adjustment for access fibre maintenance costs.

Calculation of the adjustment

6.44 Table 6.2 shows the percentage of distribution and spine fibre attributed to NGA and non-NGA under i) the existing Fibre GRC Methodology and ii) the attributions reflected in our base year adjustments.[364]

Table 6.2: 2014/15 attributions of spine and distribution fibre between NGA and non-NGA

		Operational Costs		MCE	
		Current methodology	Base year adjustment	Current methodology	Base year adjustment
Spine	NGA	16%	13%	16%	13%
	Non NGA	84%	87%	84%	87%
Distribution	NGA	16%	13%	16%	27%
	Non NGA	84%	87%	84%	73%

Source: Ofcom, based on data provided by BT, response to question 2b)ii) of the 8th CAR section 135 notice, dated 10 March 2016

6.45 Table 6.3 shows BT's estimate of the base year adjustment for access fibre. For TI, the impact is to reduce operating costs by £0.2m and MCE by £4.3m. For Ethernet, the impact is to reduce operating costs by £3.3 and MCE by £56.8m.

Table 6.3: Estimate of base year fibre adjustment, £m

	Operating costs	MCE	FAC
TI	(0.2)	(4.3)	(0.6)
Ethernet	(3.3)	(56.8)	(8.9)

Source: BT response dated 9 February 2016 to question 1 of the 8th CAR section 135 notice

[364] We estimate that approximately [✂]£250m to £300m of NRC is attributed to NGA fibre. This is broadly similar to BT's fibre capex recorded as NGA to date (provided by BT on 2 February 2016 in response to the 6th CAR section 135 notice). This comparison can only give an indication of whether the NRC of fibre attributed to NGA is reasonable because BT's record of NGA fibre capex indicates what the fibre was originally intended to be used for and it may not reflect the services it is currently used to provide. More accurate information may be available to BT in future which could improve the estimate of the amount of fibre that is used for the purposes of NGA (including, for example, the balance sheet components of NRC such as gross book value and cumulative depreciation).

Section 7

Transfer charges

Introduction

7.1 Transfer charges are internal trades between BT divisions.[365] There are two elements of transfer charges: a 'transfer out' from one part of BT and a corresponding 'transfer in' to another part of BT.[366]

7.2 In BT's cost attribution system, transfer charges are either balanced or unbalanced. Balanced transfers make no contribution to total costs while the effect of unbalanced transfers on the cost attribution system in 2014/15 was to add an additional [✂] £100m to £150m to operational costs in regulated markets. Of these unbalanced transfers, around [✂]£50m to £100m were set by reference to external prices. We estimate that these unbalanced transfers (set using external prices) in 2014/15 represented less than 1% of operating costs in regulated markets, including leased lines.[367]

7.3 In the November 2015 CAR Consultation we said that we did not consider the inclusion of balanced or unbalanced transfer charges in BT's cost attribution system was inappropriate. As a result we did not propose to make any base year adjustments relating to transfer charges in the November 2015 LLCC Consultation.

7.4 Stakeholder responses focused on our proposals in relation to those unbalanced transfer charges that are based on external prices.

7.5 While the cost to BT of supplying these services internally could be considered to be the underlying cost of the service rather than the external price, we have decided not to adjust the base year costs in this case because estimating the underlying costs of the services represented by these transfer charges is difficult, and to do so would be disproportionate to the impact on the costs of leased lines services in the base year of the charge control, which we believe not to be material.

7.6 We have therefore not made a base year adjustment in relation to transfer charges that are set by reference to external prices.

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[365] BT, Accounting Methodology Document 2015, Section 15

[366] For example, where Openreach occupies a building held in Group property there may be a transfer out from Group Property (shown as a credit in Group Property) and a corresponding transfer into Openreach (shown as a debit in Openreach).

[367] Derived from BT, response to 7th CAR s135, dated 26 February 2016, question 7a. We took the total amount of transfer charges set by reference to an external price that are attributed to regulated markets and divided it by the total operating costs attributed to regulated markets in the 2014/15 Regulatory Financial Statements.

Background

7.7 Balanced transfers net-off within BT's cost attribution system and make no contribution to total costs. Some balanced transfer charges are also used to help attribute costs, such as property and motor transport costs.

