Review of BT's cost attribution methodologies

Consultation

Publication date: 12 June 2015

Closing Date for Responses: 7 August 2015

About this document

This document sets out our proposals for changes to the way that BT attributes its costs to services.

BT is subject to regulatory financial reporting obligations. These have been imposed by Ofcom where BT has been found to have Significant Market Power in a relevant market. These include obligations relating to accounting separation and cost accounting and include requirements to produce and publish annual Regulatory Financial Statements and to maintain and publish certain accounting documents setting out how BT prepares those statements.

In May 2014, we decided that BT's Regulatory Financial Statements should comply with a new set of guiding principles, which we called the Regulatory Accounting Principles. We explained that we would establish Regulatory Accounting Guidelines which will contain high level guidelines and accounting rules.

We explained that we would review BT's existing attribution rules against the new Regulatory Accounting Principles and that we would consult on the findings from this review alongside the Business Connectivity Market Review consultation, with the intention that any proposed changes to the attribution rules would be reflected in any consequent price control.

This document sets out the initial findings from that review and invites stakeholders' views on if and how BT's existing attribution rules need to change.

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Section 1

Summary

Overview

1.1 British Telecommunications plc ("BT") is subject to regulatory financial reporting obligations. These have been imposed by Ofcom where BT has been found to have Significant Market Power in a relevant market. These include obligations relating to accounting separation and cost accounting and include requirements to produce and publish annual regulatory financial statements (the Regulatory Financial Statements) and to maintain and publish certain accounting documents setting out how BT prepares those statements.

1.2 In May 2014, we introduced a new set of Regulatory Accounting Principles[1]. These provide a set of guiding principles to be followed in BT's Regulatory Financial Statements. We explained that we will also establish Regulatory Accounting Guidelines which will contain high level guidelines and accounting rules.[2]

1.3 We explained that we would review BT's existing attribution rules against the new Regulatory Accounting Principles. We explained that we would consult on the findings from this review alongside the Business Connectivity Market Review (BCMR), with the intention that any proposed changes to the attribution rules would, subject to consultation, be reflected in the market review and any consequent price control.

1.4 This document sets out the initial findings from that review and proposes how BT's attribution rules should change to comply with the new Regulatory Accounting Principles going forward.

1.5 These proposals may have implications for future charge controls that we might set as an outcome of our market reviews, including the BCMR, and subsequently the Fixed Access Market Review, to the extent that the proposed changes are reflected in the cost data used to inform these decisions.

1.6 Separately, we are consulting on our proposals for new charge controls on leased lines services (the 2015 Leased Lines Charge Control, or "LLCC" Consultation), as part of the BCMR. The proposals for the leased lines charge controls rely on the analysis described in this document in relation to a number of proposed adjustments to BT's costs.

[1] The Regulatory Accounting Principles are, in order of priority: Completeness; Accuracy; Objectivity; Consistency with regulatory decisions; Causality; Compliance with statutory accounting standards; and Consistency of the Regulatory Financial Statements as a whole and from one period to another.
[2] The 2014 Statement followed a call for inputs of November 2011, a consultation in September 2012 (the "2012 Consultation") and a further consultation in December 2013 (the "2013 Consultation").
[2] http://stakeholders.ofcom.org.uk/telecoms/ga-scheme/specific-conditions-entitlement/market-power/fixed-access-market-reviews-2014/statement/

Summary of our review

1.7 Due to the complex nature of BT's cost attribution systems, it is not always straightforward to identify and understand the cost categories and attribution rules that have most impact on the reported costs of regulated services.

1.8 The purpose of this review is to improve our understanding of BT's cost attribution system, identify the key attribution methodologies and their impact on the reported costs of regulated services and determine whether those methodologies are appropriate.

1.9 We engaged consultants (Cartesian) to inform our review. We asked Cartesian to provide a report to:

- Provide an overview of BT's cost attribution system;
- Help us and other stakeholders to identify the cost categories and attribution rules that account for a significant proportion of the costs allocated to regulated services;
- Explain how those costs are attributed in BT's cost attribution system; and
- Consider whether the attribution bases are consistent with the Regulatory Accounting Principles.

1.10 We have published Cartesian's report alongside this consultation and we refer to that report extensively throughout this document. The proposals set out in this consultation were informed by Cartesian's findings but the final assessment of whether the methodologies are appropriate and the decision whether to propose changes to those methods are ours.

Our findings

1.11 Cartesian said that it was "satisfied that BT's cost attribution system is free from bias."[3] However, Cartesian did find "areas of weakness that BT could improve on."[4] In particular Cartesian "identified a large number of concerns with the methodologies used to apportion costs", although it noted that "the majority of these concerns do not have a material impact on cost attribution."[5]

1.12 Informed by Cartesian's review of BT's cost attribution system we have identified issues in four categories:

- **Errors**. We have identified mathematical or input errors in spreadsheets and supporting calculations as well as allocation errors where costs have been allocated incorrectly (for example where costs have been allocated to a service that is not delivered using those costs). Where we have identified errors, we set out how they will be corrected by BT. As explained in Section 7, we estimate that the effect of correcting these errors could be to move costs (on a fully allocated cost basis) of around £36m away from regulated markets.

[3] Cartesian, Cost Attribution Review, Executive Summary
[4] Cartesian, Cost Attribution Review, Executive Summary
[5] Cartesian, Cost Attribution Review, Executive Summary

- **Inappropriate attribution methodologies.** We have identified some attribution methodologies (including methodologies relating to BT's General Overheads) that we consider are inappropriate because we do not consider that they appropriately reflect the activities that cause the costs to be incurred. Where we consider that current rules are not appropriate, we propose what we consider to be appropriate cost attribution methodologies. As explained in Section 8, the impact of changing the current attribution rules will depend on the rules that take their place, but we estimate that the effect of moving to our proposed bases for the attribution of General Overheads could be to reattribute costs of around £226m away from regulated markets. We have also identified some other attribution methodologies that we consider need further investigation. As set out in Section 9, we seek stakeholders' views on these other methodologies and may return to these in a second consultation if we consider that the current rules are not appropriate, but at this stage we have not attempted to quantify the possible impact of any potential changes to the current rules.

- **Deficient supporting evidence**. In some areas, we have considered that BT may not be using the most objective and accurate source of data. It has also become apparent that some supporting data and calculations (such as Excel spreadsheets) that generate apportionments to be input into the cost attribution system are difficult to review and potentially not fit for purpose. In Section 10, we set out the steps we expect BT to take in respect of its evidence sources. In some of those cases we have suggested an alternative source of data which could offer a better, more objective source of evidence. Additionally, where we consider there may be scope for BT to update its supporting calculations, we expect BT to take the necessary steps to address these concerns. In the event that BT has not adequately addressed our concerns, we will consider whether more prescriptive action may be appropriate. There are also some cases where we have not been able to identify a better alternative. We will therefore engage with BT to gain a better understanding of the available sources of information.

- **Inadequate documentation.** We have identified aspects of the documentation published by BT to explain how the cost attribution system works that are unclear and not sufficiently transparent. We also consider that some of the explanatory documentation appears inaccurate or inconsistent. In Section 11, we highlight our concerns and explain that we expect BT to take the necessary steps to address these in the 2014/15 Regulatory Financial Statements. In the event that BT has not adequately addressed our concerns we will consider whether more prescriptive action may be appropriate.

Implications for costs attributed to regulated markets

1.13 As set out in Table 1.1, we have estimated the potential impact of the changes proposed in this document on the costs allocated to markets in the 2013/14 Regulatory Financial Statements. As explained in Section 8, these estimates are subject to some important caveats.

Table 1.1 Estimate of impact of proposals on costs attributed to markets (£'m)

	Fixed access	Business connectivity	Narrow-band	WBA 1 and 2	Residual
Correction of errors	(5)	(19)	(7)	(5)	36
Change inappropriate attribution bases	(155)	(55)	(6)	(10)	226
Total	**(160)**	**(74)**	**(13)**	**(15)**	**262**

1.14 In the 2015 LLCC Consultation we explain how the changes proposed in this document are taken into account in our calculation of the base year costs for the charge controls proposed for leased lines services. As set out in the LLCC Consultation, the adjustment to the base year costs is similar to the estimated impact of our proposals of £74m shown for Business Connectivity markets in table 1.1, but for the reasons given in the LLCC Consultation, not exactly the same.

Implications for regulatory reporting

1.15 Our views on BT's cost attribution rules and our proposals for alternative cost attribution methodologies are subject to consultation.

1.16 We expect to make decisions about the issues raised in this consultation at the same time as we make decisions in the 2016 BCMR and LLCC Statement.

1.17 We will issue a direction specifying any changes which BT will be required to make to its cost attribution rules to ensure that the Regulatory Financial Statements reflect the decisions we make in this review and the 2016 BCMR and LLCC Statement. We expect that such requirements will subsequently be reflected in the Regulatory Accounting Guidelines.

1.18 We expect that as a result of our review, and the requirements concerning compliance with the Regulatory Accounting Guidelines and the Regulatory Accounting Principles (including the requirement for consistency), there will be less need to make further adjustments to the Regulatory Financial Statements in our future market reviews and investigations. This is because we expect that over time the Regulatory Financial Statements will become more closely aligned to our regulatory decisions.

Next steps

1.19 We invite comments on our proposals in this document no later than 7 August 2015. The close of this consultation is intended to coincide with that of the Leased Lines Charge Control.

Section 2

Introduction

Background

2.1 In May 2014, we published a statement setting out our decisions on changes to BT's regulatory reporting requirements (the "Regulatory Financial Reporting Decision").[6]

2.2 We explained that BT's Regulatory Financial Reporting should provide us with the information that we need to make informed regulatory decisions, monitor BT's compliance with regulatory obligations, ensure that obligations address underlying competition issues and investigate potential breaches of obligations. It should also provide reasonable confidence to stakeholders that BT has complied with its SMP conditions while adding credibility to the regulatory financial reporting regime.

2.3 The way costs are attributed in BT's Regulatory Financial Statements has a significant impact on the reported costs of regulated services in BT's Regulatory Financial Statements.

2.4 We made changes to BT's Regulatory Financial Reporting requirements in the Regulatory Financial Reporting Decision that are intended to:

- give us a greater role in the way that BT prepares its Regulatory Financial Statements;
- improve the presentation of the published Regulatory Financial Statements and supporting documentation; and
- ensure that we and other stakeholders have the information that they need.

2.5 One of our decisions was to introduce new Regulatory Accounting Principles. We explained that, moving forward, BT's Regulatory Financial Reporting must comply with the new Regulatory Accounting Principles.

2.6 Other changes included the introduction of a change control process. We recognised that BT must be able to respond to new information and may have legitimate reasons to change some of its attribution basis, but explained that this must be subject to controls. We therefore introduced a new reporting obligation to give us early sight of changes and the ability to prevent changes that were not consistent with the new Regulatory Accounting Principles.

2.7 Also, to ensure stakeholders understand the reasons for and impact of any changes, we introduced requirements for BT to:

[6] The Regulatory Financial Reporting Decision followed a call for inputs of November 2011, a consultation in September 2012 (the "2012 Consultation") and a further consultation in December 2013 (the "2013 Consultation").
[6] http://stakeholders.ofcom.org.uk/telecoms/ga-scheme/specific-conditions-entitlement/market-power/fixed-access-market-reviews-2014/statement/

- prepare and publish a report four months before publication of the Regulatory Financial Statements explaining the reasons for and likely impact of each rule change that it wishes to make; and

- prepare and publish an audited reconciliation report at the same time as the published Regulatory Financial Statements showing what the Regulatory Financial Statements would have looked like on the previous bases and justifying and quantifying the impact of each rule change that it made in the year.

2.8 In the Regulatory Financial Reporting Decision, we explained that we would in due course establish Regulatory Accounting Guidelines that would define the high level accounting rules. We decided that a review of BT's cost attribution bases was needed ahead of publication of the Regulatory Accounting Guidelines. We said that the review would inform us in determining which areas the Regulatory Accounting Guidelines need to address, and to what level of detail they need to address those areas.

2.9 We have now completed the first stage of that review. This Consultation sets out our initial findings from that review and invites stakeholders' views on if and how the way BT attributes its costs needs to change.

Structure of this document

2.10 In Section 3, we provide a description of BT's cost attribution system and how it works. Our aim is to provide stakeholders with a better understanding of BT's complex cost attribution system and the terminology used by BT within the system.

2.11 In Section 4, we set out the scope of and approach to this review. We explain that, with the help of consultants (Cartesian), we identified the key attribution methodologies and assessed them against our Regulatory Accounting Principles to determine whether they provide an appropriate basis for attributing costs. Cartesian's report is published alongside this Consultation.[7]

2.12 The purpose of Section 5 is to help stakeholders identify the cost categories and attribution rules that might be important to them (by reference to the markets that receive a share of those costs or have costs driven to them by the attribution rules).

2.13 Section 6 summarises the issues considered in this review.

2.14 We explain our findings in Sections 7 to 11.

- In Section 7 we deal with errors. We define errors as being mathematical or input errors in spreadsheets and supporting calculations as well as attribution errors where costs have been attributed incorrectly (for example where costs have been allocated to a service that is not delivered using those costs). We identify the changes that have been or will be made to correct these errors.

- In Sections 8 and 9, we consider the inappropriate methodologies. These are the attribution methodologies that we consider do not follow the Regulatory Accounting Principles. Section 8 considers the way BT attributes its General Overheads using a methodology based on pay and return on assets. Section 9

[7] Cartesian, Cost Attribution Review http://stakeholders.ofcom.org.uk/binaries/consultations/cost-attribution-review/annexes/Ofcom_BT_Cost_Attribution_Review_Final_Report.pdf

considers the way some other costs – including property and electricity costs - are attributed. Where required, we propose changes to attribution rules and seek stakeholders' views on these proposals.

- In Section 10, we consider some of the evidence used by BT to inform its cost attribution calculations and explain why we consider that some evidence may be inadequate.

- In Section 11, we identify aspects of the documentation that should describe BT's attribution methodologies but does not accurately or clearly reflect what actually happens. We explain the steps we expect BT to take to address these issues.

2.15 In Section 12 we stand back from the review of the detailed attribution methodologies and instead consider the structure of cost attribution system and whether there may be scope for changes that might bring benefits for all stakeholders.

2.16 We set out our next steps, including how we intend to reflect our findings in the LLCC decision and in BT's regulatory reporting requirements, in Section 13.

Terminology

2.17 In this Consultation we refer to 'Attribution', 'Apportionment' and 'Allocation'. We use these terms as follows:

- 'Allocation' is used where costs are not divided and are directly "forwarded" to a particular cost category.

- 'Apportionment' is used where costs cannot be directly identified to be allocated to a particular cost category, so the costs need to be distributed over more than one cost category.

- 'Attribution' is used as a general term to cover both Allocation and Apportionment.

Links between these proposals and price controls

2.18 This document sets out the initial findings from our review and proposes changes to BT's existing attribution rules to ensure they comply with the new Regulatory Accounting Principles going forward.

2.19 These proposals may have implications for future charge controls that we might set as an outcome of our market reviews, including the BCMR, and subsequently the Fixed Access Market Review (FAMR), to the extent that the proposed changes are reflected in the cost data used to inform these decisions.

2.20 Separately, we are consulting on our proposals for new charge controls for leased lines services, as part of the BCMR. The proposals for the leased lines charge controls rely on the analysis described and reflect the proposals made in this document in relation to a number of proposed adjustments to BT's costs.

Impact assessment and EIA framework

Impact assessment

2.21 The analysis presented in this document constitutes an impact assessment as defined in Section 7 of the Communications Act 2003 ("the Act").

2.22 Impact assessments provide a valuable way of assessing different options for regulation and showing why the preferred option was chosen. They form part of best practice policy-making. This is reflected in Section 7 of the Act, which means that generally we have to carry out impact assessments where our proposals would be likely to have a significant effect on businesses or the general public, or when there is a major change in our activities. However, as a matter of policy we are committed to carrying out impact assessments in relation to the great majority of our policy decisions. For further information about our approach to impact assessments, see the guidelines, "Better policy-making: Ofcom's approach to impact assessment", which are on our website.

Equality Impact Assessment

2.23 We are separately required by statute to assess the potential impact of all our functions, policies, projects and practices on race, disability and gender equality. EIAs also assist us in making sure that we are meeting our principal duty of furthering the interests of citizens and consumers regardless of their background or identity.

2.24 It is not apparent to us that the proposals that we set out in this document are likely to have any particular impact on race, disability and gender equality. Specifically, we do not envisage the impact of any outcome to be to the detriment of any group of society. Nor are we envisaging any need to carry out separate EIAs in relation to race or gender equality or equality schemes under the Northern Ireland and Disability Equality Schemes. This is because we anticipate that our regulatory intervention will not have a differential impact in relation to people of different gender or ethnicity, on consumers in Northern Ireland or on disabled consumers compared to consumers in general. Similarly, we do not consider that our proposals will have a particular impact on consumers in different parts of the United Kingdom or on consumers with low incomes.

Next steps

2.25 Responses to this consultation are due by 7 August 2015. This date coincides with the closing date of the Leased Lines Charge Control consultation.

2.26 In light of the further analysis we will undertake (such as that described in Section 9 in relation to some of the allocation methodologies) and the need for some of BT's supporting documentation to be improved (as described in Section 11), it may be appropriate to consult again on additional or revised proposals for changes to attribution methodologies. If appropriate, we would expect to consult in autumn 2015.

2.27 We will issue the directions setting out those requirements necessary for BT to make changes to its attribution methodologies alongside our decisions on the BCMR and LLCC.

Section 3

BT's cost attribution system

Introduction

3.1 In this section we provide an overview of BT's cost attribution system and explain some of the terminology used in this document.

Background

3.2 BT is subject to Regulatory Financial Reporting obligations. These have been imposed by Ofcom where BT has been found to have Significant Market Power in a relevant market. These include obligations relating to accounting separation and cost accounting and include requirements to produce and publish annual Regulatory Financial Statements and to maintain and publish certain accounting documents setting out how BT prepares those statements.

3.3 The accounting documents include a document that sets out the methodologies used by BT to attribute its costs to prepare the Regulatory Financial Statements (the Detailed Attribution Methods document, or the DAM).

3.4 Amongst other things, the DAM describes the costing principles used by BT to prepare the Regulatory Financial Statements on a fully allocated cost basis, the methods used in the accounting separation process to attribute revenue, costs and capital employed in the Regulatory Financial Statements and outline the systems and processes used by BT to support accounting separation.

3.5 The systems used by BT to produce regulatory financial reporting information have been developed over time. Until recently, BT used an accounting separation system known as "ASPIRE" to derive its fully allocated costs. The 2013/14 Regulatory Financial Statements were prepared using ASPIRE.

3.6 ASPIRE produced fully allocated costs according to the regulatory financial reporting structure of markets, services, products and components. It did this by collating and attributing costs, revenues, assets and liabilities. ASPIRE was dependent on numerous other systems which provide financial input data and data for allocation bases. It also comprised off-line models which are used for various regulatory purposes including the production of apportionment bases, CCA valuation estimates and geographic market data splits, the requirement for which has arisen since the original structuring of the system.

3.7 BT has since replaced the ASPIRE system with a new system (which it calls REFINE). BT has explained that the 2014/15 Regulatory Financial Statements will be prepared using the REFINE system.

3.8 In the Regulatory Financial Reporting Decision, we explained that the move from ASPIRE to REFINE should not result in material changes in the reported numbers (for example, as a result of changes in the way some of the costs are allocated).[8]

[8] Regulatory Financial Reporting Decision, page 96, paragraph 6.7

3.9 We therefore required BT to produce and publish a systems reconciliation statement to set out the differences between the two systems and provide an explanation of the material differences.

3.10 BT published this report in December 2014.[9] Based on this report, we are satisfied that BT continues to allocate costs on the same basis in REFINE as it did in ASPIRE.

BT's cost attribution system

3.11 BT uses different levels of cost processing within its system whereby within each level a particular category of costs will be fully attributed to other cost categories. This creates a cascade model of costs being fully attributed to cost categories at each stage of the system. Ultimately this leads to all costs, revenues, assets and liabilities being fully attributed to Services and Markets.

3.12 BT uses five main categories of cost:

- **F8/OUC[10]:** Includes costs and asset values from the general ledger. There are approximately 28,000 general ledger codes.
- **Activity Groups (AG):** Includes costs and asset values of support functions (e.g. Duct, Motor Vehicles, Group Property and Facilities Management). There are approximately 30 Activity Groups.
- **Plant Groups (PG):** Includes costs and asset values of activities, equipment and infrastructure for the purposes of running and selling network services (e.g. Provision and maintenance activities, MSAN equipment, Copper infrastructure). There are approximately 260 Plant Groups.
- **Network Components:** Includes costs and asset values representing discrete parts of BT's Network (e.g. MDF Equipment, Access Fibre Spine and ISDN30 Connections). Costs within these network components are attributed to various Services. There are approximately 275 Network Components and 540 Services.
- **Retail Residual:** Includes cost and asset values not related to the supply of Network Services within the UK, as well as costs for services attributable to BT Retail (e.g. Bad debts, Derivatives Financial Instruments).[11]

3.13 Costs (as well as revenues, assets and liabilities) from the General Ledger are attributed via a cascade from one level to the next. Costs are fully attributed through this cascade to cost categories at the next (lower) stage of the system. This leads to all costs (revenues, assets and liabilities) being fully attributed to BT's services and markets.