7.8 Unbalanced transfers do not net-off within BT's cost attribution system. These unbalanced transfers usually arise because BT's cost attribution system does not include costs recorded in BT's 'non-core' subsidiaries.[368] BT's 2014/15 Accounting Methodology Documents state that unbalanced transfer charges are included in the cost attribution system for two reasons:[369]

- "The charge [received] is from a non-core unit. In these cases REFINE does not have a detailed view of the underlying costs in the charging unit but we believe that the transfer-in represents an appropriate estimate of the relevant costs e.g. BT Group insurance premiums."
- "The charge relates to an externally available service provided for internal use in which case the charges are shown at standard prices. In these cases, we consider the prices to be an appropriate estimate of the costs e.g. the provision of BT Conferencing services."

7.9 Therefore, BT's cost attribution system only records either the transfer out to non-core subsidiaries or the transfer in from non-core subsidiaries. Unbalanced transfers contribute to the total costs recorded in BT's cost attribution system.

7.10 In the Regulatory Financial Statements 2014/15 unbalanced transfer charges contributed a net [✂]£100m to £150m of operating costs to regulated markets (although only a proportion of these were set by reference to an external price).

What we said in November

7.11 In the November 2015 CAR Consultation we said that we did not consider the inclusion of balanced or unbalanced transfer charges in BT's cost attribution system was inappropriate. As a result we did not propose to make any base year adjustments relating to transfer charges in the November 2015 LLCC Consultation.

Balanced transfer charges

7.12 In the November 2015 CAR Consultation we considered that the inclusion of balanced transfers in BT's cost attribution system would be inappropriate if i) the transfers in and out did not net to zero or ii) they were attributed in different ways.

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[368] These non-core subsidiaries are usually associated with BT's overseas operations. BT's 2014/15 Accounting Methodology Documents say that BT's cost attribution system includes all costs for units that use the core general ledger but that costs from non-core units are allocated to the Retail Residual market (page 16). The 'core' entry of any transfer charge between core and non-core units will be in the cost attribution system but the 'non-core' entry will not. Therefore, while transfer charges associated with non-core units balance within BT Group as a whole, they are unbalanced in the cost attribution system.

[369] BT, Accounting Methodology Document 2015, page 270

7.13 We explained that where a transfer in has a corresponding transfer out, BT's cost attribution system recognises this by using a general attribution rule, 'Rule Type 28', that attributes the transfer charge receipts (transfers in) in proportion to the transfer charge payments (transfers out).[370] We said that BT had provided evidence that these transfer charges net to zero at a market level.[371]

7.14 We said that for balanced transfers, the transfers in and out appeared to net to zero and that they are attributed in the same way throughout the cost attribution system. We explained that while the inclusion of transfer charges in the cost attribution system increases the size and complexity of the cost attribution system, we did not consider that their inclusion in the cost attribution system is inappropriate.

Unbalanced transfer charges

7.15 We considered that the inclusion of unbalanced transfer charges in cost attribution system could be inappropriate if they were based on external prices that did not represent a reasonable estimate of the cost to BT.

7.16 BT told us that in 2013/14 there were 29 unbalanced transfer charges included in the cost attribution system which individually had a value greater than £1m.[372] We said that of these, five represented transfers associated with purchasing services from other parts of BT that were calculated by reference to an external price and attributed in part or whole to regulated services.[373] These five transfers are shown in Table 7.1.

Table 7.1: Unbalanced transfer charges calculated by reference to external prices and attributed to regulated services, 2013/14, £m

F8 Code	Description	BT Subsidiary	Total value £m	Value in regulated markets £m
244648	This is a trade from BT Retail to BT Group at external prices for the discounted broadband lines which employees are entitled to receive.	British Telecommunications plc (BT Consumer)	[✂] £10m to £50m	[✂] £0m to £10m
24777A	This is a charge from a non-core unit (BT Conferencing) for the internal use of conferencing services. Each unit receives a charge for the services consumed.	British Telecommunications plc (BT Global Services)	[✂] £10m to £50m	[✂] £0m to £10m
244772	This represents a charge from a non-core subsidiary of BT Group (BT IT Services Ltd) to BT TSO for IT hardware and services that are used in the services that BT TSO provides for the lines of business. This is a cost recovery charge based on the actual cost of equipment purchased and services provided.	BT IT Services Limited	[✂] £10m to £50m	[✂] £0m to £10m

[370] BT, Accounting Methodology Document 2015, page 19
[371] BT, response to 4th CAR s135, dated 25 February 2016, question 1.70
[372] BT, response to the 4th CAR s135, dated 25 February 2016, question 1.69
[373] The remaining unbalanced transfer charges are comprised of pay costs or other operating costs only and are not calculated by reference to an external price.

247721	This is a charge from a non-core unit within BT Global Services to BT Group for the internal use of their products at external prices. These services are used for BT's internal infrastructure e.g. its' Intranet. This charge is based on circuit prices but also includes additional BT Global Services management costs.	British Telecommunications plc (BT Global Services)	[✂] £10m to £50m	[✂] £0m to £10m
248A46	This charge relates to management consultancy fees charged from a BT owned subsidiary. This charge is based on consultancy fees.	Moorhouse Consulting Ltd.	[✂] £0m to £10m	[✂] £0m to £10m
Total			[✂] £50m to £100m	[✂] £10m to £50m

Source: BT, response to 4th CAR s135, dated 25 February 2016, question 1.69

7.17 We said that where one part of BT supplies a service to another part of BT that it also supplies externally, the cost to BT is the underlying cost of the service, which may not be the same as the externally charged price. We said that while the external price would represent the cost to BT where it actually purchased the service from another supplier, the cost to BT is likely to be less than this when it supplies itself since, for example, it may not include a mark-up on costs.

7.18 However, we considered that estimating the underlying cost to BT of an internally-provided service is not straightforward. Given this difficulty, we considered whether calculating the transfer by reference to an external price, which may include some retail margin, is likely to materially overstate the cost to BT of providing the service for the purposes of cost attribution. For this purpose we considered the margin of the retail residual market reported in the Regulatory Financial Statements but noted that this margin would not necessarily equate to that incorporated into the prices of the transfers included in Table 7.1.

7.19 We explained that over the last three years, the margin[374] associated with the retail residual market has broadly varied between 5 and 10%.[375] Assuming that the external prices used to calculate the transfers in Table 7.1 include the same retail margin, then approximately £1-3m of the transfer cost included in regulated markets could represent a margin. In any one particular regulated market, this means that the impact is likely to be less than £1m. We said that on this basis calculating the transfers in Table 7.1 using external prices is not likely to materially overstate the cost to BT of internally providing the relevant service.

7.20 We said that given the difficulties in calculating the underlying cost of an internally-provided service, and the fact that the impact on regulated markets is likely to be small, we did not consider that calculating certain unbalanced transfers by reference to an external price for cost attribution purposes was inappropriate.[376]

[374] Return divided by total revenue.
[375] Derived from the revenue and return figures reported by BT in the 'Performance summary by market' schedule in the Regulatory Financial Statements
[376] Where transfer charges are based on the external price and are included in the cost base of regulated services, then a charge control may wish to consider whether any adjustment is required for the purposes of setting prices.

Stakeholder responses

7.21 Stakeholder responses focused on our proposals in relation to those unbalanced transfer charges that are based on external prices.

7.22 BT agreed with Ofcom's assessment and said that "it is more efficient to include the costs of such items as BT conferencing services and employee use of broadband at the price they are sold in the market, and such charges are based upon objective prices, charged to third parties. To calculate the underlying costs of such services would be disproportionate to the benefits, necessarily subjective and, as Ofcom notes, immaterial in its effect."[377]

7.23 TalkTalk and Vodafone disagreed with Ofcom's assessment.

7.24 TalkTalk noted that Ofcom accepts that the underlying cost is appropriate to use to calculate the transfer charges but proposes to continue with BT's approach of basing the transfer charge on the external price rather than the underlying cost.[378] TalkTalk argued that Ofcom's proposal of using the external price rather than the underlying cost given the difficulty in calculating the underlying cost and that the retail margin is likely to be small was flawed for the following reasons:

- Ofcom's approach is 'precisely wrong'. Ofcom knows that the cost is less than the external price. Ofcom should adopt an 'approximately right' approach making a best estimate of the margin/underlying cost.
- The margin on these internally provided services will be higher than the average margin for retail services since no marketing, sales or acquisition costs will be incurred for internally provided services.[379]

7.25 TalkTalk also said that transfer prices set out in Table A7.1 appeared to be inconsistent with the statutory accounts. In particular TalkTalk noted that BT's annual report showed BT's Global Services had internal revenue of £29m, but the total value of transfer charges from Global Services in Table 7.1 appeared to potentially be greater than this.