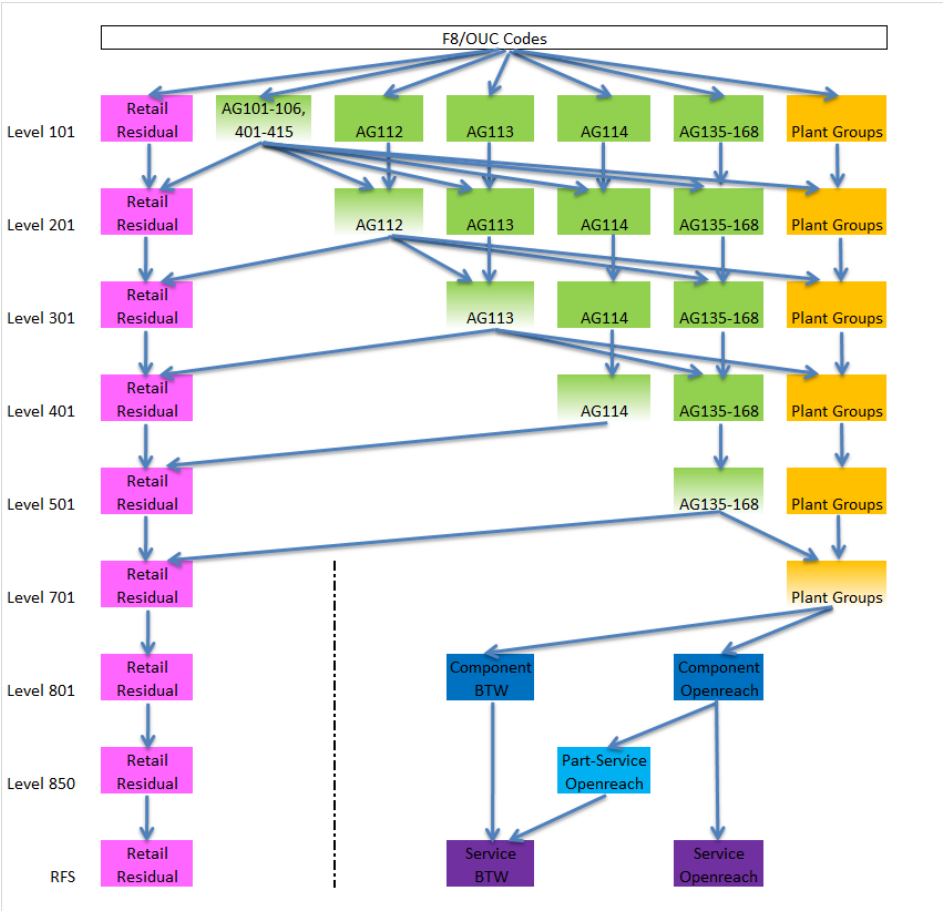
3.14 BT calls this process of 'emptying' costs into different cost categories through a cascade the 'exhaustion' process. Figure 3.1 provides a simplified representation of BT's cost attribution system.

[9] Systems Reconciliation Report for changes to BT's Regulatory Accounting System 2014 http://www.btplc.com/Thegroup/RegulatoryandPublicaffairs/Financialstatements/2014/SystemReconciliationReport22December2014.pdf

[10] Organisational Unit Code. A code that represents a unit within BT's organisation.

[11] Cartesian, Cost Attribution Review, section 2.2

Figure 3.1. Levels in BT's Cost Attribution process



3.15 The figure shows that BT's cost attribution process can be summarised in five stages, as follows:

- First, similar General Ledger cost items are grouped into cost categories (called "F8/OUC" combinations);
- These F8/OUC costs are then attributed to three new cost categories; Activity Groups, Plant Groups and Retail Residual;
- Activity Groups are then exhausted into Plant Groups, Wholesale Residual and Retail Residual Markets in various levels;
- Costs within Plant Groups (including the costs attributed from the Activity Groups) are then attributed to Network Components; and
- Finally, Network Component costs are attributed to Services and Markets based on a set of usage and volume factors.

3.16 The arrows represent the attribution methodologies used to empty the costs at each stage of the process. One line might represent multiple methodologies.

3.17 Services and part services are costs relating to groups of components as sold by BT and Openreach to other CPs for the provision of Network Services. Costs or assets

attributed to Retail Residual are not reattributed back into Network Services. Conversely once costs or asset have been attributed into a Plant Group these will not be reattributed out of Network Services.

Section 4

Scope and approach

Introduction

4.1 In this section, we explain the scope of the work which we have undertaken, how we have worked with our consultants, and the framework of our analysis.

Scope of review

4.2 Given the scale and complexity of BT's cost attribution system, we set out, first, to understand in detail how BT's costs are captured and attributed, the key attribution methodologies and their impact on the reported costs of regulated services. Next, we considered whether the attribution rules were appropriate.

4.3 To do so, we had to find a balance between the need to get adequate coverage of BT's cost base (at a regulated market level as well as in total) and the need to limit the number of cost categories to a manageable and proportionate level.

4.4 With this in mind, we instructed Cartesian to ensure that their review covered cost categories that provided approximately 90% coverage of costs across all regulated markets.

4.5 In order to achieve that, we considered that we should look at the following parts of BT's cost attribution system:

- select cost categories at plant group level that represented 90% of the overall CCA cost in BT's Regulatory Financial Statements;
- add any Plant Group not included in the top-90% list that relates to the following areas that we identified as priorities, as follows: General Overheads; Duct; Fibre; Copper; Property; 21CN Components and Next Generation Access.
- exclude onward allocations from any Plant Group that does not drive costs of regulated services.

4.6 Cartesian explain in their report that it considers that this selection methodology provides a good balance between cost coverage across all regulated markets and the number of cost categories to be analysed and covers all regulated markets.

Cartesian's role and engagement with BT

4.7 In order to assist us in our work, we instructed consultants, Cartesian. Specifically, we asked Cartesian to:

- Provide an overview of BT's cost attribution system;
- Identify the cost categories and attribution rules that account for a significant proportion of the costs allocated to regulated services;
- Explain how those costs are attributed in BT's cost attribution system; and

- Consider whether the attribution bases comply with a set of criteria provided by us (which we comment on below).

4.8 Cartesian's work is captured in a report which is published alongside this consultation.

4.9 We have also engaged extensively with BT, both on an informal basis, and through formal information requests under section 135 of the Communications Act. We have also considered information that BT is required to provide as a result of Regulatory Financial Reporting obligations including that published in its Regulatory Financial Statements and reconciliation reports.

4.10 This document provides a factual account of BT's cost attribution system, how costs are allocated in that system, and the share of overall CCA costs of individual costs drivers. This account is based on Cartesian's review, description and analysis, however it has been verified for correctness and accuracy by BT.

4.11 This description is focussed on those rules and other aspects of BT's cost attribution system which we are concerned about. There are a large number of rules which are not discussed as part of this document but which we have considered in light of Cartesian's analysis and which we are not concerned about. For further detail in relation to those rules, stakeholders should refer to the Cartesian report.

4.12 We set out our concerns in Sections 7 to 11 of this document. In each case, we consider first the analysis undertaken by Cartesian, and then set out our assessment (including whether we agree or disagree with Cartesian). We also raise some additional concerns not flagged by Cartesian. For the avoidance of doubt, while our assessment is informed by the analysis undertaken by Cartesian, the views on BT's cost attribution system and proposals for changes are ours.

Framework for this review

4.13 As set out above, we set out to develop a detailed understanding of BT's cost attribution system and assess the most important cost attribution rules. However, in the course of our review we have also found issues which do not strictly relate to the rules by which BT attributes its cost: we have found errors, issues with sources of evidence and issues with documentation. We set out below how we have assessed each of these.

Cost attribution rules (Sections 8 and 9)

4.14 In considering BT's cost attribution rules, we undertook a two-stage process. In a first step, we considered whether BT's cost attribution rule was appropriate. If we considered that was not the case, we moved on to the second step in which we considered what alternative cost attribution rule BT should employ.

Considering whether a cost attribution rule is appropriate

4.15 To determine whether a cost attribution rule was appropriate, we considered that there are circumstances in which various ways of attributing costs may be appropriate, and there may be arguments for supporting each of these different ways of attributing costs. In addition, we also considered that BT remains responsible for the Regulatory Financial Statements and the cost accounting and accounting separation systems. We therefore rejected only those attribution rules which were *clearly* inappropriate. This, in turn, we assessed against the Regulatory Reporting

Principles, which BT is required to comply with under the SMP conditions imposed in in the Regulatory Reporting Framework Statement. The Regulatory Accounting Principles must be applied to all material items of revenue, costs, assets and liabilities in the Regulatory Financial Statements.

4.16 The Regulatory Accounting Principles are, in order of priority, as follows:

- **Completeness**:

  Regulatory Financial Reporting must encompass all revenues, costs, assets and liabilities of the Markets and Technical Areas, together with residual activities (including wholesale and retail).

- **Accuracy**:

  Regulatory Financial Reporting must maintain an adequate degree of accuracy, such that the information included in the Regulatory Financial Statements are free from material errors and double-counting. Materiality must be determined in accordance with the definition set out above.

- **Objectivity**:

  Each element of Regulatory Financial Reporting, so far as is possible, must take account of all the available financial and operational data that is relevant to that element.

  Where an element of Regulatory Financial Reporting is based on assumptions, those assumptions must be justified and supported by all available relevant empirical data. The assumptions must not be formulated in a manner which unfairly benefits BT or any other operator or entity, or creates undue bias towards any part of BT's or any other operator's business or product.

- **Consistency with regulatory decisions**:

  Regulatory Financial Reporting must be consistent with our regulatory decisions as set out in the Regulatory Accounting Guidelines.

- **Causality**:

  Regulatory Financial Reporting must ensure that:

  a) revenues (including revenues resulting from transfer charges);
  b) costs (including costs resulting from transfer charges);
  c) assets; and
  d) liabilities

  are attributed in accordance with the activities which cause the revenues to be earned, or costs to be incurred, or the assets to be acquired, or liabilities to be incurred respectively.

- **Compliance with statutory accounting standards**:

  Regulatory Financial Reporting must comply with the accounting standards applied in BT's statutory accounts; with the exception of any departures as

OFCOM may direct from time to time (including in the Regulatory Accounting Guidelines).

- **Consistency of the Regulatory Financial Statements as a whole and from one period to another**:

  Regulatory Financial Reporting must be applied consistently in all the Regulatory Financial Statements relating to the same period.

  Regulatory Financial Reporting must be applied consistently from one period to another.

  All the changes in Regulatory Financial Reporting from one period to another must be justified by reference to the Regulatory Accounting Guidelines and the Regulatory Accounting Principles.

  If there are material changes in Regulatory Financial Reporting from one period to another, BT must restate the previous period's Regulatory Financial Statements, applying the changes to the Regulatory Financial Statements for that period.

4.17 In assessing BT's cost attribution rules, we have primarily been concerned with the *causality* of the attribution rules.[12]

Considering an alternative cost attribution rule

4.18 Where we determined that a cost attribution rule was clearly inappropriate, we considered which cost attribution rule should be implemented instead. The answer to that question is not always straightforward. In this document, we propose alternative cost attribution rules were possible, although for certain attributions we need to consider this further.

4.19 Our views on BT's cost allocation rules and our alternative proposals are subject to consultation.

Errors (Section 7)

4.20 The Regulatory Accounting Principle of *accuracy* requires that Regulatory Financial Statements are free from material errors and double-counting. In the course of our review of BT's cost attribution rules, we identified two types of errors: mathematical or input erros in spreadsheets and supporting calculations, as well as allocation errors. Allocation errors are errors where costs have been allocated incorrectly, i.e. where costs have been incorrectly allocated to services or parts of the business to which they do not relate or where they are not allocated to services or parts of the business to which they do relate.

4.21 Where we have identified such errors, we have highlighted these errors to BT, and BT has confirmed that such errors will be corrected in the 2014/15 Regulatory Financial Statements.

[12] We note that the principle consistency with regulatory decisions takes precedence over the principle of causality. The specific requirements for consistency are currently limited (as reflected in the direction published at Annex 2 of the statement "Directions for regulatory financial reporting" of 30 March 2015) but where relevant such consistency requirements have been highlighted in the relevant section.

Evidence (Section 10)

4.22 The Regulatory Accounting Principle of *objectivity* requires that each element of Regulatory Financial Reporting, so far as is possible, must take account of all the available financial and operational data that is relevant to that element. Also, where an element of Regulatory Financial Reporting is based on assumptions, those assumptions must be justified and supported by all available relevant empirical data. The assumptions must not be formulated in a manner which unfairly benefits BT or any other operator or entity, or creates undue bias towards any part of BT's or any other operator's business or product.

4.23 The Regulatory Accounting Principle of *accuracy* requires that each element of the Regulatory Financial Reporting must maintain an adequate degree of accuracy, such that the information included in the Regulatory Financial Statements is free from material errors and double-counting.

4.24 In undertaking this review, we have found that in some cases BT may not be using the most objective and accurate source of data. It has also become apparent that some supporting data and calculations (such as Excel spreadsheets) that generate apportionments to be input into the cost attribution system are difficult to review and potentially not fit for purpose.

4.25 Where we have identified such issues, we expect BT to take the necessary steps to address these concerns.

Documentation (Section 11)

4.26 Under the Regulatory Accounting SMP conditions which apply to BT, BT is required to maintain and publish documentation which sets out a description of BT's cost attribution rules. This documentation needs to be *transparent* and seeks to ensure that a suitably informed reader can obtain a clear understanding of such rules[13]. BT also has an obligation to maintain sufficient accounting records.

4.27 In undertaking this review, it has become apparent that some explanatory documentation that sets out how the cost attribution system works (including, for example, the Detailed Attribution Methodology) are unclear and not sufficiently transparent. We also consider that some of the explanatory documentation appears inaccurate or inconsistent.

4.28 We have highlighted these instances in this document, and expect BT to address this for the Accounting Methodology Documents to be published in July 2015.

Question 4.1: Do you have any comments on the scope and approach to this review? Specifically, do you agree with our decision to determine whether BT's attribution methodologies were clearly inappropriate by reference to the Regulatory Accounting Principles?

[13] The requirement for transparency was reformulated as part of the 2014 Regulatory Financial Reporting review so that such documentation no longer needs to provide a "detailed" understanding of the rules.

Section 5

Cost attribution in 2013/14

Introduction

5.1 The purpose of this section is to help stakeholders identify the significant cost categories and attribution methodologies by reference to the markets that receive a share of those costs.

Background

5.2 In this section, we aggregate costs into larger groups of costs, or "cost groups". The cost groups identified are general overheads; duct; fibre; copper; property; 21CN components; Next Generation Access and other.

5.3 For each cost group, we provide a breakdown of total costs by the markets they are allocated to, and, for each market, we provide a breakdown of the total costs by cost group. For each of the cost groups identified above, we also provide a breakdown of the cost into smaller sub groups.

Breakdown of cost groups by market

5.4 Table 5.1 shows how each of the cost groups is shared across different markets. It shows, for example, that 95% of copper costs (which includes D and E side copper and drop wires) are allocated to the Fixed Access markets, while only 37% of property costs go to these markets.

Table 5.1: Attribution of 2013/14 costs to markets[14]

	Copper	General Overheads	Duct	Property	21CN	Fibre	NGA	Other	Out of Scope
Fixed Access Market	95%	38%	71%	37%	1%	7%	-	25%	22%
Wholesale Residual	5%	41%	5%	25%	70%	20%	100%	56%	42%
Business Connectivity Market	0%	14%	19%	13%	8%	71%	-	11%	25%
Wholesale Broadband Access Market	0%	5%	3%	11%	18%	1%	-	5%	4%
Narrowband Market	0%	2%	2%	14%	3%	1%	-	4%	7%
Total FAC (%) of Cost Group	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**

Breakdown of market costs by cost group

5.5 The following tables provide a breakdown of the total costs incurred in 2013/14 attributed from each cost group to individual SMP markets. The tables show, for

[14] Out of scope costs refer to those not included within the 90% of costs covered by this review.

example, that copper represents a significant proportion of the cost attributed to the Fixed Access markets (46% of the total cost stack in the case of Wholesale Line Rentals) while property costs are less significant (7% of the cost stack).

5.6 Table 5.2 shows the breakdown of total costs attributed to Fixed Access markets, by cost group.

Table 5.2: Breakdown of costs attributed to Fixed Access Markets

	Wholesale Line Rentals	Local Loop Unbundling	Wholesale ISDN30 Lines	Wholesale ISDN2 Lines
Copper	46%	38%	3%	36%
Duct	21%	15%	10%	16%
General Overheads	10%	11%	11%	9%
Property	7%	8%	14%	13%
Fibre	0%	0%	14%	0%
21CN	0%	0%	1%	0%
Other	14%	23%	15%	13%
Out of Scope	3%	5%	31%	11%
Grand Total	**100%**	**100%**	**100%**	**100%**

5.7 Table 5.3 shows the breakdown of total costs attributed to Business Connectivity markets, by cost group.

Table 5.3: Breakdown of costs attributed to Business Connectivity markets

	AISBO Non-WECLA	TISBO (up to and including 8 Mbps)	MISBO Non-WECLA	AISBO WECLA	TISBO (above 45 Mbps up to and including 155 Mbps)	TISBO (above 8 Mbps up to and including 45 Mbps)	Wholesale Regional Trunk Segments	Point of Handover
Copper	0%	1%	0%	0%	0%	0%	0%	0%
Duct	20%	13%	9%	8%	23%	20%	35%	6%
General Overheads	12%	14%	11%	12%	14%	13%	13%	12%
Property	3%	19%	3%	3%	19%	18%	21%	11%
Fibre	20%	7%	7%	13%	3%	6%	6%	15%
21CN	4%	0%	7%	5%	0%	0%	0%	0%
Other	31%	13%	56%	44%	18%	14%	14%	11%
Out of Scope	10%	34%	7%	14%	22%	28%	12%	44%
Grand Total	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**

5.8 Table 5.4 shows the breakdown of total costs attributed to Narrowband markets, by cost group.

Table 5.4: Breakdown of costs attributed to Narrowband markets

	Calls: Call Origination	Calls: Call Termination	Interconnect Circuits
Duct	5%	6%	6%
General Overheads	7%	6%	11%
Property	35%	37%	26%
Fibre	0%	0%	1%
21CN	4%	4%	0%
Other	32%	29%	27%
Out of Scope	17%	16%	29%
Grand Total	**100%**	**100%**	**100%**

5.9 Table 5.5 shows the breakdown of total costs attributed to Wholesale Broadband Access markets, by cost group.[15]

Table 5.5: Breakdown of costs attributed to Wholesale Broadband Access markets

	Wholesale Broadband Access - Mkt 1	Wholesale Broadband Access - Mkt 2
Duct	5%	2%
General Overheads	9%	10%
Property	16%	11%
Fibre	1%	0%
21CN	10%	15%
EOI-Costs	28%	41%
Other	25%	16%
Out of Scope	6%	5%
Grand Total	**100%**	**100%**

5.10 Table 5.6 shows the breakdown of total costs attributed to Wholesale Residual markets, by cost group. Wholesale Broadband Access markets consist of mainly Property and 21CN costs

[15] Equivalence of Inputs (EOI) cost and revenues denote internal trades for regulated services supplied by Openreach to other divisions within BT

Table 5.6: Breakdown of costs attributed to Wholesale Residual markets

	Wholesale Residual
Copper	3%
Duct	2%
General Overheads	15%
Property	7%
Fibre	2%
21CN	9%
NGA	5%
EOI Revenue	-6%
Other	51%
Out of Scope	12%
Grand Total	**100%**

Breakdown of each cost group into Cost Categories

5.11 For each of the cost group identified above, we provide a breakdown of the cost into smaller cost categories and, for each cost category provide a reference to the paragraphs in the Cartesian report that provide an explanation of: how costs are attributed into that cost category (i.e. from the general ledger down); and how costs in that group are allocated onwards towards cost components and services.

Copper

5.12 This cost group includes the costs of installing and maintaining the Copper in BTs network. Costs include depreciation, copper costs and maintenance.

Table 5.7: Copper disaggregated by cost category

	Description	Reference in Cartesian report	FAC (%)
E-Side Copper Cable	Copper cables deployed in the E-side segment of the access network	5.7.5	8%
E-Side Maintenance	Operational costs relating to the maintenance of copper cables in the E-side	5.7.6	4%
E-Side Intra-exchange Tie Cables	Tie cables deployed within BT's exchanges used to connect CPs equipment	5.7.7	3%
E-Side FTTC Copper Tie Cables	Copper tie cables used to connect fibre and copper street cabinets in FTTC deployments	5.7.8	1%
D-side Copper Cable	Copper cables deployed in the D-side segment of the access network	5.7.10	41%
D-side Maintenance	Operational costs relating to the maintenance of copper cables in the D-side	5.7.11	13%
Drop wires	Copper lines between the distribution point (DP) and the customer premises	5.7.13	26%
Drop wire Maintenance	Costs related with the maintenance of the residential drop wires	5.7.14	5%
Total			**100%**

Duct

5.13 This cost group includes the costs of building and maintaining BT's nationwide duct network. Costs include depreciation and maintenance.

Table 5.8: Duct by disaggregated by cost category

	Description	Reference in Cartesian report	FAC (%)
Access Duct	Costs of Access Duct assets and activities	5.4.4	79%
Backhaul Duct	Costs of Backhaul Duct assets and activities	5.4.5	16%
Core Duct	Costs of Core Duct assets and activities	5.4.6	5%
Total			**100%**

General Overheads

5.14 This cost group includes management costs incurred in overseeing BT Group operations.

Table 5.9: General Overheads disaggregated by cost category

	Description	Reference in Cartesian report	FAC (%)
Corporate Costs	Group Headquarters	5.3.4	58%
TSO support functions	TSO Finance, HR and Strategy	5.3.5	11%
Pay drivers	Created to attribute shared costs on the basis of pay	5.3.6	15%
SG&A	BT Wholesale groups that include asset depreciation costs, subcontract costs and general management costs	5.3.7	17%
Total			**100%**

Property

5.15 This cost group includes costs related to the utilisation and management of all of BT's leased property as well as the ownership and rationalisation of BT's retained property assets (except motor vehicle buildings). Costs include rent, electricity, depreciation, and facilities management.

Table 5.9: Property disaggregated by cost category

	Description	Reference in Cartesian report	FAC (%)
Group Property and Facilities Management	Costs from BT Group Property, BT TSO and BT Corporate Services	5.6.4	95%
Property Asset Driver	Costs of BT retained property	5.6.5	7%
Property Provision Driver	Cost of early termination of leases on office buildings	5.6.6	-2%
Total			**100%**

Fibre

5.16 This cost group includes the costs of installing and maintaining the Fibre in BTs network. It includes all Fibre in the Core, backhaul and access networks, including the new Fibre deployed as part of the superfast Broadband roll out.

Table 5.10: Fibre disaggregated by cost category

	Description	Reference in Cartesian report	FAC (%)
Non-NGA Access Fibre	Fibre deployed in access network that is not used by next generation access (NGA) products	5.5.3	77%
NGA Access Fibre	Fibre on BT's next generation access (NGA) network	5.5.7	15%
20C Core Fibre	Fibre deployed in BT's 20C core network	5.5.11	4%
20C Backhaul Fibre	Fibre deployed in BT's 20C backhaul network	5.5.10	4%
Total			**100%**

21CN Components

5.17 This cost group includes the costs of equipment and activities in BT's next-generation network. The costs relate to the equipment used to deliver the service and not the duct and fibre.

Table 5.11: 21CN Components disaggregated by sub group

	Description	Reference in Cartesian report	FAC (%)
Metro Nodes	Costs for P Routers, Edge Routers and Metro Servers	5.8.4	28%
MSAN	Multi-Service Access Node costs relating to copper and fibre access equipment	5.8.5	24%
21CN Links	Costs for transmission electronics to connect 21C network locations	5.8.6	22%
Ethernet Switches	Costs for Ethernet Switches and the Customer Access Cards	5.8.7	22%
iNode	Costs for functionality within iNode to setup voice calls and manage network features	5.8.8	4%
Total			**100%**

Next Generation Access

5.18 This cost group includes costs relating to NGA equipment (hardware) as well as pay related costs for provisioning and installation, maintenance and repair and replacement of equipment.

Table 5.12: NGA disaggregated by cost category

	Description	Reference in Cartesian report	FAC (%)
GEA DSLAM & Cabinets	Costs of NGA Equipment such as DSLAM cabinets	5.9.4	61%
GEA Electronics	Costs for the provision, recovery, replacement and renewal of NGA equipment	5.9.5	35%
NGA Maintenance	Costs for the maintenance of NGA equipment	5.9.6	4%
Total			**100%**

Other

5.19 This cost group includes sub groups within the scope of the study that lie outside the cost groups described above. For example,

- TSO Operational costs include IT, Switches and Transmission kit used for the TSO network management function which cannot be directly attributed to a single BT business unit;
- Vehicles costs include the cost of running, maintaining and replacing the vehicle fleet. It also includes the property costs for the garages.
- Exchange overheads equipment contains costs for the air conditioning units and back-up power equipment.

Table 5.13: Other items disaggregated by cost sub group

	Description	Reference in Cartesian report	FAC (%)
Vehicles	Cost of the use of motor vehicles by all the BT units	5.10.4	7%
Systems	cost of systems required to manage BT's IP network	5.10.5	2%
20C Voice Equipment	costs relating to System X and AXE10 voice switches	5.10.6	4%
IP Network	Includes equipment such as Broadband Access Routers, Remote Authentication Servers (RAS) and Gigabit Routers	5.10.7	3%
Ethernet Access Equipment	costs relating to Short Haul Data Service (SHDS) equipment	5.10.8	7%
Exchange Overhead Equipment	Specialised Accommodation Equipment and Back-up Power Equipment	5.10.9	13%
Co-Mingling, DSLAM Support & MDF	Costs for LLU co-mingling, maintenance costs for DSLAMs and MDF costs	5.10.10	3%
TSO Operational Costs	Costs for the TSO network management function	5.10.11	19%
MDF Hardware Jumpering	Costs for MDF connecting the Exchange switch equipment to E-side cable	5.10.12	8%
Openreach Provisioning Service Centre	Costs incurred for the order handling of WLR/ISDN, LLU, Ethernet and NGA	5.10.13	6%
TRC and SFI	Time spent on planned and unplanned chargeable engineering jobs	5.10.14	6%
Openreach Product Development	Development of Openreach products and services	5.10.15	6%
Miscellaneous		5.10.16	16%
Total			**100%**

Section 6

Issues considered in this review

Introduction

6.1 In this section, we list the issues identified by Cartesian and identify some further issues that we have identified during our work on BT's regulatory financial information. We then set out where we consider them in more detail later in this document.

Background

6.2 As explained in Section 4, we asked Cartesian to assess BT's cost attribution methodologies against the Regulatory Accounting Principles.

6.3 Cartesian concluded that it "is satisfied that BT's cost allocation system is free from bias. However there are areas of weakness that BT could improve on. This is perhaps unsurprising given the scale and complexity of BT's cost allocation system."[16]

6.4 In its report, Cartesian explains that its assessment of BT's cost attribution methodologies against the Regulatory Accounting Principles identified "a large number of concerns", although it noted that "the majority of these concerns do not have a material impact on cost attribution." [17]

6.5 We summarise these concerns below and explain where we address them in this document.

6.6 We have identified issues in four categories:

- **Errors**. We have identified mathematical or input errors in spreadsheets and supporting calculations as well as allocation errors where costs have been allocated incorrectly (for example where costs have been allocated to a service that is not delivered using those costs).

- **Inappropriate attribution methodologies.** We have identified some attribution methodologies that we do not consider comply with the Regulatory Accounting Principles. We have also identified some other attribution methodologies that we consider need further investigation. As set out in Section 9, we seek stakeholders' views on these methodologies and may return to these in a second consultation if we decide that the current rules are not appropriate, but at this stage we have not attempted to quantify the possible impact of any change to the current rules.

- **Deficient supporting evidence**. In some areas, it appears that the supporting evidence used by BT to inform its cost attribution calculations may not be the most objective or accurate source of data. We also consider that some supporting data and calculations (such as Excel spreadsheets) that generate

[16] Cartesian, Cost Attribution Review, Executive Summary
[17] Cartesian, Cost Attribution Review, Executive Summary

apportionments to be input into the cost attribution system are difficult to review and potentially not fit for purpose.

- **Inadequate documentation**. In undertaking this review, it has become apparent that some explanatory documentation that explains how the cost attribution system works (including, for example, the DAM) are unclear and not sufficiently transparent. We also consider that some of the explanatory documentation appears inaccurate or inconsistent.

6.7 Cartesian sets out its assessment of BT's cost attribution methodologies against the Regulatory Accounting principles in Section 6 of its report. It concludes that:

> "Our overall findings from the evaluation of the attribution methodologies are as follows:
>
> Many of the methodologies do not fully comply with the RAP
>
> Cartesian has concerns regarding compliance of some methodologies against the principles of accuracy, objectivity, consistency and/or causality
>
> The majority of the concerns we have identified do not have a material impact on attributed costs; however, the study identified a handful of errors which cause either cost to be incorrectly attributed to regulated markets, or incorrectly apportioned between regulated markets
>
> We do not believe that the system is inherently biased in favour of BT
>
> We do, however, believe that BT could improve the overall quality of cost attribution in the Regulatory Financial Statements".[18]

6.8 Cartesian list their concerns in table 277 of their report. Cartesian estimated the possible impact of the identified issues (based on their possible impact of the issue on the costs attributed to regulated services) in tables 278 and 279. However, since these estimates were made, we have conducted further work on the possible impacts, which we return to in Sections 7 and 8 of this document and therefore do not include Cartesian's original estimates here.

6.9 Table 6.1 lists the issues included in Cartesian's table 277 in the order raised by Cartesian and sets out where we deal with the issues in this document.

[18] Cartesian, Cost Attribution Review, Section 6.1.1

Table 6.1: Issues identified by Cartesian

Methodology	RAP Compliance Concerns		Category
Duct Valuation	Accuracy	In the Duct model provided by BT, CCA indexing is not applied to the 1996/97 GRC or to Capex spent since the time of the study	Section 7 (Errors), Section 9 (Other methods) and Section 10 (Evidence)
	Causality	D-side Duct costs should be allocated to AG135 instead of being apportioned using PDTDUCT	
	Consistency of RFS	Duct costs are apportioned between core and backhaul based on the number of live circuits as opposed to fibre length	
Profit Weighted Net Replacement Cost (PWNRC)	Objectivity	The approach used to identify NGA assets is not transparent	Section 9 (Other methods) and Section 11 (Documentation)
	Causality	Cumulo rebate are attributed to non-core assets	
		This is not causal with the rationale used by BT to attribute rebates: distribution fibre is not a core asset	
	Consistency of RFS	The methodology is not consistent with the approach taken for attributing Cumulo rates to non-NGA assets	
NGA Duct Depreciation	Accuracy	There are concerns regarding accuracy, as the methodology relies on manual categorisation. This manual inspection and decision process may introduce human error	Section 7 (Errors)
	Objectivity	Costs are attributed to unrelated cost categories	
	Causality	Costs for E-Side duct are attributed using two different methodologies; Cable depreciation for NGA and Duct valuations for non-NGA	
E-Side Copper Cable Depreciation	Accuracy	The accuracy of this method may be exposed to the risk of human error	Section 11 (Documentation)
	Objectivity	The methodology is not transparent as the calculation of depreciation for FTTC Tie cables (PG192A) is not described in the DAM nor in the excel models	
Special Fault Investigation (SFI) and Openreach Time Related Charges (TRC) equivalent cost	No Concerns	No Concerns	Section 11 (Documentation)
Fibre Length	Objectivity	The methodologies apportion cost of the construction of optical/metallic junction cables. However, they are actually referring to backhaul and core network fibre cables. Junction is an old term used within BT but which now refers to backhaul and core network fibre	Section 11 (Documentation)
	Consistency of RFS	The methodology is not consistent with the approach for apportioning duct costs	
Fibre Gross Replacement Cost (GRC)	Accuracy	In the fibre GRC model, there is a large (unexplained) reduction in the NGA spine volumes between 2012/13 and 2013/14 leading to accuracy concerns	Section 9 (Other methods)
	Causality	The costs are apportioned on the basis of GRC. This does appear to be a causal approach	
	Consistency of RFS	BT uses a variety of approaches: GRC is used to access fibre costs between non-NGA and NGA; Fibre Length is used to backhaul and core fibre in 20C and 21C networks; and current year fibre depreciation is used to attribute associated duct costs between NGA and non-NGA fibre	
Openreach Common Costs (COMCOS)	Objectivity	The methodology is not objective as it uses an arbitrary weighting factor. A WACC of 10.8% is used to effectively weight the importance of pay and asset values in the apportionment	Section 8 (Pay and RoA)
	Causality	Allocating a broad pool of common costs on the basis of Pay and RoA does not appear causal. The time and effort required to manage assets may not correlate with the value of the assets	
Data Centre Budgeted Data	Objectivity	The methodology is not fully transparent as it is based on management negotiations and internal business unit models	Section 11 (Documentation)
TSO Billing System	Accuracy	The accuracy of the methodology is reliant on manual attributions. As the EXCEPT base methodologies are manually configured within ASPIRE (annually) to determine the destination cost categories, there is a risk of human error that may result in incorrect attribution and destinations being defined	Section 9 (Other methods), Section 10 (Evidence and
	Causality	There are concerns over this methodology fully	Section

		satisfying the Causality principle. This is because particular EXCEPT base methodology uses more than one attribution approaches	11(Documentation)
	Consistency of RFS	BT uses two methods for direct cost allocation, raising concerns over consistency. It is not clear why BT attributes some costs directly to activity groups using an EXCEPT base methodology as opposed to directly allocating costs from F8/OUC to Level 1	
Floor Space Utilisation	Accuracy	Attribution methodology of vacant space costs in Openreach Operational buildings may not be attributing costs to the right categories	Section 9 (Other methods)
	Causality	Attributing all of vacant Operational building space to Openreach may not be causal	
Power Consumption for TSO	Accuracy	BT TSO Electricity model appears to contain mathematical errors in the calculation of total power consumption of CWSS and DWSS	Section 7 (Errors), Section 9 (Other methods) and Section 10 (Evidence)
	Objectivity	In 2013/14 BT excluded certain programmes from the cost analysis e.g. TV. Retrospectively BT has recognised that this was not the right decision	
Power Consumption for Openreach	Objectivity	BT does not appear to use energy consumption data for different equipment within the Openreach estate to determine a fair attribution weight between different elements of Openreach's network	Section 9 (Other methods)
	Causality	Using cost allocation of 'Property' to reflect electricity consumption does not appear to be a causal methodology	
	Consistency of RFS	The methodology (and approach) used by BT to attribute electricity charges for TSO and Openreach is not consistent	
Managed Services Contract Value	Objectivity	The DAM fails to properly explain BT's methodology to determine the split of contract costs between regulated and un-regulated markets	Section 11 (Documentation)
Vendor Contract Value	Causality	Since the cost of contracts relate to 'support' activities, only the CoW relating to support activities should be used to attribute costs as opposed to using all CoWs	Section 10 (Evidence)
Asset Policy	Consistency of RFS	This methodology risks attribution of similar types of costs in an inconsistent manner	Section 10 (Evidence)
Depreciation for 21CN	Accuracy	The complicated and organic nature of the 21CN Excel Model raises concerns around the likelihood of errors and difficulty BT would have in discovering errors through model audit	Section 9 (Other methods) and Section 10 (Evidence)
		During Cartesian's review of the model we uncovered at least one apparent coding error	
	Objectivity	Apportionment of costs in next-generation networks (NGNs) presents challenges regarding objectivity, transparency and causality. This is due to one of the major technical advantages inherent NGNs	
	Compliance with Regulatory Decisions	BT has identified eight components in the 21CN network that attribute costs to regulated services on the basis of 'future benefits'	
Software Depreciation	Objectivity	The approach taken by BT to determine attribution weights involves combining the depreciation amounts of software assets before splitting them out again, as opposed to direct allocations	Section 9 (Other methods)
	Consistency of RFS	The SOFTDEP model attributes costs for all of BT's main divisions except TSO. From a consistency perspective it will be good to have TSO software costs also attributed using the SOFTDEP base	
Activity Group and Plant Group Attributions			
Duct Valuation and Cable Depreciation	Accuracy	The duct valuation model used to determine the split between copper duct and fibre duct doesn't appear to take into account the addition or removal of cables in the duct	Section 7 (Errors), Section 9 (Other methods), Section 10 (Evidence) and Section 11 (Documentation)
	Objectivity	The methodology described in the DAM isn't entirely accurate, hence transparency concerns	
	Causality	A small proportion of access duct cost is apportioned to Intra-Exchange Tie Cables (PG130A). The reason for this is unclear and it may be an error	
	Consistency of RFS	Apportionment of access duct cost uses cable depreciation (of copper and fibre) as an input. In contrast, apportionment of access fibre costs is based on fibre GRC (see Section 6.2.8)	

Number of Fibres Used	Accuracy	The Access Rentals model contains a number of input errors in the parameters for bearer capacities by circuit type	Section 7 (Errors) and Section 10 (Evidence)
	Objectivity	The CTCS model calculations are not transparent. The calculations involve a relatively high number of steps with variables coming from several different sources which makes it difficult to follow	
	Causality	There may be a causality issue in the treatment of unused fibre. The cost of unused fibre in the network is allocated equi-proportionally to services based on current fibre usage. However the unused fibre will be of greater benefit to growth services rather than legacy services that may be in decline	
Fibre Bandwidth and Length	Accuracy	The methodology is not accurate as there is an error in one the formulae in the model. BT agree that the formula is incorrect	Section 7 (Errors) and Section 10 (Evidence)
	Objectivity	The transparency of the network model could be improved. The model includes several redundant steps and could be simplified to mitigate potential human errors	
	Causality	The cost of unused fibre in the network is allocated equi-proportionally to services based on current fibre usage. However the unused fibre will be of greater benefit to growth services rather than legacy services that may be in decline	
Factorised Pay and Return on Assets	Objectivity	As the methodology uses factorised pay, the weights of attribution are skewed heavily towards the business unit that has more employees	Section 8 (Pay and RoA)
	Causality	Allocating a broad pool of common costs on the basis of Pay and RoA does not appear causal as the time and effort required to manage assets may not correlate with the value of the assets. We note, for example, that although BT's duct network has a high asset value (c.30% of total MCE) it is unlikely to demand 30% of head-office attention	
Pay and Return on Assets	Objectivity	The methodology is not objective as it uses an arbitrary weighting factor. A WACC of 10.8% is used to effectively weight the importance of pay and asset values in the apportionment	Section 8 (Pay and RoA)
	Causality	Allocating a broad pool of common costs on the basis of Pay and RoA does not appear causal as the time and effort required to manage assets may not correlate with the value of the assets	
Property Cost Apportionment	Accuracy	The treatment of costs related to early termination of leases on office buildings appears inaccurate. According to detailed data provide by BT, these costs are apportioned from AG414 based on transfer charges from BT Property related to both leased and BT retained office buildings	Section 7 (Errors) and Section 9 (Other methods)
	Objectivity	The unbalanced Transfer charges being attributed to AG106 raise transparency concerns as it is unclear whether this is in error or from a non-core unit	
	Consistency of RFS	The treatment of income from sale of property and provisions from early termination of lease of office space is inconsistent	
Network Component Attributions			
Fixed Access Market	Objectivity	Some usage factors are the product of more than one input, and there is little information on the source of the data	Section 11 (Documentation)
ISDN Services Usage Factor	Accuracy	Error in calculation of CL160 usage factor	Section 7 (Errors)
	Accuracy	Error in calculation of CL177 usage factor	Section 7 (Errors)
Miscellaneous Concerns			
Miscellaneous	Accuracy	There are concerns around the accuracy of identifying Operator Services Costs at BT	Section 7 (Errors), Section 9 (Other methods) and Section 10 (Evidence)
		In the cost allocation model there appears to be attribution of BT Retail Consumer costs to 21CN	
		Cartesian has identified that some Transfer Charges in BT's accounts do not balance. Cartesian understands that the unbalanced transfer charges relate to BT's non-core units, however Cartesian has concerns that as per the treatment of costs during BT's cost exhaustion process, leaving (positive) 'Transfer Charge	

		In' and excluding an offsetting (negative) 'Transfer Charge-Out' from a cost category will means that these transfer charges are turned into costs, leading to double counting	
	Compliance with Regulatory Decisions	Cost of phonebooks are attributed to regulatory markets	Section 7 (Errors)
	Consistency of RFS	Costs in AG102 and AG103 are allocated in different ways	Section 8 (Pay and RoA)
	Concerns Outside RAP	Revenue from sale of copper not offset against copper depreciation	Section 9 (Other methods)
		Service Level Guarantee (SLG) penalties are attributed to regulated markets	
		Light user scheme costs attributed to wholesale residual	

6.10 As well as the issues summarised above, Cartesian's report also includes its assessment of attribution methodologies where it had no concerns. We have reviewed Cartesian's conclusions and consider them to be reasonable. We therefore have not considered them further in this document.

Additional observations

6.11 In addition to the issues raised by Cartesian (Table 6.1), we have considered other issues that we have identified during our work on BT's regulatory financial information. We set these out in Table 6.2.

Table 6.2: Additional issues identified

Methodology	Concerns	Category
Facilities Management costs	Facilities management costs are erroneously allocated to Corporate Costs	Section 7 (Errors)
IP Network allocation	IP network costs omitted some investments on residual service	Section 7 (Errors)
Usage Factors for MSAN TDN cards	A usage factor of 0.25 should be used for the attribution to 34Mbit's services (since one MSAN card can support four 34Mbit/s services)	Section 7 (Errors)
Call Usage Factors	Incorrect calculation of Call usage factors	Section 7 (Errors)
Usage Factors for i-Node features	Usage factor should be 1.0	Section 7 (Errors)
NGA Duct Depreciation	Only in year capital expenditure was used for the calculation	Section 7 (Errors)
Direct Allocation	21CN Fibre plant groups can be associated with either core or backhaul networks (Fibre Length)	Section 7 (Errors)
Transfer Charges	There may be an additional mark-up of costs of transfers from non-core units	Section 9 (Other methodologies)

6.12 We also consider the structure of cost attribution system and whether there may be scope for future developments that might bring benefits for all stakeholders, in Section 12.

Question 6.1: Are there any specific issues that we do not identify in Section 6 that you consider should be reviewed further? If so, please identify those methodologies and explain why you consider the current methodology might not be appropriate.

Section 7

Correction of errors

Introduction

7.1 In this section we consider the issues identified by Cartesian that we have categorised as errors.

7.2 We define errors as being mathematical or input errors in spreadsheets and supporting calculations as well as attribution errors where costs have been attributed incorrectly (for example where costs have been attributed to a service that is not delivered using those costs).

7.3 BT has confirmed that these errors will be corrected in the 2014/15 Regulatory Financial Statements[19] and we note that some of them are included in the 2015 Change Control Notification.[20]

Background

7.4 Under the Regulatory Accounting Principle of Accuracy, BT's Regulatory Financial Reporting must maintain an adequate degree of accuracy, such that the information included in the Regulatory Financial Statements are free from material errors and double-counting.

7.5 During Cartesian's review of BT's cost attribution system a number of mathematical and input errors were identified as well as attribution errors. Mathematical and input errors were largely found in spreadsheets used by BT to calculate the attribution percentages which are then loaded into its cost attribution system (which in 2013/14 was ASPIRE).[21] Attribution errors occurred where costs had incorrectly been attributed to services or parts of the business to which they did not relate or where they were not attributed to services or parts of the business to which they did relate.

7.6 Cartesian says that during the course of the project it "identified numerous mathematical errors within the models provided by BT, as well as errors in the application of methodologies and configuration of systems with the correct usage factors."[22]

Potential impact of changes

7.7 In its report Cartesian attempted to quantify the impact of correcting some of the errors that it had identified.[23] However, Cartesian was unable to replicate BT's cost attribution model precisely so its impact estimates may not accurately reflect the

[19] Email from BT dated 4 June 2015
[20] "Change Control Notification in accordance with SMP Condition 21 of Ofcom's Regulatory Financial Reporting Final Statement published on 20 May 2014", 31 March 2015. http://www.btplc.com/Thegroup/RegulatoryandPublicaffairs/Financialstatements/2015/ChangeControlNotification-31March2015.pdf
[21] The 2014/15 Regulatory Financial Statements will be prepared using BT's new cost allocation system called REFINE.
[22] Cartesian, Cost Attribution Review, section 6.1.2.2
[23] Cartesian, Cost Attribution Review, Table 278 and Table 279

results that would be obtained if BT was to re-run its cost attribution model correcting for these errors. We therefore asked BT to estimate the impact of correcting these errors. We consider that BT is likely to be able to more accurately estimate the impact of correcting these errors since it is able to re-run its cost attribution model. Unless otherwise stated, in the discussion that follows we therefore present BT's estimates of the impact of correcting the errors rather than the impacts estimated by Cartesian.