7.26 [✂] considered that the cost of conferencing facilities provided by Global Services was excessive in comparison to the fees per head that [✂] paid.[380]

7.27 Vodafone considered that basing transfer charges on the externally charged price may include a mark-up on costs and overstate the cost to BT of providing the service internally.[381]

7.28 Vodafone did not agree that "the process of estimating underlying costs is likely to be complex". Vodafone said that the BT entity providing the service was likely to have management information which detailed the profitability of the services

[377] BT, November 2015 CAR Consultation response, page 27, paragraph 150
[378] TalkTalk. November 2015 CAR Consultation response, page 16, paragraph 4.17
[379] TalkTalk. November 2015 CAR Consultation response, page 16, paragraph 4.18
[380] [✂]
[381] Vodafone, November 2015 CAR Consultation response, page 16, paragraph 5.25

provided at the prices assumed. Ofcom should obtain that information to inform its analysis of the underlying costs.[382]

7.29 Vodafone also considered that the costs associated with the transfer charges in Table 7.1 should be excluded from the cost base of regulatory products unless BT explains why they should be included.[383]

Ofcom's response and decision

Base year adjustment

7.30 Stakeholder responses focused on those unbalanced transfer charges that are associated with purchasing services from other parts of BT, calculated by reference to an external price and attributed in part or whole to regulated services. We have considered whether a base year adjustment needs to be made in relation to these particular unbalanced transfer charges. We do not consider that a base year adjustment is required for other types of transfer charges.

7.31 Table 7.2 shows an updated table of the unbalanced transfers set by reference to an external price that had a value of greater than £1m in 2014/15.

Table 7.2 Unbalanced transfer charges calculated by reference to external prices and attributed to regulated services, 2014/15, £m

F8 Code	Description	BT Subsidiary	Total value £m	Value in regulated markets £m
244648	This is a trade from BT Retail to BT Group at external prices for the discounted broadband lines which employees are entitled to receive.	British Telecommunications plc (BT Consumer)	[✂]£10m to £50m	[✂]£10m to £50m
24777A	This is a charge from a non-core unit (BT Conferencing) for the internal use of conferencing services. Each unit receives a charge for the services consumed.	British Telecommunications plc (BT Global Services)	[✂]£10m to £50m	[✂]£0m to £10m
244772	This represents a charge from a non-core subsidiary of BT Group (BT IT Services Ltd) to BT TSO for IT hardware and services that are used in the services that BT TSO provides for the lines of business.	BT IT Services Limited	[✂]£0m to £10m	[✂]£0m to £10m
247721	This is a charge from a non-core unit within BT Global Services to BT Group for the internal use of their products at external prices. These services are used for BT's internal infrastructure e.g. its' Intranet.	British Telecommunications plc (BT Global Services)	[✂]£10m to £50m	[✂]£0m to £10m
Total			[✂]£50m to £100m	[✂]£10m to £50m

Source: BT response dated 26 February 2016 to question 7 of the 7th CAR section 135 notice. There was an immaterial amount of consultancy fees from Moorhouse Consulting Ltd in 2014/15 so this transfer does not appear in Table 7.2.

[382] Vodafone, November 2015 CAR Consultation response, page 16, paragraph 5.26 and 5.27
[383] Vodafone, November 2015 CAR Consultation response, page 16, paragraph 5.26

7.32 In 2014/15 therefore, approximately [✂]£10m to £50m of internal transfers based on external prices were attributed to regulated markets. This will have been reduced somewhat by the base year adjustments described elsewhere in this annex; for example the employee broadband offer and intranet services provided by Global Services are attributed via AG112 which we discuss in Section 2.[384] Of this amount, we estimate that around [✂]£0m to £10m would have been included in the cost base of leased lines services.[385]

7.33 We disagree with Vodafone that these costs should automatically be excluded from the cost base of regulatory decisions such as the LLCC. These costs appear to be legitimate costs incurred by BT, a proportion of which could reasonably be expected to be required to provide regulated services.