Table 7.1: Impact of correcting errors, FAC, £m

	Fixed access	Business connectivity[24]	Narrow-band	WBA 1 and 2	Residual
1 Fibre Bandwidth & Length	(0.3)	2.5	(1.3)	(0.9)	0.2
2 Number of Fibres used	5.8	(5.5)	-	-	(0.3)
3 Direct Allocation (AG148 &AG149)	(0.2)	(6.4)	(0.9)	(0.9)	8.2
4 Transfer Charges	-	(6.1)	(4.0)	(3.0)	13.0
5 Other errors (x 13)	(9.9)	(3.4)	(0.8)	(0.5)	15.1
Total impact	**(4.6)**	**(18.9)**	**(7.0)**	**(5.3)**	**36.2**

Note: FAC has been estimated by adding CCA operating costs to an illustrative 10% return on MCE.

7.8 Table 7.1 shows the impact of correcting the errors identified during this review.

7.9 As explained in Annex 7 of the LLCC Consultation, the first four errors are taken into account in the 2013/14 base data used in the LLCC. All of the errors will be corrected by BT in the 2014/15 Regulatory Financial Statements and they will therefore be taken into account in the 2014/15 base data for the LLCC decision.

1 Fibre bandwidth and Length (Core and backhaul fibre attribution)

Background

7.10 BT attributes core and backhaul fibre costs from plant groups to cost components using a combination of bandwidth and fibre length.[25]

7.11 Most of the data on circuit volumes, bandwidth and fibre length needed to carry out the attribution comes from BT's Core Transmission Costing System (CTCS).[26] CTCS is BT's network inventory system which keeps records of all the circuits, cables and equipment deployed in its network. Data from CTCS is input into a spreadsheet ("New CTCS Model[27]") which is used to calculate the proportions used to attribute core and backhaul fibre costs from plant groups to cost components.

[24] The impact shown here relates to the Business Connectivity markets as reported in the 2013/14 Regulatory Financial Statements. It does not include the impact on any business connectivity services included in residual markets.
[25] Cartesian, Cost Attribution Review, section 6.3.4.
[26] Cartesian, Cost Attribution Review, section 6.3.4.3.
[27] The excel spreadsheet is called "051_BTW_PG_to_Comp (New CTCS)". We refer to this as the New CTCS Model.

Cartesian's assessment

7.12 Cartesian identified that there is a formula error in the New CTCS Model – the formula in a particular column did not cover all the relevant cells.[28]

Our assessment

7.13 We agree with Cartesian's assessment. BT has also confirmed that this is an error and that it will be corrected in the 2014/15 Regulatory Financial Statements.

Impact of correcting the error

7.14 BT estimated that the main market impact of correcting the error was to increase FAC in the AISBO non-WECLA market by around £9.4m and reduce FAC in the low bandwidth TISBO market by around £5.7m. FAC was affected by less than £1m in other individual markets.

2. Number of Fibres Used (Access Fibre Attribution)

Background

7.15 Access fibre costs are attributed from plant groups to components based on the number of fibres used by each circuit type in the access network (the Number of Fibres Used attribution methodology).[29]

7.16 Cartesian explain that BT uses an excel model ("Access Rentals model") to calculate the proportion of total fibre used by each circuit type based on volume data extracted from BT's systems. The proportions are then used to attribute access fibre costs in ASPIRE.[30]

Cartesian's assessment

7.17 Cartesian found that a number of mathematical and input errors were present in the Access Rentals model. [31] Reviewing the model, BT agreed that the following errors were present in this model:

- The number of fibres used per access bearer was incorrect because of an inconsistency between the number of bearers sourced from different BT systems.[32]
- Certain STM4 bearers were treated as if they were STM1 bearers.[33]
- Some bandwidth assumptions were inconsistent with the SDH hierarchy. For example, 34/45Mbit/s circuits were mapped to STM1 bearer using an incorrect

[28] Cartesian, Cost Attribution Review, section 6.3.3.4.
[29] Cartesian, Cost Attribution Review, section 6.3.3
[30] Cartesian, Cost Attribution Review, section 6.3.3.3.
[31] Cartesian, Cost Attribution Review, section 6.3.3.4
[32] BT's response dated 27 February 2015 to question A4a of the section 135 notice dated 13 February 2015. Specifically the number of bearers sourced from NDS (which the DAM says is a tool to extract data from INS, BT's system containing cable and PDH equipment records) was different from that sourced from CTCS.
[33] BT's response dated 27 February 2015 to question A4b of the section 135 notice dated 13 February 2015.

factor of 4 (rather than 3) and mapped to STM16 bearers using an incorrect factor of 63 (rather than 48).[34]

- 2Mbit/s circuits were mapped to 140Mbit/s and 565Mbit/s PDH bearers using factors of 63 and 252 respectively where factors of 64 and 256 would be more appropriate.[35]

Our assessment

7.18 We agree with Cartesian that a number of errors were present in the Access Rentals model. BT has also confirmed that errors exist in this model and that these will be corrected in the 2014/15 Regulatory Financial Statements.

Impact of correcting the error

7.19 BT estimated that the main market impact of correcting the error was to reduce FAC in the AISBO non-WECLA market by around £5.7m and increase FAC in the ISDN30 market by around £5.8m. FAC was affected by less than £1m in other individual markets.

3. Direct Allocation (Core/Backhaul duct Attribution to 21CN)

Background

7.20 Cartesian's report identifies that BT's duct costs amount to approximately £850m of FAC, including £5.3bn of MCE.[36] BT splits its duct costs into three categories, each relating to a different part of BT's network: access duct, backhaul duct and core duct. Approximately 79% of BT's duct costs relate to access duct, 16% to backhaul duct and 5% to core duct.[37]

7.21 Broadly speaking, access duct relates to the duct that is used between the exchange and each end user of telecoms services; core duct is the duct that is used between exchange buildings and backhaul duct is duct that sits in the core, but is considered part of Openreach's assets.[38]

7.22 BT captures the costs of backhaul and core duct in the Backhaul Duct (AG148) and Core Duct (AG149) activity groups respectively. Backhaul duct costs in AG148 are directly allocated to a plant group called "Backhaul fibre" (PG170B).[39] Core duct costs in AG149 are directly allocated to a plant group called "Core fibre" (PG350N).[40]

[34] BT's response dated 27 February 2015 to question A4b of the section 135 notice dated 13 February 2015.
[35] BT's response dated 27 February 2015 to question A3b of the section 135 notice dated 13 February 2015. BT said factors of 63 and 252 would be appropriate for SDH technology.
[36] Cartesian, Cost Attribution Review, Table 41.
[37] Ibid.
[38] See for example BT's description of AG148 on page 127 of the 2013/14 DAM. In addition, BT's backhaul network is defined on page 3 of the BT undertakings: "BT's Backhaul Network means BT's Electronic Communications Network from BT's Local Access Nodes to a) another BT Local Access Node; or b) a BT Core Node; or c) another Communication Provider's point of handover".
[39] Cartesian, Cost Attribution Review, section 5.4.5.5
[40] Cartesian, Cost Attribution Review, section 5.4.6.5

Cartesian's assessment

7.23 Cartesian identified that these fibre plant groups (PG170B and PG350N) only relate to fibre deployed in the 20CN network.[41]

7.24 In its assessment Cartesian says that "the backhaul and core duct cost categories (AG148 and AG149) directly allocate costs to 20CN fibre plant groups. However backhaul and core duct costs are also used by 21CN fibre. These costs should therefore also be apportioned to 21CN fibre PGs (e.g. PG900A)."[42]

Our assessment and view

7.25 We agree with Cartesian that core and backhaul duct costs were not allocated to 21CN fibre plant groups. BT also agrees that this is incorrect and includes this error in its 2015 Change Control Notification[43] indicating that this will be corrected in the 2014/15 Regulatory Financial Statements.

7.26 Cartesian said that an alternative attribution method would be for the core and backhaul duct costs to be attributed to 20CN and 21CN fibre plant groups in the same ratios as core and backhaul fibre costs were apportioned to these fibre plant groups.[44]

7.27 In the 2013/14 Regulatory Financial Statements fibre costs are apportioned to the plant groups shown in Table 7.2.

Table 7.2: Fibre cost plant groups in 2013/14 Regulated Financial Statements

Plant group	Description
20CN plant groups	
PG170B	Backhaul fibre
PG350N	Core fibre
21CN plant groups	
PG863A	Copper-Fibre MSAN Length
PG873A	Fibre MSAN-WDM Length
PG900A	WDM-Metro Length
PG865A	Core-Core Length
PG885A	Metro-Core Length

7.28 BT confirmed that fibre costs are apportioned to these plant groups as follows[45]:

- Fibre costs are apportioned between 20CN and 21CN networks based on the length of the fibre attributable to 20CN and 21CN networks respectively.

- Fibre costs attributed to the 20CN network are allocated to Backhaul fibre (PG170B) if they are incurred by a unit within Openreach or BT Retail Northern

[41] Cartesian, Cost Attribution Review, section 5.4.5.5 and section 5.4.6.5
[42] Cartesian, Cost Attribution Review, section 6.3.1.2
[43] BT, Methodology Change Report, page 25, section 3.14
[44] Cartesian, Cost Attribution Review, section 6.3.1.3
[45] BT response dated 27 February 2015 to question A8b of the section 135 notice dated 13 February 2015.

Ireland. They are allocated to Core fibre (PG350N) if they are incurred by a unit within BT TSO.

- Fibre costs attributed to the 21CN network are further apportioned between bearer tiers, represented by the five different 21CN plant groups. This apportionment is made on the basis of fibre lengths.

7.29 In the 2013/14 Regulatory Financial Statements backhaul and core fibre costs were allocated to each of the five 21CN plant groups. During the course of investigating how fibre costs were allocated to the plant groups listed in Table 7.2, BT confirmed that it was possible to associate each of the plant groups with either the core or backhaul networks as follows[46]:

Table 7.3: Fibre cost plant group associations

Plant group	Description	Segment
20CN plant groups		
PG170B	Backhaul fibre	Backhaul
PG350N	Core fibre	Core
21CN plant groups		
PG863A	Copper-Fibre MSAN Length	Backhaul
PG873A	Fibre MSAN-WDM Length	Backhaul
PG900A	WDM-Metro Length	Backhaul
PG865A	Core-Core Length	Core
PG885A	Metro-Core Length	Core

7.30 Amending the plant group mapping in line with Table 7.3 means that each 21CN plant group receives an attribution of either backhaul fibre costs or core fibre costs, rather than an attribution of both. If the plant groups can be associated with specific parts of BT's network, we consider that it is appropriate to take this into account when apportioning backhaul and core duct and fibre costs to those plant groups.

7.31 BT has confirmed that it will correct the attribution of core and backhaul duct to reflect the following[47]:

- First, the attribution of core and backhaul fibre costs will be amended to take into account the plant group mapping in Table 7.3.

- Second, core duct costs (AG149) will be attributed to the plant groups from Table 7.3 associated with the core network, in the same proportion as fibre costs were apportioned to these plant groups.

[46] BT response dated 27 February 2015 to question A8c of the section 135 notice dated 13 February 2015
[47] BT, Methodology Change Report, page 25, section 3.14

- Third, backhaul duct costs (AG148) will be attributed to the plant groups from Table 7.3 associated with the backhaul network, in the same proportion as fibre costs were apportioned to these plant groups.

Impact of correcting the error

7.32 BT estimated that correcting the error would remove £8.4m of FAC from regulated markets. The main market impact of correcting the error was to reduce FAC in the AISBO non-WECLA market by around £2.9m and in WBA market 1 by around £1.1m. FAC was affected by less than £1m in other markets.

4. Transfer Charges (BT Wholesale overheads)

Background

7.33 During its review, Cartesian identified a number of issues relating to BT's use of transfer charges in its cost attribution system. For example, Cartesian identified that certain transfer charges do not balance (for example, more transfers in than transfers out). We discuss this in Section 9.

7.34 BT said that when exploring the reasons why certain transfer charges did not balance, it realised it had treated some of BT Wholesale's transfer charges from non-core units as general in nature, when in fact they related to services in residual markets.[48] For example, Global Services made a number of charges to BT Wholesale relating to unregulated products sold by BT Wholesale. These costs were treated as a general overhead of BT Wholesale, and so apportioned to both regulated and unregulated products, when in fact they solely related to unregulated products.

Our assessment and view

7.35 Where overheads specifically relate to unregulated products but have been apportioned to both regulated and unregulated products, we consider that this is an attribution error that should be corrected.

7.36 BT confirmed this was an error and that this will be corrected in the 2014/15 Regulatory Financial Statements.[49]

Impact of correcting the error

7.37 BT estimated that correcting this error would reduce FAC in regulated markets by around £13m, with residual market costs increasing by £13m. The main market impact of correcting the error was to reduce FAC in the low bandwidth TISBO market by £4.9m.

5. Other Cartesian Identified errors

7.38 A number of other errors were identified during the course of Cartesian's review which we have not included in the 2013/14 LLCC base data for the 2015 Consultation.

[48] BT email dated 22 February 2015 from [✂] (BT) to [✂] (Ofcom).
[49] BT response dated 27 February 2015 to question A10c of the s135 notice dated 13 February 2015.

7.39 Correcting these other errors would collectively remove approximately £10m in FAC from fixed access markets and £3m in FAC from business connectivity markets, with these costs being re-attributed to residual markets. These other errors will be taken into account in the base data for the LLCC decision. These other errors are described briefly in the rest of this section.

Duct Valuation (Access:Backhaul duct ratio)

7.40 Duct used by Openreach is attributed between access and backhaul network segments using an access:backhaul duct ratio. This ratio is calculated using historic duct values.

7.41 Cartesian identified that BT did not apply any CCA indexation to its duct values when calculating the Access:Backhaul duct ratio.[50] BT has also confirmed that this is an error and that it will be corrected in the 2014/15 Regulatory Financial Statements.

7.42 BT estimates that correcting this would not affect any individual market reported in the Regulatory Financial Statements by more than £0.7m in FAC terms.[51]

Property Cost Apportionment

Property sub-letting income

7.43 BT property costs are mostly captured in activity group AG106. Cartesian describes activity group, Group Property and Facilities Management (AG106) as capturing costs "from BT Group Property, BT TSO and BT Corporate Services. Costs included are Telereal rent, depreciation from owned BT property, electricity charges, facilities management costs and Telereal contract costs."[52]

7.44 BT said that it had attributed other operating income received by Group Property (e.g. sub-letting income) to retail products.[53] This does not match the treatment of property costs which are attributed to Group Property and Facilities Management (AG106).

7.45 We consider that the treatment of income from property should be consistent with the treatment of property costs. BT also recognised this and has confirmed that this will be corrected in the 2014/15 Regulatory Financial Statements in its 2015 Change Control notification.[54]

[50] Cartesian, Cost Attribution Review, section 6.2.2.4. The description on page 84 of the 2013/14 DAM of the PDTDUCT methodology says that duct values have been indexed but this was not the case in 2013/14
[51] BT response dated 13 March 2015 to question B2 of the s135 notice dated 13 February 2015.
[52] Cartesian, Cost Attribution Review, section 5.6.4.1
[53] BT email dated 22 February 2015 from [✂] (BT) to [✂] (Ofcom).
[54] BT, Methodology Change Report, page 29, section 3.18, http://www.btplc.com/Thegroup/RegulatoryandPublicaffairs/Financialstatements/2015/ChangeControlNotification-31March2015.pdf

7.46 BT estimates that correcting the treatment of sub-letting income would decrease operating costs in fixed access markets by around £4m and business connectivity markets by around £1m.[55]

Property provisions

7.47 Property provisions in activity group Property Provision (AG414) reflect the provisions raised by BT Group Property against the cost of early termination of leases on office buildings that are no longer economical.

7.48 Cartesian identified that "the treatment of costs related to early termination of leases on office buildings appears inaccurate".[56] BT agreed that the approach to allocating costs in AG414 was inappropriate since it was based on transfer charges relating to 'general buildings' and not a transfer charge based on office buildings.[57]

7.49 BT identified what it considered to be a more appropriate allocation basis for AG414 which uses the Group Property transfer charge for office costs.[58] Given that the provisions in AG414 relate to office buildings, we consider it appropriate that the attribution basis should also reflect the costs of office buildings.

7.50 BT estimates that correcting this attribution error would have an immaterial effect on the operating costs for each market reported in the Regulatory Financial Statements[59] with the main impact being to move costs from retail residual markets to wholesale residual markets.[60]

Property depreciation for short term leases

7.51 BT records the depreciation and asset costs for owned land and buildings against activity group BT Property Fixed Assets (AG412). Cartesian identified that "some depreciation charges relating to BT retained buildings are still attributed to AG106 rather than in AG412."[61] This means that some depreciation and assets relating to short term leases on owned assets were erroneously being attributed to Group Property and Facilities Management (AG106).

7.52 BT agreed that it was appropriate to attribute these depreciation and asset costs to AG412 rather than AG106.[62] We also agree that the depreciation and asset costs associated with owned land and buildings should be attributed to AG412. However, the amount of cost misattributed was very small (<£100k) and so the effect of

[55] BT response dated 13 March 2015 to question B4 of the s135 notice dated 13 February 2015.
[56] Cartesian, Cost Attribution Review, section 6.3.7.4
[57] BT response dated 6 March 2015 to question B7a and B7b of the s135 notice dated 13 February 2015.
[58] BT response dated 6 March 2015 to question B7b and B7c of the s135 notice dated 13 February 2015. The specific F8 code BT refers to is 285180.
[59] In section 6.3.7.4 of its report, Cartesian estimated that the impact of correcting this error could be £13m. However, this estimate was based on using a transfer charge relating to general buildings and not office buildings. Given that the provisions in AG414 relate to office buildings, we consider it appropriate that the allocation basis should also reflect the costs of office buildings, which BT's proposed approach appears to do.
[60] BT response dated 13 March 2015 to question B8 of the s135 notice dated 13 February 2015.
[61] Cartesian, Cost Attribution Review, section 6.3.7
[62] BT response dated 6 March 2015 to question B16a of the s135 notice dated 13 February 2015.

correcting this on markets reported in the Regulatory Financial Statements is immaterial.[63]

Usage Factors - ISDN

7.53 Cartesian said that there were mathematical errors for certain ISDN related network components.[64] BT confirmed that the usage factors to attribute the following components to ISDN2 and ISDN30 services were incorrect due to a formula error in the calculation of the usage factors.[65] The correction of this error has a small impact on the ISDN2 and ISDN30 markets (adding about £0.1m of FAC to each[66]) and WLA and residual markets (removing about £0.1m of FAC from each[67]).

Table 7.4: Incorrect ISDN usage factors

Component	Service	Incorrect usage factor	Correct usage factor
CL160 - Routing and Records	Wholesale business ISDN30 internal service conn	0.04	0.11
	Wholesale ISDN2 internal service connections	0.33	0.75
	Wholesale ISDN2 external service connections	0.33	0.75
	Wholesale business ISDN30 external service conn	0.04	0.11
CL177 – PSTN line test equipment	Wholesale business ISDN30 internal service rentals	0.07	0.06
	Wholesale ISDN2 internal service rentals	0.81	0.50
	Wholesale ISDN2 external service rentals	0.81	0.50
	Wholesale business ISDN30 external service rentals	0.07	0.06

Power Consumption for TSO (TSO Electricity Model)

7.54 The electricity charge incurred by TSO is attributed based on the power consumption of the network equipment.[68] BT calculates the attribution base using its TSO electricity model. This model is responsible for the attribution of approximately [✂ £100m to £150m] of electricity FAC to network equipment.

7.55 The attribution of costs within this model is a two stage process. First, costs are attributed to 'network segments', i.e. network systems that consist of various 'network elements'. Second, costs are attributed from the network segments to 'network elements' (network elements are associated with plant groups), which are the individual network components used in the network systems.

[63] BT response dated 6 March 2015 to question B16b of the s135 notice dated 13 February 2015.
[64] Cartesian, Cost Attribution Review, section 6.4.5
[65] BT response dated 6 March 2015 to question B18c of the s135 notice dated 13 February 2015.
[66] BT response dated 13 March 2015 to question B19 of the section 135 notice dated 13 February 2015.
[67] Ibid.
[68] Cartesian, Cost Attribution Review, section 6.2.14.4

7.56 Cartesian identified two potential issues with regards to the mathematical accuracy of BT's TSO Electricity model.[69]

7.57 First, Cartesian identified a mathematical error in BT's calculation of total power consumption which, if corrected, would change the calculated value of total power consumption by 3% to 5%.[70]

7.58 Second, Cartesian identified that the TSO electricity model excluded certain activity programmes from the cost attribution analysis in 2013/14.[71] This means that electricity costs were not attributed to all activity programmes that should have received an allocation of TSO electricity costs.

7.59 In relation to the calculation of total power consumption BT explained that total power consumption is calculated by multiplying volume by power in kilowatts. BT said that its calculation used a rounded figure for power rather than an unrounded figure, explaining the apparent discrepancy identified by Cartesian.[72]

7.60 We consider that it would be appropriate to use a more accurate unrounded figure for power in the calculation of total power consumption, although we note that the difference between using rounded and unrounded figures is not material.[73] BT has confirmed that the unrounded power values will be used in the preparation of the 2014/15 Regulatory Financial Statements.[74]

7.61 In relation to the exclusion of activity programme costs from the TSO Electricity model, BT explained that these programmes had been excluded because it thought they were not relevant to the associated plant groups. However, BT confirmed that these programmes in fact are relevant and should receive an allocation of electricity costs. [✂].[75]

7.62 We agree with Cartesian that it was an error to omit these programmes when attributing electricity costs. BT also confirmed that this was an error.[76] BT has also confirmed this will be corrected in the 2014/15 Regulatory Financial Statements.

7.63 The impact of correcting the calculation of total power consumption in the TSO Electricity model is very small, adding around £10k of FAC to regulated markets.[77]

7.64 The impact of including the omitted programmes so that they receive an allocation of electricity costs largely affects the residual markets, removing around £1.5m of FAC from wholesale residual and adding £1.5m of FAC to retail residual, with a small amount of FAC (c£40k) added to regulated markets.

[69] Cartesian, Cost Attribution Review, section 6.2.14.4
[70] Cartesian, Cost Attribution Review, section 6.2.14.4
[71] Cartesian, Cost Attribution Review, section 6.2.14.4
[72] BT response dated 20 March 2015 to question B3 of the section 135 notice dated 13 March 2015.
[73] BT response dated 27 March 2015 to question B4 of the section 135 notice dated 13 March 2015.
[74] BT response dated 27 March 2015 to question B4 of the section 135 notice dated 13 March 2015.
[75] BT response dated 20 March 2015 to question B6 of the section 135 notice dated 13 March 2015.
[76] BT response dated 20 March 2015 to question B6 of the section 135 notice dated 13 March 2015.
[77] BT response dated 27 March 2015 to question B3 of the section 135 notice dated 13 March 2015.

NGA Duct Depreciation

7.65 Some exchange side (E-side) duct is used to connect the fibre street cabinets to the copper street cabinets needed for the rollout of FTTC. Specifically, this duct contains the tie cables required for FTTC.[78]

7.66 Rather than being recorded against a specific NGA CoW, work on constructing this duct is recorded against CoW LMD (Local exchange side duct) alongside other non-NGA E-side duct. Therefore BT needs to apportion some of the duct costs recorded in the LMD CoW to NGA FTTC tie cables.

7.67 BT uses a base methodology called PDTLMD to apportion costs from CoW LMD to plant group FTTC Copper Tie Cables (PG192A). This methodology apportions costs using the ratio of annual depreciation for duct built for NGA FTTC tie cables to the annual depreciation for duct built for E-side copper cable[79].

7.68 The annual depreciation for duct relating to NGA FTTC tie cables is estimated from the capex on NGA projects which are booked against the LMD CoW, based on a 40 year duct life.[80] We understand that the capex figure used to estimate the depreciation charge relates only to the current year and is not a cumulative total.

7.69 The proportion of cost in CoW LMD allocated to FTTC tie cables was approximately [✂]% in 2013/14, a third lower than the [✂]% allocated in 2012/13.[81] No costs from CoW LMD were allocated to FTTC tie cables in 2011/12 since there was no plant group this year to which the costs could be allocated.

7.70 Cartesian was concerned that the identification of capex associated with NGA projects was carried out by "inspecting the costs booked against LMD […] and then deciding which costs are related to NGA based on product knowledge. This manual inspection and decision process may introduce errors".[82] Cartesian made a similar point in relation to the PDTLMC methodology, which allocates copper cable costs from the LMC class of work to FTTC NGA tie cables.[83]

7.71 Cartesian also had concerns about "using cable depreciation to apportion duct costs when the rest of duct costs in the LMD pool are attributed based on duct valuation" (i.e. GRC values).[84]

7.72 We asked BT whether capex on NGA FTTC tie cables was estimated by a manual inspection of costs booked against LMD and using product knowledge to associate that capex with NGA or non-NGA products. BT said that the "project details received from BT's internal project ledger include information on the type of project (i.e. copper/NGA). We allocate the element relating to NGA directly to PG192A FTTC copper tie cables so no judgement is required".[85] We therefore understand that details of whether the duct has been built for NGA or NGA purposes is recorded at the time in BT's internal project ledger and this information is used to inform the

[78] Cartesian, Cost Attribution Review, section 6.2.4.1
[79] BT response dated 20 March to question D1ii of the section 135 notice dated 13 March.
[80] BT response dated 20 March to question D1iii of the section 135 notice dated 13 March.
[81] BT response dated 20 March 2015 to Question D1(e) of the section 135 notice dated 13 March 2015.
[82] Cartesian, Cost Attribution Review, section 6.2.4.4
[83] Cartesian, Cost Attribution Review, section 6.2.5.4
[84] Cartesian, Cost Attribution Review, section 6.2.4.4
[85] BT response dated 20 March to question D1iv of the section 135 notice dated 13 March.

allocation of duct costs in CoW LMD between NGA and non-NGA products. This appears to us to be a reasonable approach and not unduly reliant on manual inspection.

7.73 BT said that the apportionment of LMD duct costs to FTTC tie cables is made using an estimate of duct depreciation rather than cable depreciation (see paragraph 7.79). We asked BT why depreciation was used to apportion duct costs to FTTC tie cables rather than GRC values. BT said that "we use depreciation instead of GRC because the GRC valuations for pre-1997 assets used to allocate duct classes of work are based upon a valuation study conducted in 1996/97. This study provided valuations broken down into three categories: access fibre duct, access copper duct and core duct. This study can therefore be used to calculate apportionments between access duct and core duct (e.g. via the PDTDUCT base), but not those that depend upon a more detailed breakdown of assets, such as PDTLMD – a subset of access copper duct."[86]

7.74 While it would be preferable to have a consistent approach to allocating duct costs (for example using GRC values to allocate all duct costs), where this information is not available, an allocation based on depreciation appears reasonable to us since it should result in comparable allocation proportions where depreciation is calculated on a basis consistent with GRC (and all relevant assets have similar asset lives). However, in this instance, we are not convinced that BT's apportionment methodology results in an appropriate amount of LMD duct costs being allocated to FTTC tie cables because its estimate of depreciation for NGA FTTC tie cables is not calculated on a basis consistent with GRC.

7.75 We understand that BT's estimate of the annual depreciation associated with duct built for NGA FTTC tie cables is estimated by reference to the in-year capex on duct built for NGA FTTC. BT then derives an apportionment percentage by dividing this estimate by the total duct depreciation associated with the LMD CoW:

$$Annual\ depreciation\ on\ duct\ built\ for\ NGA\ FTTC = \frac{LMD\ NGA\ capex\ in\ year}{Duct\ life\ (40\ years)}$$

$$NGA\ FTTC\ tie\ cables\ allocation\ \% = \frac{Annual\ depreciation\ on\ duct\ built\ for\ NGA\ FTTC}{Depreciation\ associated\ with\ LMD\ CoW}$$

7.76 BT's estimate of the annual depreciation on duct built for NGA FTTC does not take into account the cumulative capex spend on NGA recorded against this CoW. We understand that the capex spend on NGA represented a high proportion of total capex spend recorded against CoW LMD in 2013/14. As such we would expect the total depreciation associated with duct built for NGA FTTC to increase as a proportion of total depreciation recorded against LMD. However, the proportion of LMD costs allocated to FTTC actually fell by a third in 2013/14. We therefore think BT's apportionment of costs from CoW LMD to NGA FTTC tie cables should be corrected so that the annual depreciation of duct built for NGA FTTC is derived from cumulative capex rather than in-year capex. BT has confirmed that in the 2014/15 Regulatory Financial Statements it will correct the calculation of annual depreciation of duct built for NGA FTTC so that it is derived from cumulative capex rather than in-year capex. BT said that the impact of correcting this error would be to remove

[86] BT response dated 27 March to question D1b of the section 135 notice dated 13 March.

around £5.9m of FAC from Fixed Access markets and around £1.4m of FAC from Business Connectivity markets.[87]

BT Consumer costs allocated to Ethernet Switches

7.77 The Ethernet Switches cost group includes around [✂ £50m to £100m] of FAC in two plant groups; Ethernet Switches (PG901A) and Ethernet Switch Access Cards (PG902A).[88] Most of the costs attributed to Ethernet Switches come from BT TSO, which includes the capital costs of the Ethernet equipment.

7.78 Ethernet Switch plant group costs are mainly allocated to components in Network Residual, Wholesale Broadband Access markets 1 & 2 and AISBO non-WECLA.

7.79 Cartesian found that approximately [✂ £0m to £10m] of FAC attributed to Ethernet Switches related to the BT Consumer division.[89]

7.80 Cartesian said that "*It is not entirely clear if the costs here are mislabelled or if this is genuinely a Retail Consumer cost. If these costs are genuine Retail Consumer costs, then there is a risk that the base attribution methodology being used is not configured accurately*." [90]

7.81 BT said that the BT Consumer costs allocated to Ethernet Switches related to an activity undertaken in its Plusnet subsidiary but they had been incorrectly interpreted as network engineering costs in the 2013/14 Regulatory Financial Statements.[91]

7.82 Around half of the costs allocated to Ethernet Switches are attributed to regulated markets. Since [✂ £0m to £10m] of FAC related to BT Consumer is included in the costs of Ethernet Switches this means that some costs associated with BT Consumer are attributed to regulated markets. We consider that this is an error since the BT Consumer costs are associated with residual markets and not regulated markets.

7.83 BT has stated in its Change Control notification that BT Consumer costs will be attributed to Retail Residual in the 2014/15 Regulatory Financial Statements.[92]

7.84 The impact of removing BT Consumer costs from Ethernet Switches is to remove approximately [✂ £0m to £10m] of cost from regulated markets, mainly from AISBO markets and WBA markets 1 and 2.

Other Identified Errors

7.85 The following errors were identified in the course of the Cost Attribution Review. BT has confirmed that each of these errors will be corrected in the 2014/15 Regulatory Financial Statements.

[87] BT email dated 3 June 2015
[88] Cartesian, Cost Attribution Review, section 5.8.7.1
[89] Cartesian, Cost Attribution Review, paragraph 5.8.7.1.
[90] Cartesian, Cost Attribution Review, section 5.8.7.2
[91] Email dated 2 February 2015 from [✂] (BT) to [✂] (Ofcom).
[92] 2015 Change Control Notification: http://www.btplc.com/Thegroup/RegulatoryandPublicaffairs/Financialstatements/2015/ChangeControlNotification-31March2015.pdf, page 28.

Facilities management costs

7.86 Facilities management costs are captured within activity group Group Property and Facilities Management (AG106) in BT's cost attribution system. However a small amount of facilities management costs (around £1m in 2013/14[93]) were erroneously attributed to activity group Corporate Overheads (AG112)[94] rather than AG106.

7.87 We consider that this is an error. BT also recognised this in its 2015 Change Control notification published March 2015.[95]

7.88 BT estimates that correcting this error would have an immaterial effect on the operating costs for each market reported in the Regulatory Financial Statements. In 2013/14, the maximum impact on operating costs would be an increase or decrease of £0.1m.[96]

IP Network allocation to Ethernet Switches

7.89 Costs associated with the IP network are attributed to plant groups based on the depreciation derived from capital spend over the last three years.[97] This is done via the base methodology called PDTIPNCO.[98] One of the cost components receiving an attribution of IP network costs is Ethernet switches (CN901). Following discussions with Cartesian, BT said that the capital spend used to attribute IP network costs to Ethernet switches omitted some investments on residual services. BT estimates that the impact of correcting this error is to remove around £0.6m of FAC from business connectivity markets, with that cost instead going to residual markets.[99]

Usage factor for MSAN TDM Cards

7.90 During the course of its review, Cartesian asked BT to provide information on usage factors used to attribute cost components to services.[100] BT said that cost component CN881 (21CN MSAN TDM cards) should have used a factor of 0.25 for the attribution to 34Mbit's services (since one MSAN card can support four 34Mbit/s services).[101] In the 2013/14 Regulatory Financial Statements the usage factor was instead 1.0.[102] BT said that this has an immaterial effect on costs reported at a market level in the Regulatory Financial Statements, although it does result in approximately £50k costs being removed from the medium bandwidth TISBO

[93] BT response dated 6 March 2015 to question B5 of the s135 notice dated 13 February 2015.
[94] Specifically, the base methodology DTNHQ as applied to OUC F (facilities management) incorrectly allocated costs to AG112 rather than AG106. See Cartesian, Cost Attribution Review, page 435.
[95] BT, Methodology Change Report, page 29, section 3.18
[96] BT response dated 13 March 2015 to question B6 of the s135 notice dated 13 February 2015.
[97] BT response dated 6 March 2015 to question B12b of the section 135 notice dated 13 February 2015. See also Cartesian, Cost Attribution Review, section 5.8.4.3
[98] BT 2014 DAM, page 85
[99] BT response dated 13 March 2015 to question B13 of the section 135 notice dated 13 February 2015.
[100] Cartesian, Cost Attribution Review, paragraph 6.4.5
[101] BT response dated 6 March 2015 to question B9 of the s135 notice dated 13 February 2015.
[102] Note that the LLCC proposes to exclude 21CN costs from the base data, including the costs of component CN881.

market[103]. We understand that in the 2014/15 Regulatory Financial Statements no costs associated with MSAN TDM cards will be attributed to regulated services.

Call Usage Factors for part services

7.91 BT said that the following call usage factors were incorrect in the 2013/14 Regulatory Financial Statements:[104]

Table 7.5: Incorrect call usage factors

Component	Name	Incorrect usage factor	Correct usage factor
CO325	Remote - local transmission link	0.78	0.81
CO326	Remote - local transmission length	1.43	1.49
CO330	Local - tandem transmission link	0.74	0.73
CO340	Local - tandem transmission length	2.98	2.99
CN861	MSAN - POSI Voice Link	0.96	1.00
CN862*	MSAN - POSI (dense) length voice	0.00	18.00

*BT said that component CN862 had very minimal CCA cost and MCE in 2013/14.[105]

7.92 Correcting these usage factors has an immaterial impact on services reported in the 2013/14 Regulatory Financial Statements.[106] There is a small movement of costs between services in the narrowband market, with standard calls receiving less costs and sticks receiving more costs.[107]

7.93 This error affects call usage factors in circumstances where costs are attributed from component to service via an Openreach part-service. BT said that controls in the new REFINE system will prevent this type of error recurring in future.[108]

Usage factor for i-Node component

7.94 BT said that the usage factor applied to component CN855 (iNode features) was incorrect. This component is used by two services in the residual market – OR Network features (external) and OR Network features (internal). The usage factors used in the 2013/14 Regulatory Financial Statements were 0.81 and 0.19 respectively, while BT said they should have been 1.0.[109] Correcting this error does not affect any market reported in the Regulatory Financial Statements since it simply

[103] BT response dated 13 March 2015 to question B10 of the section 135 notice dated 13 February 2015 and email dated 24 March 2015 from [✂] (BT) to [✂] (Ofcom).
[104] BT response dated 6 March 2015 to question B14b and B14c of the section 135 notice dated 13 February 2015.
[105] BT response dated 6 March 2015 to question B14c of the section 135 notice dated 13 February 2015.
[106] BT response dated 13 March 2015 to question B15 of the section 135 notice dated 13 February 2015.
[107] Email dated 24 March 2015 from [✂] (BT) to [✂] (Ofcom).
[108] Email from [✂] (BT) to [✂] (Ofcom), 22 January 2015.
[109] BT response dated 6 March 2015 to question B20 of the section 135 notice dated 13 February 2015.

involves moving costs between an internal and external service in the residual market.[110]

Other potential errors

7.95 Cartesian also identified the following potential errors.

Duct Valuation (Allocation of LDD CoW)

7.96 BT records duct costs against a number of different classes of work (CoWs):

- CJD - Junction duct
- LDD – Local distribution duct for copper cable
- LFD – Local duct for OF cable
- LMD – Local main (exchange side) duct for copper
- MUD – Main underground duct
- TVD – Cable TV: all duct work

7.97 BT uses a methodology called PDTDUCT to attribute costs from these CoWs to access, backhaul and core duct activity groups.[111] Duct costs incurred by Openreach are apportioned between Access Duct (AG135) and Backhaul Duct (AG149) using the access:backhaul ratio while duct costs incurred by TSO are allocated directly to Core Duct (AG149). The access:backhaul ratio is derived by reference to the value of BT's duct.[112]

7.98 Cartesian said that the PDTDUCT methodology apportions costs booked against CoW LDD (D-side duct) between access and backhaul activity groups but that D-side duct is related to access and not backhaul. Cartesian considered that these duct costs should be directly allocated to Access Duct (AG135).[113]

7.99 Cartesian made a similar point concerning the LMD CoW, saying that this appears to record exchange side duct costs, but that BT attributes some of these costs to Core Duct (AG149).[114]

7.100 We asked BT whether the costs booked against CoW LDD related only to D-side (access) duct. If this CoW only captured costs relating to D-side duct then it might not be appropriate to attribute the costs to backhaul duct as well as access duct.

7.101 BT said that duct is a common asset that is available for use by any type of cable. It added that the CoWs record the original use of the duct, and where the duct is used to carry different cables over time, the CoW is not updated to reflect current use. In addition, BT applies CCA adjustments to the total sum of the duct CoWs and not to each CoW separately. Therefore, for attribution purposes, BT allocates the total sum

[110] Email dated 24 March 2015 from [✂] (BT) to [✂] (Ofcom).
[111] Cartesian, Cost Attribution Review, section 6.2.2.3,
[112] Cartesian, Cost Attribution Review, section 6.2.2
[113] Cartesian, Cost Attribution Review, section 6.2.2.4
[114] Cartesian, Cost Attribution Review, section 6.2.4.4

of the duct CoWs rather than each CoW separately (with the exception that for the LMD CoW, the proportion of cost that relates to NGA FTTC tie cables is attributed to a separate plant group).[115]

7.102 We do not consider that BT has made an error in attributing costs from CoW LDD. Given that the LDD CoW records the original use of the duct and not the current use of the duct, we do not consider it would be appropriate to directly allocate this CoW to Access Duct (AG135) as suggested by Cartesian. To the extent that backhaul cables are now present in duct that was originally booked to the LDD CoW, it is appropriate to attribute a proportion of the LDD CoW to Backhaul Duct (AG149).

7.103 Similarly, we do not consider that BT has made an error in attributing costs from CoW LMD. The LMD CoW records duct that was originally required for E-side cables. However, over time some of that duct may be used to provide cables used in the core network. It therefore appears appropriate to attribute some of the costs recorded against LMD to the core network. We note that the amount of LMD costs attributed to Core Duct is relatively small.[116]

7.104 A related question is whether BT's estimate of the value of duct associated with the access, backhaul and core segments of the network is appropriate. We consider this in Section 10.

Duct Valuation and Cable Depreciation (Intra-exchange tie cables)

7.105 Access duct costs are recorded in activity group Access Duct (AG135).

7.106 Cartesian said that a combination of duct valuation and cable depreciation is used by BT to apportion costs from Access Duct (AG135) to the various PGs representing the different copper and fibre cable types in those ducts.[117]

7.107 Cartesian explains that access duct costs are first split between copper access and fibre access using a fibre:access ratio derived from duct valuations.[118] Approximately 91% of access duct costs are attributed to copper access.[119]

7.108 Copper access duct is then apportioned between E-Side cables, D-side cables and intra-exchange tie cables on the basis of depreciation recorded against CoWs LMD (E-side duct), LDD (D-side duct) and DLLU (LLU tie cables) respectively.[120]

7.109 Cartesian identified that a small proportion of access duct cost is apportioned to Intra-Exchange Tie Cables (PG130A) on the basis of the depreciation recorded against CoW DLLU (LLU tie cables). Cartesian said that this may be an error although it was did not have a material impact. [121]

7.110 We estimate that only [✂ £0m to £1m] of access duct FAC is attributed to Intra-exchange Tie Cables (PG130A), of which around [✂ £0m to £1m] is allocated to

[115] BT response dated 6 March 2015 to question C1b of the section 135 notice dated 13 February 2015 and BT response dated 2 April to a follow up question from Ofcom dated 11 March 2015.
[116] Cartesian, Cost Attribution Review, section 6.2.4.4
[117] Cartesian, Cost Attribution Review, section 6.3.2.3
[118] Cartesian, Cost Attribution Review, section 6.3.2.2. Cartesian explains that this apportionment is exactly as described for the PDTDUCT methodology.
[119] Cartesian, Cost Attribution Review, Table 312
[120] Cartesian, Cost Attribution Review, section 6.3.2.3
[121] Cartesian, Cost Attribution Review, section 6.3.2.4

regulated markets. We agree with Cartesian that attributing duct to Intra-Exchange Tie Cables does not appear correct since we would expect intra-exchange tie cables to connect the main distribution frame to CP's equipment that is housed in the same exchange building (i.e. the tie cables would not require any external duct). However, we will investigate this issue further with BT to understand what activities CoW DLLU is capturing and the extent to which these activities relate to Intra-Exchange Tie Cables. We will set out our findings in the autumn.

Cost of Phonebooks

7.111 Phonebook costs relate to costs for paper, printing, binding, delivery and freight of phonebooks. In 2013/14 £30m FAC associated with Phonebooks was directly allocated to network component CKT12, which in turn was allocated wholly to WLR.[122]

7.112 Cartesian noted that, following Ofcom's 2014 Fixed Access Market Review "Ofcom requires BT to exclude phonebooks from regulated markets from FY 2014/15 onwards".[123]

7.113 On 30 March 2015 we published the Directions for Regulatory Financial Reporting[124] where we decided that "BT must allocate the cost of printed telephone directories to the Wholesale Residual market in its Regulatory Financial Statements. The adjustment excludes the cost of printed telephone directories from WLR Rentals". [125]

7.114 BT will reflect this change in its 2014/15 Regulatory Financial Statements. In its Change Control notification BT said "we intend to move the costs of providing telephone directories to WLR consumers from the WLR rentals service to Retail Residual. This change aligns the [Regulatory Financial Statements] with the FAMR regulatory decision to no longer include Telephone Directories in the WLR cost stack".[126]

7.115 The impact of reallocating the cost of Phonebooks from WLR to Retail Residual is to remove £30m of FAC from the WLR market in 2013/14. There is no impact on the costs of other regulated markets.

Question 7.1: Do you have any comments on the errors we have identified in Section 7 and how we have addressed them?

[122] Cartesian, Cost Attribution Review, section 5.10.16.8. Note that the Cartesian report states that the FAC impact is £26m while section 3.6 of BT's change control notification says it is £30m (£29m of CCA operating cost, MCE of £9m). We have referred to BT's estimate.
[123] Cartesian, Cost Attribution Review, section 6.1.2.4
[124] http://stakeholders.ofcom.org.uk/binaries/consultations/financial-reporting/statement/statement.pdf
[125] Directions for Regulatory Financial Reporting, page 36, paragraph 4.34
[126] 2015 Change Control Notification, page 17: http://www.btplc.com/Thegroup/RegulatoryandPublicaffairs/Financialstatements/2015/ChangeControlNotification-31March2015.pdf

Section 8

Attribution by pay and return on assets

Introduction

8.1 As set out in Section 6, Cartesian noted that BT currently attributes general management and overhead costs using Pay and Return on Assets. It concluded that it was concerned that this approach might not comply with the principles of Causality and Objectivity.