7.34 As set out in the November 2015 CAR Consultation, we consider that the cost to BT of supplying these services internally is the underlying cost of the service rather than the external price. However, we have decided not to adjust the base year costs in this case because estimating the underlying costs of the services represented by these transfer charges is difficult, and to do so would be disproportionate to the impact on the costs of leased lines services in the base year of the charge control, which we believe not to be material.

7.35 In relation to estimating the underlying cost and the potential impact this would have on the charge controls we are setting, some stakeholders suggested that we should exclude a 'best estimate' of the margin on these services. In the November 2015 CAR Consultation we estimated that the retail margin, based on a high level analysis of the last three years of data reported in the Regulatory Financial Statements, was approximately 5% to 10%. We considered that if these transfers were set by reference to an external price that included such a margin, this would not materially overstate the cost to BT of internally providing these services. Across all leased lines, we consider that it would imply a potential overstatement of operating costs of around [✂] <£1m.[386] We do not consider that this would have had a material impact on the base year costs of leased lines in this charge control. For this reason, we do not consider it would have been proportionate to have obtained and investigated detailed management information from BT on these services in order to try and estimate a more accurate margin.

7.36 We have therefore not made a base year adjustment in relation to transfer charges that are set by reference to external prices because estimating the underlying costs of the services represented by these transfer charges is difficult, and to do so would be disproportionate to the impact on the costs of leased lines services in the base year of the charge control, which we believe not to be material.

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[384] As explained in section 2, in 2014/15 around 59% of AG112 costs were attributed to regulated markets. Following our base year adjustments explained in section 4 the percentage of AG112 costs attributed to regulated markets is around 37%.

[385] The 2014/15 Regulatory Financial Statements indicate that leased lines represented approximately 15% of the operating costs of regulated markets.

[386] i.e. 5%/10% multiplied by the estimated [✂]£0m to £10m cost included in leased lines services associated with these transfers.

Global Services internal revenue

7.37 TalkTalk noted that BT's annual report showed BT's Global Services had internal revenue of £29m, but the total value of transfer charges from Global Services in Table 7.1 appeared to potentially be greater than this.

7.38 BT told us that the internal revenue shown for Global Services in its annual report is a "single item which [relates] to BT conferencing services sold by BT Business and transferred to BT Global Services" and "the BT conferencing transfer costs shown in [Table 7.1] relates to the provision of own-use of BT Conferencing products which is not recognised as revenue in the annual report. In conclusion the internal revenue shown in our annual report does not breakdown into the cost transfer charges shown in [Table 7.1] as they are different transactions".[387]

7.39 On the basis of BT's response, we do not consider that the transfer charges are inconsistent with the statutory accounts as suggested by TalkTalk.

Cost of BT Conferencing

7.40 [✂] considered that the cost of conferencing facilities provided by Global Services appeared excessive in comparison to the fees per head that [✂] paid. BT told us that the conferencing services it provides internally are the same as that provided externally and include audio, video, streaming and web based conferencing.

7.41 It is not clear to what extent the conferencing services used by [✂] are comparable to those used internally by BT. However, BT provided us with a breakdown of the implied conferencing cost per head by line of business.[388] For Openreach we note that the implied cost per head was lower than the cost per head provided by [✂] in its response. While the overall BT Group cost per head was higher than for [✂], this could reasonably represent differences in the products used.[389]

[387] BT response dated 26 February 216 to question 7b of the 7th CAR section 135 notice.
[388] BT response dated 26 February 216 to question 8b of the 7th CAR section 135 notice.
[389] We asked BT how it set the internal transfer charges relating to conferencing services. BT told us the transfer charges are based on the commercially agreed prices between Global Services and BT Group. The price paid by external customers for the main conferencing service can vary and the internal price used to set the transfer charge is consistent with those prices. Although we consider that small adjustments could be made to align the internal price with external customers of comparable size to BT, any adjustment would not have a material impact on leased lines costs (in 2014/15 [✂]£0m to £10m of transfer charges related to regulated markets, of which we estimate around 15% or less than [✂]£0m to £10m was attributed to leased lines markets).