8.2 In this section we consider how BT uses attribution methodologies based on pay and return on assets to attribute the costs it describes as general overheads. We explain that we consider that the way BT attributes these costs is clearly inappropriate and propose changes to the attribution methodologies.

8.3 BT uses a similar attribution methodology to attribute costs it describes as Openreach common costs, within Openreach. We consider these costs at the end of this section but have not proposed any changes regarding these costs at this stage.

Background

8.4 Under the Regulatory Accounting Principle of Causality, BT's Regulatory Financial Reporting must ensure that costs are attributed in accordance with the activities which cause the revenues to be earned, or costs to be incurred, or the assets to be acquired, or liabilities to be incurred respectively.

8.5 Cartesian identified costs of £1,074m described by BT as 'General Overheads'. In general terms, this cost category includes management costs incurred in overseeing BT group operations.[127] Cartesian concluded that some of these costs were allocated using allocation bases that did not appear to comply with some of the Regulatory Accounting Principles, including Causality.[128]

8.6 In this section we:

- Describe the costs included in BT's category of General Overheads;
- Identify the key attribution methodologies used to attribute these costs;
- Explain why we consider that these attribution methodologies are clearly appropriate; and
- Propose attribution methodologies that we consider appropriate.

8.7 To determine how best to attribute these costs, we have considered the costs at a more granular level than that used by BT for cost attribution purposes. To inform this assessment, we have obtained information and explanations from BT about the nature of these costs. For the purpose of this consultation, we set out our views based on our current understanding but will continue to seek further information from BT to better understand these costs while seeking views from stakeholders on how

[127] Cartesian, Cost Attribution Review, section 5.3
[128] Cartesian, Cost Attribution Review, section 6.3.5

these costs might best be attributed. If the additional information and explanations lead to significant changes to our proposals, it may be necessary to consult on our updated proposals.

Potential impact of proposals

8.8 In this section we explain why we consider that the way BT currently attributes its General Overheads is clearly inappropriate and propose alternative methodologies.

8.9 Table 8.1 includes estimates of the possible impact on costs allocated to regulated markets if, following consultation, we were to adopt the proposals in full.

Table 8.1: Estimated impact of proposed changes to attribution of General Overheads (£'m)

	Fixed access	Business connectivity[129]	Narrow-band	WBA 1 and 2	Residual
Reattribute General Overheads	(155)	(55)	(6)	(10)	226

8.10 These figures are estimates. As explained in more detail in Annex 5, they have been calculated by Cartesian using a model it developed at our request to simulate BT's cost attribution system. The accuracy of the estimates is therefore subject to the reasonableness of the simplifying assumptions made in the model and the accuracy of the input data provided by BT.

8.11 Possibly the most significant of these limitations is that, to model the approximate impact of the proposed changes in aggregate, Cartesian modelled the impact of attributing all of these costs using a single attribution methodology (based on previously allocated costs) as a proxy for the combined impact of the individual changes.

8.12 However, Cartesian has explained that it considers that the impacts and outputs from their model are representative of the cumulative impact on BT's costs of our proposals in Section 8.

8.13 Due to the granular detail of these costs and the small amounts of capital included in these costs, the costs are estimated on a CCA basis. However, for the purpose if this consultation, we consider that they provide a reasonable proxy for the potential FAC impact of the proposed changes.

8.14 To the extent that we decide that any of the proposed changes should be reflected in BT's financial data, we expect to require BT to run those changes through its cost attribution system to derive more accurate calculations to be included in the base year data for the LLCC.

Review of attribution basis

8.15 Cartesian identified costs of around £1,074m which BT described as General Overheads.

[129] The impact shown here relates to the Business Connectivity markets as reported in the 2013/14 Regulatory Financial Statements. It does not include the impact on any business connectivity services included in residual markets.

8.16 As set out in Table 8.2, this includes corporate costs, the cost of support functions within BT's Technology Services and Operations ("TSO") division plus other centrally incurred costs that BT has apportioned on the basis of pay costs, and Selling General and Administration ("SG&A") costs.

Table 8.2: General Overheads

Cost category	Cartesian Report	Amount CCA(£m)
1. Selling General & Admin costs	5.3.7	[✂ £150m to £200m]
2 .Costs allocated using pay drivers	5.3.6	[✂ £150m to £200m]
3. Corporate Costs	5.3.4	[✂ £500m to £1,000m]
4. TSO support functions	5.3.5	[✂ £100m to £150m]
Total overheads		**1,074**

8.17 We consider each of these costs in turn.

1. Selling, General & Administration costs; and 2. Costs allocated using pay drivers

8.18 The SG&A cost category includes five plant groups that include asset depreciation costs, subcontract costs and general management costs. Examples of assets included within this cost sub-group are software and general computers.

8.19 These plant groups do not represent the entire SG&A costs of BT. Most SG&A costs are directly attributed to other activity groups and plant groups. It is unclear why BT has created separate SG&A cost groups for Wholesale that relate to costs for wholesale teams that provide managed services to mobile and other fixed line operators.

8.20 Nevertheless, these costs are directly attributed to their associated network component in BT's allocation system. Direct cost allocation allocates costs directly to the network component and then services that cause the cost to be incurred.

8.21 The costs allocated using pay drivers (for Openreach and Wholesale) are attributed exclusively to Openreach and to BT Wholesale respectively on the basis of pay.

8.22 Costs are recorded against these activity groups because, according to BT, they are most appropriately allocated to BT divisions and markets based on an allocation driver of pay.

8.23 Cartesian noted that "this cost sub-group has a large [✂] transfer charge transaction which relates to central overhead charges including HR and Finance)."[130] We consider transfer charges in more detail in Section 9. Cartesian did not identify any concerns regarding the use of these attribution bases. We have reviewed Cartesian's analysis and are of the view that there is no reason to consider these attribution bases further in this consultation.

[130] Cartesian, Cost Attribution Review, section 5.3.6.1

3. Corporate Costs

Description of cost category

8.24 In 2013/14, BT allocated costs of [✂ £500m to £1,000m] to Corporate Costs (AG112).[131] BT's DAM states that these costs "relate to head office type expenses e.g. the Chairman's office and the Group secretariat."[132]

8.25 Based on the description provided in BT's DAM and further information obtained from BT, we understand that Corporate Costs include the following:

- *Labour costs for corporate departments.* This includes pay and other administration costs for staff working within BT Group, including the Chairman's and Chief Executive's costs together with other Group functions such as strategy, vendor support, legal, finance, and human resources.
- *TSO CIO overhead costs*. These costs relate to staff and services located within BT's TSO division. These staff and service costs relate specifically to the Chief Information Office. There is a Chief Information Office for each of the BT divisions including BT group.
- *TSO IT service costs*. These costs relate to BT's internal IT services. These are provided for network services, IT desktop services, and IT support for employees.
- *Central Employee costs relating to all BT employees*. These costs relate to employees in all BT divisions. These costs include employee liability insurance, death in service benefits, healthcare, and employee broadband offers.
- *Other insurance costs*. These costs relate to property damage insurance covering business interruptions and employment practice liability insurance.
- *Overseas finance services*. These costs relate to staff and operations located offshore that provide central financial services and support to all BT divisions.
- *Outsourced HR services*. These costs relate to BT's learning academy and include management and support.

8.26 In the DAM, BT explains that Corporate Costs is an activity pool including costs in support of the Chairman's office, Group Personnel, Chief Technology Officer and Technology Director.[133] BT explains that these activities tend to be of a 'head office' nature and relate to head office type expenses e.g. the Chairman's office and the Group secretariat. BT has explained that the purpose of these head office activities is management of: employees within the company, and assets in the company to create a return.

[131] In this section we use AG references to identify specific Activity Groups
[132] BT's 2014 DAM, page 124
http://www.btplc.com/Thegroup/RegulatoryandPublicaffairs/Financialstatements/2014/DAM2014.pdf
[133] BT's 2014 DAM, page 34 and 124

Key attribution methodologies

8.27 The Corporate Costs attribution driver has two inputs:[134]

- Factorised current and capitalised pay, and
- Return on assets (RoA).

8.28 Cartesian explains that factorised pay is simply a monetary way of reflecting the number of employees, stating the result of using factorised[135] pay rather than actual pay is that BT essentially reflects the number of employees (FTE) in a business unit. BT believes that attributing BT Group costs based on number of employees in different business units is the most appropriate measure of attribution. The reason for using factorised pay rather than number of employees is to produce a financial value which can be combined with the Return on Assets factor. In addition, according to BT ASPIRE can only accept financial data and cannot accept FTE numbers as an input."[136]

8.29 The return on assets is calculated by using the net book value of assets and multiplying this value by a weighted average cost of capital of 10.8%. The results of factorised pay and RoA are then combined to determine the attribution weighting.

Review of attribution methodologies

8.30 Cartesian identified concerns relating to the principles of Objectivity and Causality.

8.31 Cartesian noted the following issues with BT's attribution and apportionment method:

- "The methodology is not objective as it uses an arbitrary weighting factor. A WACC of 10.8% is used to effectively weight the importance of pay and asset values in the apportionment. Whilst this value may be reasonable, we understand that it is not directly driven by BT's actual WACC. This arbitrary factor therefore raises concerns regarding objectivity."[137]
- "The use of factorised pay may not be objective. As the methodology uses factorised pay, the weights of attribution are skewed heavily towards the business unit that has more employees." [138]
- "Allocating a broad pool of common costs on the basis of Pay and RoA does not appear causal. BT justifies the use of this apportionment methodology in the DAM on the basis that head office activities encompass management of the company's employees and assets. We have two concerns regarding the causality of this approach:
    - The time and effort required to manage assets may not correlate with the value of the assets. We note, for example, that although BT's duct

[134] Cartesian, Cost Attribution Review, section 6.3.5
[135] Factorised pay reflects what a business unit's pay costs would be if their staff all received the average pay across BT. It appears to be a means of converting headcount into a monetary value that can be combined with pay and return on assets to give a combined attribution basis.
[136] Cartesian, Cost Attribution Review, paragraph 6.3.5.3
[137] Cartesian, Cost Attribution Review, paragraph 6.3.5.4
[138] Cartesian, Cost Attribution Review, paragraph 6.3.5.4

network has a high asset value (c.30% of total MCE) it is unlikely to demand 30% of head-office attention.

- The employees under the management of head office are also working to achieve a return on the company's assets. Combining Pay and ROA may therefore lead to an aspect of double-counting." [139]

8.32 Cartesian explained that while it "recognises that some of the costs attributed to AG112 purely relates to assets and hence a better approach may be to take a more granular approach by further breaking down AG112 into an asset related cost category and a general management related cost category."[140]

8.33 Cartesian explain that the objective of the granular approach would be "to identify costs that should be attributed based on RoA or NBV as opposed to 'Pay and RoA'. All other costs could be attributed based on Pay."[141]

8.34 We do not consider that the attribution methodologies currently used for these costs follow the principles of Causality and Objectivity, for the following reasons:

- The use of a single allocation methodology for such a large cost category does not provide an objective or causal basis for cost allocation.
- The use of a "combination" allocation methodology does not provide an objective or causal basis for cost allocation.
- The rules included within the combination allocation methodology may not provide an objective or causal basis for cost allocation.

8.35 We consider each of these points in more detail, below.

8.36 Given the scale of the costs in this category we would not expect a single allocation rule to provide the most objective or causal basis for allocating these costs. Within this overall category of costs, we would expect to see different sub-categories of costs with different cost drivers. BT's choice of a single allocation rule (a "combined" - pay and assets-basis) indicates that BT considers that some of the costs are driven by people and some are driven by assets.

8.37 Given the scale of these costs, we do not consider that BT's choice of a "combined" allocation rule follows the principle of Objectivity; it appears to be based on assumption (that, on average, all of these costs are caused equally by asset value and people) rather than an assessment of all available data to determine the most appropriate attribution methodologies. As it is possible to break this cost down into smaller categories (see below), we consider that the attribution rules should also be determined on a more granular basis than currently done by BT. Even if, as BT's attribution rule implies, some costs are driven by the management of people and others by the management of assets, this approach would may it possible to identify the sub-categories of costs that are caused by people and the costs that are caused by assets, and allocate each sub-category accordingly.

[139] Cartesian, Cost Attribution Review, section 6.3.5.4
[140] Cartesian, Cost Attribution Review, section 6.3.5.5
[141] Cartesian, Cost Attribution Review, section 6.3.5.5

8.38 As discussed above, BT's DAM states that these costs "relate to head office type expenses e.g. the Chairman's office and the Group secretariat."[142] However, as explained below, these costs appear to relate to a number of different activities which we do not appear to fall within this description. For example, we consider HR costs relating to employee learning and development to be different in nature from, say, property damage insurance costs.

8.39 Given the scale of the attributed costs in this category [✂ £500m to £1,000m] we would not expect a single attribution rule to provide the most objective or causal basis for allocating these costs. Within this overall category of costs, we would expect to see different sub-categories of costs with different cost drivers. In light of the above, we consider that BT's Corporate Costs attribution methodology is clearly inappropriate.

Proposed changes to attribution methodologies

8.40 Having explained why we do not consider that it is appropriate to allocate all of the Corporate Costs using the current attribution methodology, we now consider whether there may be alternative allocation rules that could provide a more appropriate basis. To do so, we first disaggregated the total costs of [✂ £500m to £1,000m] into smaller cost categories, based on BT's OUC codes, as follows:

Table 8.3 Breakdown of Corporate Costs

BT's OUC and cost line description	CCA £m
a. Employer's Liability insurance	[✂ £10m to £50m]
b. Employment Practice Liability	[✂ £0m to £10m]
c. Employee healthcare	[✂ £10m to £50m]
d. Employee broadband offer	[✂ £10m to £50m]
e. Employee death in service benefit insurance	[✂ £0m to £10m]
f. Business interruption insurance	[✂ £10m to £50m]
g. Motor vehicle insurance	[✂ £10m to £50m]
h. BT TSO Research & Innovation	[✂ £50m to £100m]
i. BT TSO Architecture and Global IT Platforms	[✂ £50m to £100m]
j. Group Finance	[✂ £50m to £100m]
k. BT TSO Chief Information Office for Group	[✂ £50m to £100m]
l. Group Human Resources	[✂ £10m to £50m]
m. Corporate Communications	[✂ £10m to £50m]
n. Group Legal	[✂ £10m to £50m]
o. Reporting planning analysis	[✂ £10m to £50m]
p. Corporate Special Projects	[✂ £10m to £50m]
q. Learning Academy - HR	[✂ £10m to £50m]
r. Strategy, Policy and Portfolio	[✂ £10m to £50m]
s. BT TSO Chief Information Office for BT Wholesale	[✂ £10m to £50m]
t. BT TSO Chief Information Office for Retail	[✂ £0m to £10m]
u. Other Costs	[✂ £0m to £10m]
TOTAL AG112	[✂ £500m to £1,000m]

[142] BT's 2014 DAM, page 124

8.41 We then considered the nature of each cost category and identified an attribution methodology that we consider meets the requirements for causality and objectivity.

a. Employer's Liability insurance [✂ £10m to £50m]

8.42 We understand that Employer's Liability insurance relates to the insurance cover BT pay to cover any claims for accidences at work. BT has explained that this insurance provides cover in respect of BT's liability for death; injury or disease of its UK based employees arising out of their employment. It is a compulsory class of insurance under the 1969 Employers' Liability (Compulsory Insurance) Act.

8.43 Therefore we would expect the cost of Employer's Liability insurance to be linked to the number of employees.

8.44 We considered whether this cost would vary more or less depending on the level of pay of those employees, in which case an allocation rule linked to pay might be appropriate. However, we consider that there are likely to be other factors that could impact the total costs, such as the nature of the work that the employees do and it would not be appropriate to single out pay as the relevant way of allocating more or less cost to different groups of employees. It is possible that the cost of insuring employees may vary with the nature of the work they do (for example the cost of insuring an engineer might be greater than the cost of insuring an office worker). However, to the extent this might be the case, we have not been able to identify a practicable way of taking this into account in proposing an alternative attribution bases.

8.45 We therefore propose that these costs should be allocated based on the number of employees.[143]

b. Employee practice liability insurance [✂ £0m to £10m]

8.46 We understand that Employee practice liability insurance relates to the insurance cover BT pays to cover future potential costs that may occur as a result of claims or action taken by BT employees. BT have explained that this insurance provides cover for liability arising from a wrongful employment act, such as discrimination, wrongful termination of employment, failure or refusal to hire or promote, harassment, retaliation, defamation and breach of any employment contract.

8.47 We consider that similar arguments apply to employee practice liability insurance as to employee liability insurance. We therefore propose that these costs should be allocated on the basis of the number of employees.

[143] BT's cost attribution system (see section 5) allocates costs to the different levels of their cost exhaustion system. When we propose that these costs should be allocated based on the number of employees we mean that each division, market, service, and component (i.e. the different levels of the cost exhaustion system) should be allocated employee liability insurance costs based on the number of employees at that level of the cost exhaustion system divided by the total number of employees within BT as shown in the following formula $\boldsymbol{x = \text{OUC's costs X } [\frac{\text{number of employee at level x}}{\text{Total employees within BT}}]}$, where x = allocation of employee practice liability costs at a specific level of BT's cost exhaustion system.

c. Employee healthcare insurance [✂ £10m to £50m]

8.48 We understand that Employee healthcare insurance relates to the healthcare cover BT provides for its employees.

8.49 We consider that similar arguments apply to employee healthcare insurance as to employee liability insurance; however the cost of healthcare may vary with grade or pay. For example more senior employees may receive higher levels of healthcare cover and some employees may receive no healthcare cover.

8.50 We have considered whether additionally using employee grade or pay would provide a more accurate allocation basis but on balance consider that the additional complexity would not produce a more accurate allocation basis. We therefore propose that these costs should be allocated on the basis of the number of employees.

d. Employee broadband offer [✂ £10m to £50m]

8.51 We understand that the costs of the employee broadband offer relates to the free broadband service offered to BT staff. BT have explained that all UK based BT people are eligible for free broadband. This cost is the charge raised by BT Consumer (BT Retail in 2013/14) at BT Broadband prices.

8.52 We therefore propose to allocate these costs based on the number of employees.

8.53 Although not related to the choice of attribution methodology, it is not clear to us that the way BT has calculated the cost of providing this benefit – by reference to the retail price, rather than cost of provision - is appropriate. We will consider this further and invite stakeholders' views on this point.

e. Employee death in service benefit insurance [✂ £0m to £10m]

8.54 We understand that employee death in service benefit insurance costs relates to the insurance cover BT pay to cover the event of a fatality at work that would result in a financial pay out.

8.55 For the purpose of establishing an allocation basis we have assumed that the amount received for death in service varies depending on employee pay. We would therefore expect the cost of the insurance to vary with the pay of the employees who receive this benefit.

8.56 We therefore propose that this cost should be allocated on the basis of previously allocated pay costs that have been allocated within the divisions, markets, and services. [144]

[144] BT's cost attribution system (see section 5) allocates costs to the different levels of their cost exhaustion system. When we propose that these costs should be allocated based on the pay costs of employees we mean that each division, market, service, and component (i.e. the different levels of the cost exhaustion system) should be allocated Employee death in service benefit insurance costs based on pay costs of employees at that level of the cost exhaustion system divided by the total pay costs of employees within BT as shown in the following formula $x = \mathbf{OUC's\ costs\ X}\ [\frac{\mathbf{Pay\ costs\ of\ employee\ at\ level\ x}}{\mathbf{Total\ pay\ costs\ of\ employees\ within\ BT}}]$, where x = allocation of employee practice liability costs at a specific level of BT's cost exhaustion system.

f. Business interruption insurance [✂ £10m to £50m]

8.57 We understand from BT that this insurance provides cover for physical loss or damage to BT Group owned or rented property, including: buildings and contents, plant and machinery. This insurance also covers for the loss of gross profit suffered as a result of property damage.

8.58 We consider it appropriate to assume that should BT reduce the number of properties in a division it would follow that the divisions' allocation of these insurance costs should also reduce. We considered whether the insurance cost was additionally related to the gross profit of a division, but we could not establish a driver that would incorporate this and property costs. We considered the use of an attribution rule based on return on assets might be appropriate in this situation, but it is not clear to us that this would appropriately link the insured loss of profit to the specific assets. Therefore we propose to allocate these costs in line with previously allocated property costs.[145]

g. Motor vehicle insurance [✂ £10m to £50m]

8.59 We understand that Motor vehicle insurance costs relate to the insurance costs incurred by BT fleet services that provide all the cars and vehicles to BT group and BT divisions.

8.60 In the absence of information to the contrary, we propose that these costs should be allocated to BT fleet and allocated to products and services in line with other BT fleet costs. We consider that these costs are related to the cost of the BT fleet of cars and vehicles, and therefore propose to allocate these costs in line with all previously allocated BT fleet costs.[146]

h. BT TSO Research & Innovation [✂ £50m to £100m]

8.61 BT TSO Research & Innovation include costs relating to employee computing equipment and services. This includes the depreciation costs of desktop and laptop computers, printing devices, network storage services, and other IT equipment used to support BT's employees.

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[145] BT's cost attribution system (see section 5) allocates costs to the different levels of their cost exhaustion system. When we propose that these costs should be allocated based on the previously allocated property costs we mean that each division, market, service, and component (i.e. the different levels of the cost exhaustion system) should be allocated these OUC costs based on the previously allocated property costs at that level of the cost exhaustion system divided by the total previously allocated property costs within BT as shown in the following formula $\boldsymbol{x = \text{OUC's costs X } [\frac{\text{Previously allocated property costs at level x}}{\text{Total previously allocated property costs within BT}}]}$, where x = allocation of employee practice liability costs at a specific level of BT's cost exhaustion system.

[146] BT cost attribution system (see section 5) allocates costs to the different levels of their cost exhaustion system. When we propose that these costs should be allocated based on previously allocated BT fleet costs we mean that each division, market, service, and component (i.e. the different levels of the cost exhaustion system) should be allocated this OUC's costs based on the previously allocated BT fleet cost at that level of the cost exhaustion system divided by the total previously allocated BT fleet costs within BT as shown in the following formula $\boldsymbol{x = \text{OUC's costs X } [\frac{\text{previously allocated BT fleet cost at level x}}{\text{Total previously allocated BT fleet cost within BT}}]}$, where x = allocation of OUC's costs at a specific level of BT's cost exhaustion system.

8.62 On this basis, we would expect that the level of these costs will be linked to the number of employees within a division.

8.63 We would expect that divisions with a higher number of employees will use more of the assets (i.e. computers and network devices) that make up this cost pool. There is, therefore, a causal link between these costs and the number of employees.

8.64 We propose that BT TSO research and innovation costs should be allocated using the number of employees in each division, market, and service.

i. BT TSO Architecture & Global IT Platforms [✂ £50m to £100m]

8.65 BT TSO global architecture and global IT platforms costs relate to a range of software and software development costs. At least 50% of these costs relate to IT licences for IT equipment and systems, these being systems and equipment BT use for their own internal use and not for the provision of services and products for external customers. Other costs included in this category relate to 'other software development' costs for the development of corporate systems and what BT term 'blue sky development'.

8.66 Relating these costs to a specific activity driver is not straightforward. We have considered whether these costs are related to the number of employees as IT software licence costs may change with the number of desktop and laptop computers or the number of application users. However it is not clear that this is the case. Indeed some of the costs in this category (such as those described as 'blue sky thinking' by BT) would not appear to be linked to the number of employees.

8.67 In the absence of information to the contrary, we propose to allocate these costs in line with all previously allocated IT costs.[147]

j. Group Finance [✂ £50m to £100m]

8.68 We understand that Group finance costs relate to costs for an overseas operation that provides finance support to all BT divisions. These costs include the salary and other operating costs of an overseas unit that provide a wide range of finance, billing, administration, and other activities. BT has also explained that this cost includes the costs of Group Financial Control, Internal Audit, Tax and Treasury, Group Reporting, Group Regulatory Finance, Investor Relations and Corporate Finance.

8.69 At this stage we have not been able to establish a clear cost driver. It appears that BT has recently changed the way it thinks about these costs as, in its 2015 Change Control Notification it has proposed a change to the way these types of costs are attributed into AG112.[148] BT has proposed that instead of the current system that

[147] BT cost attribution system (see section 5) allocates costs to the different levels of their cost exhaustion system. When we propose that these costs should be allocated based on previously allocated IT costs we mean that each division, market, service, and component (i.e. the different levels of the cost exhaustion system) should be allocated these costs based on the previously allocated IT costs at that level of the cost exhaustion system divided by the total of all previously allocated IT costs within BT as shown in the following formula

$$x = \textbf{OUC costs X } [\frac{\textbf{Previously allocated IT costs at level x}}{\textbf{Total previously allocated IT costs within BT}}]$$, where x = allocation of the OUC's costs at a specific level of BT's cost exhaustion system.

[148] http://www.btplc.com/Thegroup/RegulatoryandPublicaffairs/Financialstatements/2015/ChangeControlNotification-31March2015.pdf section 3.16

simply allocates all these types of costs into AG112 it should directly allocate a proportion of these costs that relate to overseas businesses directly into residual. BT proposes the ratio of these costs that relate to overseas operations be based on the headcount of overseas operation compared to BT's total headcount.

8.70 We have not fully considered the implications, if any, of these recent changes for our understanding of these costs and the cost drivers. In light of BT's recent proposal, we considered whether headcount would also be appropriate to use to attribute these costs. However, at this stage we consider that the costs of the group finance team are more closely linked to all the activities of BT Group (rather than the number of people who work there) and therefore propose that these costs should be allocated in line with previously allocated total costs. [149]

k. BT TSO Chief Information Office for Group [✂ £50m to £100m]

8.71 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."[150]

8.72 We understand that these costs are associated with providing data integrity and security for all of BT's businesses, including not only IT costs but also process design and general IT protocol activity costs. The F8 accounting code shows that the costs included in these OUC's are pay and management costs, external IT contractor costs, software costs, and other costs.

8.73 We could not identify a clear driver of these costs. We considered whether these costs are related to the amount of other IT costs incurred. If so, this would assume that divisions with higher 'other IT costs' would incur more of these CIO costs when compared to divisions with lower other IT costs. We also considered whether these costs are associated with the volume of data stored, or whether there is any other IT activity that could be identified to drive these costs.

8.74 We have therefore assumed that all BT's activities rely to some extent on CIO support. Therefore, in the absence of information to the contrary we propose that these costs should be allocated in line with all previously allocated total costs.

l. Group Human Resources [✂ £10m to £50m]

8.75 Group Human Resources relate to human resource activities that support all of BT's divisions. We understand that these costs include: the setting and maintaining of BT group wide HR policies and processes, the management of BT's divisional HR staff and activities, and other general HR activities that cover all BT divisions. The cost types are predominately pay costs for management and other clerical staff.

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[149] BT's cost attribution system (see section 5) allocates costs to the different levels of their cost exhaustion system. When we propose that these costs should be allocated based on all previously allocated total costs we mean that each division, market, service, and component (i.e. the different levels of the cost exhaustion system) should be allocated these costs based on the previously allocated total costs at that level of the cost exhaustion system divided by the total of all previously allocated total costs within BT as shown in the following formula

$$x = \textbf{OUC costs X } [\frac{\textbf{Previously allocated total costs at level x}}{\textbf{Total previously allocated total costs within BT}}]$$, where x = allocation of the OUC's costs at a specific level of BT's cost exhaustion system.

[150] BT's 2014 DAM, page 41

8.76 We propose that these costs should be attributed based on the number of employees.

m. Corporate Communications [✂ £10m to £50m]; n. Group Legal [✂ £10m to £50m]; and o. Reporting Planning Analysis [✂ £10m to £50m]

8.77 These three groups of costs include those costs that we consider to be by nature 'corporate overheads.' Predominately these are pay costs for management and other administration staff supporting the whole of the BT's Group of divisions and ensuring that BT's corporate responsibilities are met.

8.78 Corporate communication is used to record pay costs for the management and administration staff. We understand they carry out activities such as, producing the internal BT newsletter, communicating externally with the media and other parties, and communicating internally with BT's divisions and staff.

8.79 Based on the OUC description and in the absence of further information from BT we have assumed that Group legal costs relate to ensuring that the legal needs of BT group and their corporate activities are met.

8.80 Reporting, planning, and analysis we understand is responsible for the planning and reporting across BT group. These costs are related to the production of BT's annual report and for ensuring consistency across BT's reporting divisions.

8.81 For all the above OUC's we could not identify a clear single driver of costs. We considered whether direct pay costs or number of employees would be an appropriate basis for allocation but concluded that these costs may not be related to the number of employees, or the pay of employees. For example, corporate communication costs OUC CR are unlikely to vary or change as a result of a change in the number of employees.

8.82 It seems logical that all activities that incur costs for BT also incur the need for these corporate overhead support costs. Therefore, it seems appropriate that these costs should be allocated based on all previously allocated total costs.

8.83 Therefore our proposal is that BT should allocate these costs in line with all previously allocated total costs.

p. Corporate Special Projects [✂ £10m to £50m]

8.84 We understand that Corporate Special Project costs relate to the pay for management and other administration staff working on Transformation projects. We understand that this work is to ensure that BT improves its operational efficiency and carries out its activities in the most efficient way, using the most efficient systems and processes. The purpose of these activities is to reduce BT's total operational costs. It seems logical that the higher the costs in a division the higher the focus would be from the staff included in this cost pool.

8.85 We therefore propose that these costs should be allocated based on all previously allocated total costs.

q. Learning Academy [✂ £10m to £50m]

8.86 These costs relate to BT's Learning Academy. BT explains that "the Academy is BT's new approach to learning, based on the world's best thinking. It's a way for people to

continuously develop their skills and careers and provides tools, programmes and communities to help learn share and collaborate."

8.87 These costs are related to BT's employees. It would seem logical that these costs would change in line with the number or costs of employees in a BT's divisions.

8.88 Whether these costs relate more closely to the number of employees or the direct pay of employees will depend on whether these costs are reasonably similar for each employee or whether employees that are paid more require more training and career guidance.

8.89 In the absence of other information it seems appropriate that employees paid more would require a higher degree of training investment. Therefore our proposal is that BT should allocate these costs based on the direct pay of employees.

r. Strategy, Policy and Portfolio [✂ £10m to £50m]

8.90 Strategy, Policy and Portfolio include costs relating to an administration charge for networks and services that Ofcom charges Communication Providers.[151] This charge is calculated by Ofcom based on BT's relevant revenue. The charge is, therefore, directly related to the revenue included in BT's relevant revenue calculation. Should the relevant revenue reduce then the Ofcom charge would also reduce.

8.91 We consider it is appropriate to allocate this charge within BT's divisions and services based on relevant revenue. Those divisions that cause the administration charge to be incurred would be allocated those costs that they cause to be incurred.

8.92 Therefore our proposal is that BT should allocate these costs on the basis of relevant revenue. [152]

s. BT TSO Chief Information Office for BT Wholesale [✂ £10m to £50m]; and t. BT TSO Chief Information Office for Retail [✂ £0m to £10m]

8.93 We understand that the TSO Chief Information Office costs for wholesale and retail are associated with providing data integrity and security for BT wholesale and BT retail respectively, including not IT costs plus process design and general IT protocol activity costs. The F8 accounting code shows that the costs included in these OUC's are mainly pay and management costs, external IT contractor costs, software costs, and other costs.

8.94 BT has told us that the costs included in BT TSO Chief Information Office for BT Wholesale are exclusively related to BT wholesale activities, and similarly the costs included in BT TSO Chief Information Office for Retail are exclusively related to BT retail activates.

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[151] http://www.ofcom.org.uk/content/about/annual-reports-plans/tariff-tables/Tariff_Tables_2015_16.pdf

[152] BT's cost attribution system (see section 5) allocates costs to the different levels of their cost exhaustion system. When we propose that these costs should be allocated based on relevant revenue we mean that each division, market, service, and component (i.e. the different levels of the cost exhaustion system) should be allocated these costs based on the relevant revenue at that level of the cost exhaustion system divided by the total of total relevant revenue within BT as shown in the following formula $x = \textbf{OUC costs X } [\frac{\textbf{relevant revenue at level x}}{\textbf{Total relevant revenue within BT}}]$, where x = allocation of the OUC's costs at a specific level of BT's cost exhaustion system.

8.95 Therefore we propose in the first instance that these costs are directly attributed to their appropriate BT divisions. Subsequently within these BT divisions we propose for the same reasons as discussed for OUC 'BT TSO Chief Information Office for Group' to allocate these costs based on previously allocated total costs.

u. Other costs

8.96 We have not considered in detail those Corporate Cost OUCs with costs less than [✂ £0m to £10m]. This group of OUC's includes a number of OUC's that appear from the OUC description to relate to a wide range of activities and cost categories. In some cases these OUC's also include negative costs.

8.97 In the absence of more information (and assuming that these costs relate to a range of activities we consider it appropriate to use an allocation basis that attributes these costs based on all the activities BT carries out.

8.98 Therefore our proposal is that BT should allocate all Corporate Cost OUCs with costs less than [✂ £0m to £10m] on the basis of all previously allocated total costs.

4. TSO Support Function

Description of cost category

8.99 TSO Support Functions (AG103) accounted for [✂ £100m to £150m] of costs on a CCA basis in 2013/14.

8.100 TSO is an internal service unit within BT that is a cost centre. Responsible for BT's global networks and systems it supports BT's customer-facing lines of business. BT's TSO division is also responsible for the long-term technology strategy, research and innovation programmes, including managing BT's worldwide patent portfolio.

8.101 TSO manages the voice, data and TV networks and IT applications which make up the core infrastructure for BT's products and services. TSO employees design and deliver the large-scale global managed network services which are used by all lines of business.

8.102 Unlike other BT divisions, such as consumer, business, global services, Openreach, and BT wholesale, TSO is a cost centre and not a profit division. As such it attracts no revenue directly. Therefore, all of the costs in TSO need to be allocated to BT's other divisions (which are profit centres).

8.103 Having considered the information contained in the DAM and subsequently provided by BT we understand that these TSO Support Functions (AG103) costs include:

- *Redundancy costs*: These relate to employees from within BT's TSO division that have been made redundant.
- *IT services costs*: Costs relating to development activities performed by software development engineers that are based overseas. These activities generally cover BT group systems.
- *Career transition centre*: These costs relate to employees that have been redeployed from one BT area and are looking for employment in another BT division.

- *Overhead functions:* These costs include the pay and other administration costs for staff working within the overheads functions of the TSO division. These departments include human resources, strategy, operations, Finance, and network services and support.

- *BT fleet services*: These costs relate to motor vehicles and other services that BT fleet provides to BT's TSO division.

Key attribution rules

8.104 BT explains in its DAM that TSO Support Functions (AG103) is used to apportion BT TSO's overall support functions costs, such as the BT TSO Finance team, Human Resources function and BT TSO Strategy function. [153]

8.105 The ASPIRE system uses the following costs to generate an apportionment allocation:

- Salary expenses for BT TSO (current and capital account)

- Net book value of Core fixed assets, excluding the following fixed asset classes: Copper; Fibre; Land and Buildings; Vehicles; Office Machines; and Materials Awaiting Installation.

8.106 The allocation of these costs is based on direct pay and return on assets which BT TSO directly manages.

8.107 BT has stated that the purpose of these TSO support function activities is generally seen as being two-fold:

- Management of the employees within BT TSO.

- Management of those assets managed by BT TSO to create a return.

8.108 BT has explained that:[154]

- The TSO Support Functions (AG103) base draws on the result of the previously attributed pay costs within the ASPIRE system following the base reference stage.

- The 'return on assets' percentage if then applied to the net book value of each of the fixed asset class identified by the Regulatory Accounting system. Certain fixed asset classes are specifically excluded (as described above). The return on assets percentage is determined by Ofcom. This is applied to ensure that the driver reflects the BT TSO support function activities of 'managing those assets BT TSO manages.

- By weighting the previously attributed pay costs together with the fixed asset values (taking into account the fact that the asset amounts have already had the return on assets and investment percentages applied to them) an apportionment base for TSO Support Functions (AG103) is derived.

[153] BT's 2014 DAM, page 34 and 124
[154] BT's 2014 DAM, page 123

8.109 Cartesian explain that the final stage of the cost attribution process for AG103 is to apportion all costs to other activity groups and plant groups. The apportionment is based on a weighted combination of the TSO pay costs and TSO-managed assets. Cartesian then explains the following: [155]

- BT does not sum pay and asset values directly; rather, the NBVs are first multiplied by a WACC (RoA percentage) to determine the annual return on asset. This value is then combined with Pay to determine an apportionment base. A single WACC of 10.8% is used throughout.

- The attribution base excludes fixed asset classes that are not managed by TSO, namely: Copper; Duct; Fibre; Land and Buildings; Vehicles; Office Machines; and, Materials Awaiting Installation.

- In contrast to AG112, actual pay costs are used rather than factorised pay for the purposes of cost attribution. Both capitalised and non-capitalised pay costs are included. When discussed with BT the reason for the difference in methodology, Cartesian was informed that BT management believed that using 'Factorised Pay' (i.e. Pay that reflects number of FTE in each division) is a more causal and objective approach to attributing AG112 costs versus the standard 'Pay and RoA'.

Review of attribution rules

8.110 In its assessment of the Pay and Return on Assets allocation method used for the TSO Support Functions (AG103) Cartesian identified the same concerns in relation to the principles of Objectivity and Causality as it had identified for AG112.[156]

8.111 Similarly Cartesian "suggests that BT considers taking a more granular approach to defining generic costs categories such as AG103. In this approach BT could separate costs that have a causal relationship to BT's key assets and then use an appropriate attribution method to attribute costs over an asset related cost categories. Other generic costs should be attributed on the basis of Pay."[157]

8.112 As with the activity group General Overheads (AG112) discussed above we also have concerns with the allocation methods BT used for these costs. This is discussed in detail above but, in summary, we do not consider that the current allocation rules comply with the principles of Causality and Objectivity, because the use of a single allocation rule for such a large cost category does not provide an objective or causal basis for cost allocation and the rules included within BT's combination allocation rule in particular does not appear to provide an objective or causal basis for cost allocation.

8.113 We therefore consider that BT's cost attribution rule used for the TSO Support Functions (AG103) is obviously inappropriate.

[155] Cartesian, Cost Attribution Review, section 6.3.5
[156] Cartesian, Cost Attribution Review, section 6.3.6.5
[157] Cartesian, Cost Attribution Review, section 6.3.6.5

Proposed changes to allocation rules

8.114 We now consider what allocation rules might provide an appropriate basis. Our first step was to break the TSO support function costs of [✂ £100m to £150m]into smaller cost categories, based on BT's OUC codes, as follows:

Table 8.4 Breakdown of TSO Support Functions

OUC and cost line Description		CCA £m
a.	Redundancy payments	[✂ £10m to £50m]
b.	IT Services Subcon Offshore SGA]	[✂ £10m to £50m]
c.	BT TSO Human Resources & Communications	[✂ £10m to £50m]
d.	BT TSO Service, Strategy and Operations	[✂ £10m to £50m]
e.	BT TSO Finance	[✂ £0m to £10m]
f.	BT TSO Chief Information Office for Global Services	[✂ £0m to £10m]
g.	BT TSO General Infrastructure Services	[✂ £0m to £10m]
h.	BT Fleet	[✂ £0m to £10m]
i.	BT TSO Global Network Services Management and Support	[✂ £0m to £10m]
j.	Other Costs	[✂ £0m to £10m]
	Total	[✂ £100m to £150m]

8.115 We then considered, for each cost category in turn, an appropriate method for the allocation of costs throughout BT's divisions and markets.

a. BT TSO Centre - redundancy payments [✂ £10m to £50m]

8.116 BT TSO Centre redundancy payments include costs that BT describes as Newstart redundancy payments.

8.117 We understand that Newstart redundancy payments are those payments made to BT employees as a result of BT's transformation projects (see the cost description above for OUC CP – 'Corporate special projects'). Payments could relate to all types of staff, including engineers, managers, and sales staff. We consider that it is appropriate to view these costs as a pay related cost. We assume redundancy payments are related to the pay of the employees being made redundant.

8.118 We considered whether these costs should be allocated in the same way that the employees pay costs are allocated. For example, if an employee previously worked within the Openreach division supporting the business connectivity markets, then their redundancy costs should be allocated to the business connectivity markets within Openreach. However, given that employees may work in a number of different BT divisions across multiply markets we considered it impractical to establish over the life of an employee where their costs had been previously allocated.

8.119 Therefore we propose to allocate Newstart redundancy payment costs based on BT's actual employee pay costs.

b. IT Services Subcon Offshore SGA [✂ £10m to £50m]

8.120 BT TSO Centre - IT Services Subcon Offshore SGA costs relates to various IT costs, mostly incurred offshore providing software and system development services to BT's TSO division.

8.121 We consider that the closest activity drivers for these costs are all other IT activities. This assumes that these services cover BT's full range of IT services and systems.

8.122 Therefore we propose that BT should allocate these costs based on all other previously allocated IT costs.

c. TSO Human Resources & Communications [✂ £10m to £50m]; d. BT TSO Service, Strategy and Operations [✂ £10m to £50m]; and e. BT TSO finance [✂ £0m to £10m]

8.123 BT TSO Human Resources & Communications, BT TSO Service, Strategy and Operations, and BT TSO Finance include costs relating to the pay costs for management and clerical staff.

8.124 We understand from BT that these are the types of costs we would consider typically to be 'General Overheads.' These costs are similar to those corporate overhead OUC costs consisting mainly of pay for management and administration staff in Corporate Costs (AG112) described above. These OUC's capture costs relating to the management and administration staff that provides support to BT's divisions ensuring that BT Group's corporate responsibilities are met. We assume that these are general corporate overhead costs relating to activities similar to that required by any publically listed company.

8.125 We consider that these costs are likely to relate to all the activities that BT carries out and there does not appear to be a single activity or allocation driver. We considered direct pay costs or number of employees but concluded that these costs may not be related to the number of employees or the pay or employees. For example, the costs in OUC TF – 'BT TSO Finance' may not vary or change as a result of a change in the number or pay costs of employees.

8.126 Because these costs are likely to relate to all the activities that BT carries out, we propose to allocate these OUC's based on all previously allocated total costs.

f. BT TSO Chief Information Office for Global Services [✂ £0m to £10m]

8.127 We understand that the TSO Chief Information Office costs for global services are associated with providing data integrity and security for BT Global Services, including not only IT costs but also process design and general IT protocol activity costs. The F8 accounting code shows that the costs included in this OUC are mainly pay and management costs, external IT contractor costs, software costs, and other costs.

8.128 BT has told us that the costs included in BT TSO Chief Information Office for BT global services are exclusively related to BT Global Services activities.

8.129 Therefore we propose in the first instance that these costs are directly attributed to their appropriate BT division, global services. Subsequently within this BT division we propose (for the same reasons as discuss for 'BT TSO Chief Information Office for Group') to allocate these costs based on previously allocated total costs.

g. BT TSO General Infrastructure Services [✂ £0m to £10m]

8.130 BT TSO General Infrastructure Services costs relate to what BT term the "Career Transition Centre". We understand that this is the pay and associated staff costs relating to employees whose role is no longer required. This may be due to BT's transformation programmes, other restructuring, or reorganising projects. The costs

of these staff are captured by this OUC whilst they are researching opportunities for other positions within BT.

8.131 We consider that these costs are similar in nature to the redundancy costs we discussed above (they are not redundancy costs but they are costs incurred for similar reasons). Therefore we consider that it is appropriate to allocate these costs, as in the case of redundancy costs, based on BT's total direct pay costs for all employees.

8.132 Our proposal is that BT should allocate BT TSO General Infrastructure Services based on BT's actual direct pay costs for all employees.

h. BT Fleet [✂ £0m to £10m]

8.133 BT Fleet costs relate to a range of cost categories associated with the costs of providing BT fleet services. It is unclear why these costs would not be allocated to BT fleet directly and allocated to products and services in line with other BT fleet costs.

8.134 In the absence of any further information we consider, similar to OUC CD motor insurance in the corporate costs activity group, we propose to allocate these BT fleet costs in line with all previously allocated BT fleet costs.

i. BT TSO Global Network Services Management and Support [✂ £0m to £10m]

8.135 BT TSO Global Network Services Management and Support costs relate to the pay for management and clerical staff working to support network services globally. We consider that these activities seem to relate to all IT activities in the same manner as IT Services Subcon Offshore SGA described above.