Appendix A

Market level impacts

A.1 In the November 2015 CAR consultation we included a table showing the impact of our proposals in that consultation on each market reported in the 2014/15 Regulatory Financial Statements. To enable comparison with the numbers presented in that consultation, the two tables below show BT's estimate of the impact of our base year adjustments described in this annex if they were applied to each market reported in the 2014/15 Regulatory Financial Statements.

A.2 As explained in the introduction to this annex, the estimated base year adjustment for TI has been mapped onto the low, medium and high bandwidth TISBO and point of handover markets. The Ethernet base year adjustment has been mapped onto the AISBO non-WECLA market. Each of the following tables also shows the impact on other business connectivity markets whose costs are not included in the charge control model.

A.3 As expected, each adjustment overall nets to zero; i.e. only the attribution of costs is affected and not the overall amount of cost. The one exception is the adjustment to the attribution of duct costs. As explained in section 5, the adjustment slightly increases the amount of duct cost attributed to the access part of the network. Since access duct is affected by the RAV adjustment in the Regulatory Financial Statements, the increase in the amount of access duct also increases the size of the RAV adjustment. Therefore the total amount of duct costs reported in the Regulatory Financial Statements is reduced.[390]

[390] BT response dated 8 March 2016 to question 3 of the 8th CAR section 135 notice.

Table A.1: Impact on operating costs of adjustments that we have made in this statement, 2014/15, £m

	Market	General overheads	Property and electricity	Duct costs	Openreach and TSO software	Fibre costs	Total
FAMR	WFAEL	(67.4)	(8.7)	(1.4)	(1.6)	-	(79.1)
	WLA	(46.2)	(25.3)	(0.7)	(3.5)	-	(75.6)
	WLA - estimated NGA	(5.1)	0.1	(0.0)	(3.2)	4.2	(4.0)
	ISDN2	(2.0)	0.6	(0.0)	(0.2)	-	(1.7)
	ISDN30	(3.4)	3.6	0.0	(0.3)	(0.2)	(0.3)
	Total Fixed access markets	**(124.1)**	**(29.7)**	**(2.1)**	**(8.8)**	**4.0**	**(160.7)**
BCMR	Low Bandwidth TISBO	(5.8)	4.5	0.1	(1.4)	(0.2)	(2.6)
	Medium Bandwidth TISBO	(0.4)	(0.7)	0.1	(0.1)	(0.0)	(1.1)
	High Bandwidth TISBO	(0.4)	(0.3)	(0.0)	(0.2)	(0.0)	(0.8)
	Technical areas (Point of Handover)	(0.2)	0.2	0.0	(0.0)	(0.0)	0.0
	TI base year adjustment	***(6.7)***	***3.7***	***0.2***	***(1.6)***	***(0.2)***	***(4.5)***
	AISBO non-WECLA	(29.0)	(3.6)	2.1	(7.1)	(3.3)	(40.9)
	Ethernet base year adjustment	***(29.0)***	***(3.6)***	***2.1***	***(7.1)***	***(3.3)***	***(40.9)***
	TI Regional Trunk	(0.3)	(0.3)	(0.2)	(0.1)	-	(0.9)
	AISBO WECLA	(1.9)	(0.2)	0.0	(0.9)	(0.2)	(3.1)
	MISBO non-WECLA	(4.6)	(0.8)	0.3	(1.6)	(0.2)	(6.8)
	Other BCMR markets	***(6.7)***	***(1.3)***	***0.1***	***(2.6)***	***(0.3)***	***(10.8)***
	Total Business Connectivity Markets	**(42.4)**	**(1.1)**	**2.4**	**(11.3)**	**(3.8)**	**(56.3)**
Narrowband	Fixed call origination	(0.8)	9.1	0.2	0.7	-	9.2
	Fixed geographic call termination	(1.0)	8.4	0.2	0.6	-	8.2
	Technical areas (Interconnect Circuits)	(0.7)	0.9	0.0	(0.2)	(0.0)	0.2
	Total Narrowband Markets	**(2.5)**	**18.5**	**0.4**	**1.2**	**(0.0)**	**17.6**
WBA	WBA - Market A	(3.7)	(23.5)	(0.1)	1.6	-	(25.7)
	Total Wholesale Broadband Access Markets	**(3.7)**	**(23.5)**	**(0.1)**	**1.6**	**-**	**(25.7)**
Total	Total regulated markets	**(172.8)**	**(35.8)**	**0.6**	**(17.3)**	**0.2**	**(225.1)**
	Total unregulated	172.8	35.8	(1.6)	17.3	(0.2)	224.1
	Grand total	(0.0)	(0.0)	(1.0)	-	0.0	(1.0)

Table A.2: Impact on MCE of adjustments that we have made in this statement, 2014/15, £m

	Market	General overheads	Property and electricity	Duct costs	Openreach and TSO software	Fibre costs	Total
FAMR	WFAEL	(17.1)	25.4	24.2	1.5	-	34.0
	WLA	(12.0)	14.4	12.3	1.5	-	16.3
	WLA - estimated NGA	(2.5)	(0.4)	0.6	(9.5)	75.5	63.7
	ISDN2	(0.5)	3.0	0.7	(0.1)	-	3.1
	ISDN30	(1.2)	6.2	1.2	(0.0)	(4.8)	1.4
	Total Fixed access markets	**(33.3)**	**48.7**	**39.2**	**(6.7)**	**70.7**	**118.5**
BCMR	Low Bandwidth TISBO	(2.5)	(6.5)	(4.3)	(1.2)	(3.9)	(18.4)
	Medium Bandwidth TISBO	(0.1)	(2.4)	1.1	(0.0)	(0.2)	(1.7)
	High Bandwidth TISBO	(0.1)	(1.4)	(1.4)	(0.2)	(0.1)	(3.1)
	Technical areas (Point of Handover)	(0.0)	0.5	0.0	(0.0)	(0.2)	0.3
	TI base year adjustment	***(2.8)***	***(9.8)***	***(4.6)***	***(1.4)***	***(4.3)***	***(22.9)***
	AISBO non-WECLA	(5.8)	(1.1)	38.5	(15.7)	(56.8)	(41.0)
	Ethernet base year adjustment	***(5.8)***	***(1.1)***	***38.5***	***(15.7)***	***(56.8)***	***(41.0)***
	TI Regional Trunk	(0.1)	(2.5)	(9.7)	(0.1)	-	(12.4)
	AISBO WECLA	(0.4)	(0.1)	1.0	(2.1)	(3.2)	(4.8)
	MISBO non-WECLA	(0.4)	(0.4)	5.1	(2.6)	(2.5)	(0.8)
	Other BCMR markets	***(0.8)***	***(3.0)***	***(3.6)***	***(4.8)***	***(5.7)***	***(18.0)***
	Total Business Connectivity Markets	**(9.4)**	**(13.9)**	**30.3**	**(22.0)**	**(66.9)**	**(81.9)**
Narrowband	Fixed call origination	0.6	11.9	3.0	1.1	-	16.6
	Fixed geographic call termination	(0.6)	10.3	2.5	1.0	-	13.2
	Technical areas (Interconnect Circuits)	(0.5)	(3.2)	0.8	(0.2)	(0.0)	(3.1)
	Total Narrowband Markets	**(0.6)**	**19.0**	**6.4**	**2.0**	**(0.0)**	**26.7**
WBA	WBA - Market A	0.5	(45.0)	(12.9)	2.5	-	(54.8)
	Total Wholesale Broadband Access Markets	**0.5**	**(45.0)**	**(12.9)**	**2.5**	**-**	**(54.8)**
Total	Total regulated markets	**(42.8)**	**8.8**	**62.9**	**(24.2)**	**3.7**	**8.5**
	Total unregulated	42.8	(8.8)	(71.3)	24.2	(3.7)	(17.0)
	Grand total	(0.0)	(0.0)	(8.4)	0.0	0.0	(8.4)