8.136 Based on the OUC description, and in the absence of further information from BT we propose to allocate these costs based on all previously incurred IT costs.

j. Other costs

8.137 We have not considered in detail those TSO support functions with costs less than [✂ £0m to £10m]. This group of OUC's include a number of OUC's that appear from the OUC description to relate to a wide range of activities and cost categories. These OUC's also in some cases include negative costs.

8.138 In the absence of more information and considering our assumption that these OUC's include costs relating to a wide range of activities we consider it appropriate to use an allocation basis that attributes these costs based on all the activities BT carries out.

8.139 Therefore our proposal is that BT should allocate all TSO support functions OUCs with costs less than [✂ £0m to £10m] on the basis of all previously allocated total costs.

Openreach Common Costs (COMCOS)

Description of cost category

8.140 In the DAM, BT describes the COMCOS base methodology as one which attributes costs described by BT as Openreach common costs, within Openreach using factorised pay and return on assets.[158]

8.141 Cartesian have explained that the costs include training, internal hospitality, H&S services, stores issues, fleet ICU rental charges and stationery.

8.142 As set out in Cartesian's report,[159] the effect of this methodology is that most of the costs are attributed to the duct and copper cost categories.

Review of attribution rules

8.143 Cartesian raised similar concerns about BT's use of an attribution methodology based on pay and return on assets for these costs as it did regarding the use of this methodology for general overheads.[160] Specifically, it raised concerns regarding objectivity and causality.

8.144 As this methodology only attributes costs incurred by Openreach, within Openreach, it has less of an impact on how costs are apportioned between regulated services on one hand and unregulated services on the other than it does when applied to general overheads.

8.145 However, ahead of a more detailed review of these costs, we have not yet concluded whether this attribution methodology provides an appropriate basis for the attribution of these costs. However, as we have already explained, we do not consider the choice of combined allocation rules follow the principle of objectivity and we do not consider that this particular combined rule will necessarily reflect the activities that cause these type of costs, and it is not clear to us that it will provide an appropriate basis in the case either.

Proposed changes to attribution rules

8.146 We will work with BT to gain a better understanding of COMCOS. Informed by this further analysis and stakeholders' response to the issues raised earlier in this section regarding the use of attribution methodologies based on pay and return on assets, we will consider whether the current methodology is appropriate and, if not, may make proposals about any changes that we consider necessary in the autumn.

Question 8.1: Do you agree with our assessment that BT's use of attribution methodologies based on pay and return on assets for general overheads is clearly inappropriate? Please provide your reasons.

Question 8.2: Where we have proposed alternative methodologies to attribute general overheads in section 8, do you agree that they provide an appropriate and practicable basis? Please provide reasons to support your answer.

[158] BT, 2014 DAM, page 52
[159] Cartesian, Cost Attribution Review, Section 6.2.10.2
[160] Cartesian, Cost Attribution Review, Section 6.2.10.4

Section 9

Review of other attribution methodologies

Introduction

9.1 In Section 8, we considered BT's use of attribution methodologies based on pay and return on assets to attribute general management and overhead costs. In this section we consider some of BT's other attribution methodologies.

Background

9.2 In Section 7, we noted that Cartesian had identified some attribution methodologies that do not appear to comply with the Regulatory Accounting Principles. In Section 8, we considered BT's use of attribution methodologies based on pay and return on assets to attribute general management and overhead costs.

9.3 As summarised on Section 7, Cartesian identified some other concerns regarding the methodologies used by BT and their compliance with the Regulatory Accounting Principles. We consider these concerns in this section alongside some other issues that we have identified during our ongoing work using BT's regulatory financial information.

Potential impact of proposals

9.4 In relation to most issues considered in this section, more work is required before we can establish if, and potentially, how the current attribution rules should change. Therefore, the base year costs included in the 2015 LLCC Consultation do not include any adjustments to the methodologies that we consider in this section.

9.5 If, after further investigation, we conclude that any of the attribution methodologies considered below should be changed it may be appropriate to consult on those changes and their potential impact on the base year numbers in the LLCC.

Review of attribution bases

9.6 As explained in Section 4, we consider that there are circumstances in which various ways of attributing costs may be considered, and there may be arguments for supporting each of these different ways of attributing costs. We also consider that BT remains responsible for the Regulatory Financial Statements and the cost accounting and accounting separation systems.

9.7 We therefore propose to reject only those attribution methodologies which are clearly inappropriate (by reference to the Regulatory Reporting Principles). Where we determine that a cost attribution rule is clearly inappropriate, it is necessary to propose an alternative attribution methodology to be implemented instead.

9.8 In this section, we consider the remainder of Cartesian's concerns relating to BT's choice of attribution methodologies. We do that in two stages. For each attribution methodology identified below, we:

- First, consider whether the current attribution methodology is clearly inappropriate; and

- if we consider that the current attribution methodology is clearly inappropriate, we consider whether we can identify an alternative attribution methodology to be implemented instead.

9.9 As set out below, the answers to these questions is not always straightforward and we consider that more information and analysis is requied before we are able to determine if and how the current attribution rules need to change.

9.10 Our findings are summarised below. We have categorised them as follows:

- Attribution methodologies that we consider to be clearly inappropriate and for which we propose an alternative attribution methodology to be implemented instead;

- Attribution methodologies that we need to investigate further before we can determine whether they are appropriate or not; and

- Attribution methodologies that we do not consider to be clearly inappropriate.

9.11 We consider these in turn below. We also explain that one attribution methodology (for Service Level Guarantees) is being dealt with in the LLCC and is not considered further here.

Clearly inappropriate methodologies

1. Revenue from Sale of Copper and Property Cost Apportionment

Methodologies requiring further review

2. Floor space utilisation
3. Transfer charges (Miscellaneous – Accuracy)
4. Duct Valuation
5. Software depreciation
6. Power Consumption for TSO and Openreach
7. Fibre Gross Replacement Cost

Methodologies that are not clearly inappropriate

8. Profit Weighted Net Replacement Costs (Cumulo rates)
9. Depreciation for 21CN
10. Duct Valuation and Cable Depreciation
11. Light User Scheme (Miscellaneous)
12. TSO billing system

Attribution methodologies considered as part of the LLCC

13. Service Level Guarantee penalties (Miscellaneous)

Inappropriate methodologies

1. Revenue from Sale of Copper and Property Cost Apportionment

Background

9.12 The sale of surplus assets generates two revenue streams for BT:

- profits from disposal of surplus or redundant copper that has been recovered from BT's network; and
- profits or losses from sales of buildings that are no longer required.

9.13 Both revenue streams are separately identified and included as negative operating costs within BT's Regulatory Financial Statements. Cartesian identified issues with the attribution of both. Given their similarities we address both within this section.

9.14 *Sales of copper*. According to BT's 2014 DAM the Sale of Scrap Copper base methodology is used to apportion Other Operating Income received by Openreach from the sale of scrap copper.[161] The description in the DAM states:

> "Income from scrap copper is apportioned to PG986R - Openreach Other Activities), PG118C - D-side Copper Capital and PG980R - Repayment works. Income allocated to PG986R is based on actual cable recovery data from Openreach. The remainder is allocated between PG118C and PG980R based on the amount of capital expenditure on D-side copper cable that is proper to Repayment Works." [162][163]

9.15 Total income from sale of scrap copper was more than [✂ £100m to £150m] in 2013/14. The majority [✂ £100m to £150m][164] was copper extracted from BT's core and backhaul networks.

9.16 We note that the treatment of the scrap value of copper was the subject of some discussion within the 2014 FAMR.[165]

9.17 *Sales of Property.* Profits or losses on the disposal of land and buildings are recorded within BT's regulatory accounting system on the F8 code 209927, "Profit/(Loss) on Disposal of Land and Buildings". BT attributes all such profits to the Retail Residual

[161] BT's 2014 DAM, page 75
[162] BT's 2014 DAM, page 75
[163] We asked BT to clarify the meaning of "proper to Repayment Works". BT explained that this means PG8980R receives a proportion of the total 'Access Copper other operating income' based on the share of capital expenditure for "Openreach repayments capital" to total capital expenditure booked to the class of work LDC". BT answer to question C2(b), 2nd CAR s135, 13 February 2015.
[164] BT response dated 6 March 2015 to question C2(e)of the section 135 notice dated 13 February 2015
[165] This was discussed in two places. Firstly in paragraphs 3.59 to 3.65 in Volume 2. See http://stakeholders.ofcom.org.uk/binaries/telecoms/ga/fixed-access-market-reviews-2014/statement-june-2014/volume2.pdf. Secondly in paragraphs A13.279 to A13.285 in Annex 13. See http://stakeholders.ofcom.org.uk/binaries/telecoms/ga/fixed-access-market-reviews-2014/statement-june-2014/annexes.pdf

Market. Profits from disposal of land and buildings were less than [✂ £2m to £5m] in 2013/14.[166]

Cartesian's assessment

9.18 *Sales of Copper*. Cartesian raised a concern about the treatment of sales of copper within the "Concerns outside RAP" discussion in Section 6.5 of its report. Cartesian noted that most of the sales were attributed to the Wholesale Residual market and that "since the cost of copper is a major contributor of costs within the regulated markets, it is unclear why none of this revenue is used to offset copper costs within the regulated markets."[167] In our view this is a concern about Objectivity as it may have created undue bias towards a part of BT's business.

9.19 *Sales of Property.* In Section 6.3.7.4 of its report Cartesian said "the treatment of income from sale of property is inconsistent." Cartesian noted that income from the sale of property is not attributed to either Group Property and Facilities Management (AG106) or Property Asset Driver (AG412).[168] Cartesian explained that "this income is not attributed to regulated markets because BT does not consider such profits to be part of the normal cost of managing their estate and don't believe it is cost causal to allocate them to AG106."[169] Cartesian noted that the treatment of these sales proceeds was a "different approach to the treatment of the provision from existing leased properties (AG414) due to early termination of lease of office space."[170]

Our assessment – sales of copper

Is the current methodology clearly inappropriate?

9.20 We obtained further information from BT in order to better understand the Sales of Scrap Copper methodology. We found that:

- The bulk of the recoveries in 2013/14 were associated with copper recovered from BT's backhaul and core networks. The net proceeds from these were allocated to the Network Residual business.

- The remaining recoveries are allocated between Repayments Works, which is then also allocated to the Network Residual business, and D-side copper capital, practically all of which is allocated to regulated markets. In 2013/14 only a small amount was allocated to Repayment works.

9.21 Historical and forecast sales of copper provided by BT (table 9.1) confirm that to date most recovered copper comes from BT's backhaul and core networks, although these sales are forecast to fall significantly. Sales from copper recovered from the access network are forecast to remain low, [✂ £2m to £5m]per annum, for the foreseeable future.[171]

[166] BT response dated 27 March 2015 to question A1(e) of the section 135 notice dated 13 March 2015
[167] Cartesian, Cost Attribution Review, section 6.5
[168] Cartesian, Cost Attribution Review, section 5.6.1,and section 5.6.51
[169] AG106 is the activity group that captures and then allocates most Group Property and Facilities management costs. This is described further in Section 5.6.4 of Cartesian's report.
[170] Cartesian, Cost Attribution Review, section 6.3.74
[171] BT response dated 6 March 2015 to question C2(e) & (f) of the section 135 notice dated 13 February 2015

Table 9.1: Historical and Forecast Sales of Scrap Copper

Year	Core/Backhaul	Access Copper	Total
2011/12	[✂ £100m to £150m]	[✂ £0m to £10m]	[✂ £100m to £150m]
2012/13	[✂ £100m to £150m]	[✂ £0m to £10m]	[✂ £100m to £150m]
2013/14	[✂ £100m to £150m]	[✂ £0m to £10m]	[✂ £100m to £150m]
2014/15	[✂ £50m to £100m]	[✂ £0m to £10m]	[✂ £50m to £100m]
2015/16	[✂ £0m to £10m]	[✂ £0m to £10m]	[✂ £0m to £10m]
2016/17	-	-	-

Source: BT responses to Question C2 of 2nd s135 request, CAR project

9.22 The figures in Table 9.1 are higher than those in BT's 2014/15 statutory accounts which states that "sales of redundant copper generated net income of £29m and we expect no benefit from this in 2015/16."[172] The latter comment provides some support for the decreasing forecast sales in Table 9.1. An explanation for the lower net income amount in the statutory accounts may be that there are significant costs involved in recovering copper. BT's DAM notes that the costs of the Openreach Copper recovery team are allocated using the base "BLH" [173], i.e. these costs are attributed under a different base to Sales of Scrap Copper. Costs within BLH are attributed 100% to PG986R[174], Openreach Other Activities which in turn are allocated 100% to component CK986[175], Openreach Other Activities. Costs for CK986 are attributed to the Network Residual Business.[176]

9.23 Having considered Cartesian's assessment and the additional information provided by BT we have reached the view that:

- Most copper recovered is from within BT's core and backhaul networks. It would seem counter to cost causality principles to allocate these proceeds to copper access network plant groups and components. It might be appropriate to allocate these proceeds to regulated services that still used copper in BT's core and backhaul networks but we are not aware of any that do so to any material extent. Therefore, allocating these proceeds to the Network Residual business does not seem unreasonable.

- In accepting this methodology we are relying on Openreach being responsible for recovering copper from BT's core and backhaul networks. This appears odd given that Openreach does generally not support activities within BTs core network. We are, however, less concerned about this because it appears the costs for this activity are being attributed to the Network Residual Business. That said it appears BT may have made windfall gains from these proceeds to the

[172] See page 6 of BT's 2014/15 results available at https://www.btplc.com/News/ResultsPDF/q415-release.pdf
[173] BT's 2014 DAM, page 33, "Except base" BLH.
[174] BT's 2014 DAM, page 33, "Except base" BLH.
[175] BT's 2014 DAM, page 104, PG986R
[176] BT, Q7 Component to service final RFS, 5 Sept 2015

extent that this core and backhaul copper has been used to provide regulated services in prior periods.

- The bulk of the remaining costs are currently allocated to D-side copper network plant groups and components. Current purchasers of services that use D-side copper will gain the benefit from these sales to the extent that these proceeds are reflected when setting charge controls. While a small amount is allocated to repayment works that does not seem unreasonable given that some of these recoveries may result from repayment works.

9.24 The allocation of net proceeds from recovery of copper in the access network is unlikely to be a material issue in the short to medium term as proceeds are forecast to remain low. However, in the longer term the issue of potential windfall gains that BT may generate may resurface should development of the access network present renewed opportunities for greater copper recovery. That will be a matter for consideration by future charge controls. To aid any future discussion it is important that BT continues to maintain separate records on the sales and costs of copper recovery from all parts of its network.

9.25 Having considered Cartesian's findings and the additional information provided by BT, we do not agree with Cartesian's assessment and therefore do not consider that BT's Sale of Scrap Copper methodology is clearly inappropriate.

Our assessment - sales of property.

Is the current methodology clearly inappropriate?

9.26 We have been unable to find any references to the attribution of profits or losses on the disposal of land and buildings within BT's 2014 DAM. BT has however confirmed to us that it allocates any such profits to the retail residual business.[177] We agree with Cartesian that the treatment of profits and losses from Property disposals seems inconsistent with that under the Property Provision Driver (AG414).

9.27 BT generally will only sell a property when it is surplus to requirements and so empty. It seems to us then that property sales should be treated in a manner consistent with the treatment of other vacant space.

9.28 When BT makes an irrevocable decision that a vacant leasehold property has been deemed surplus to requirements BT sets up an onerous lease provision to cover the costs over the remaining tenancy. Within BT's Regulatory Financial Statements these costs are attributed to the Property Provision Driver (AG414), and then attributed to plant groups and components in the same way as costs associated with other leasehold buildings.

9.29 The costs of vacant space within BT Buildings that are still being occupied are recovered from the existing occupants under Group Property and Facilities Management (AG106).

9.30 However, property profits/losses from disposals are allocated only to the Retail Residual business. BT provided us with a justification for the treatment of these disposal proceeds that was similar to that provided to Cartesian. BT said that "such

[177] BT response dated 27 March 2015 to question A1(e) of the section 135 notice dated 13 March 2015

profits are not part of the normal cost of managing our property estate and therefore it is not cost causal to allocate them to Group Property and Facility Management AG106."[178]

9.31 This method of attributing property proceeds does not seem Objective. It appears to benefit BT unfairly. Properties that have been sold may have been used to provide regulated network services in the past. Operators that have consumed these services, who, through charges they have paid, may then have contributed to the costs of these buildings. Consequently it does not seem right that BT should retain all the proceeds by allocating all the proceeds to its Retail Residual business. There may also have been "windfall gains" but that is an issue of cost recovery that may be investigated within any future charge controls. It is important that BT's regulatory accounts include relevant and appropriate data to enable this to be done.

9.32 We also note that this allocation of profits from property sales appears inconsistent with the treatment of proceeds from other surplus assets, such as the sales of copper recovered from the access network discussed above. The latter are allocated to access network copper components meaning that regulated services receive some of the proceeds from these sales. There are strong grounds for considering that the allocation of sales of property and sales of copper should be treated consistently.

9.33 Table 9.2 below gives historical and forecast profits and losses from disposal and land and buildings. This shows that profits from disposals of property have been low and are forecast to remain low.

Table 9.2: Historical and Forecast Profits on Disposal of Land and Buildings[179]

Year	Operational : BT Owned	Operational : TT[180] owned	Other (General Purpose and Offices)	Total
2011/12	[✂ £0m to £2m]	-	-	[✂ £0m to £2m]
2012/13	-	[✂ £0m to £2m]	-	[✂ £0m to £2m]
2013/14	[✂ £0m to £2m]	[✂ £2m to £5m]	-	[✂ £2m to £5m]
2014/15	[✂ £0m to £2m]	[✂ £0m to £2m]	-	[✂ £2m to £5m]
2015/16	-	[✂ £2m to £5m]	-	[✂ £2m to £5m]

Source: BT responses to Questions A1 of 2nd s135 request, CAR project

9.34 The data provided by BT as set out in Table 9.2 seems at odds with the sale of Keybridge House for £90m reported in the press in September 2014 [181] and the "profit of £67m on the disposal of a surplus building in London" reported in BT's

[178] BT response dated 27 March 2015 to question A1(f) of the section 135 notice dated 13 March 2015
[179] BT response dated 27 March 2015 to question A1(b),(c) & (f) of the section 135 notice dated 13 March 2015. BT explained that it does not have formally agreed forecasts of such disposals for 2016/17 and beyond.
[180] Telereal Trillium
[181] See, for example http://www.standard.co.uk/business/business-news/bt-eyesore-sold-for-90m-to-be-turned-into-luxury-flats-9714317.html

2014/15 Statutory Accounts.[182] We will continue to investigate the cause of this difference.

9.35 We are not convinced that profits from sales of property will remain low. While it is currently expensive to remove local exchanges from the network, changing technology including fibre deployment in the local network may change the underlying economics.

9.36 [✂].

9.37 Having considered Cartesian's assessment and the information that we have obtained from BT, we consider that the methodology to attribute profits and losses on disposal of land and buildings is clearly inappropriate.

Our proposals

9.38 *Sales of Copper*. As we do not consider that the way that BT attributes its income from recovery of surplus copper is clearly inappropriate, we do not propose any changes at this stage. However, we will revisit our position in the light of stakeholder comments in particular in respect of Openreach's involvement and its costs of recovering copper from BT's core and backhaul networks.

9.39 *Sales of Property*. We consider the way BT attributes profits and losses on disposal of land and buildings to be clearly inappropriate.

9.40 We propose that BT changes the way it allocates profits and losses of disposals on buildings so that they are not all allocated to Retail Residual, as follows:

- BT must identify the type of building that the profits or losses from disposal relate to, i.e. whether the building is owned by Telereal Trillium or BT, and whether it is a general purpose or operational building; and
- BT must then allocate these disposal proceeds in the same way that the underlying costs for similar properties are allocated. By underlying costs we propose that would be rent for Telereal Trillium owned buildings and depreciation for BT owned buildings.

9.41 We will continue to investigate the treatment of the sale of Keybridge House and BT's reported profit on the sale of London property and will if necessary make further additional proposals.

Methodologies requiring further review

2. Floor Space Utilisation (and the treatment of vacant space)

Background

9.42 Cartesian raised concerns about the attribution of floor space. As these are related to the treatment of vacant space we consider them together. They are discussed in Sections 5.6, 6.2.13 and 6.3.7 of Cartesian's report.

[182] See page 7 of BT Financial Results. https://www.btplc.com/News/ResultsPDF/q415-release.pdf

9.43 BT's attribution of property costs is complex. Property costs are collected together in three activity groups: Group Property and Facilities Management (AG106), BT Property Fixed Assets (AG412) and Property Provision (AG414).[183] They are attributed using the following bases: BT owned property charges (DTNASBT), Property costs associated with leasing from Telereal Trillium (DTNASTR), and BT Property Fixed Assets (DTNFA) bases.[184] We will not describe how these bases attribute activity groups' costs in detail but provide an initial overview of how vacant space is treated.

9.44 The first stage of the allocation process is to generate a floor space utilisation base. Separate bases are generated for Operational Buildings (mainly local exchanges) and General Purpose Buildings (most of BT's office buildings). Both these bases are generated from data held within BT's Horizon system. This records space utilisation in each building by each division or line of business (LOB).

9.45 For Operational Buildings in general, Horizon is used to identify space belonging to TSO first and then space utilised by Openreach. The latter is split into four different categories: MDF, Cable Chambers, LLU hostels and Other. Any vacant space is then attributed to the plant groups receiving costs from MDF, Cable Chambers and LLU hostels on an equi-proportional basis. The "Other" category does not receive an allocation of vacant space costs.

9.46 For General Purpose buildings Horizon is interrogated to determine the space occupied in each building by each LOB. This is then used to attribute general building space costs to each LOB on a building by building basis.

Cartesian's assessment

9.47 Cartesian raised three concerns about the treatment of vacant space in Section 6.2.13.4 of its report.

9.48 It had two concerns about the treatment of vacant space within Operational Buildings. The first was an Accuracy concern. BT currently attributes vacant space in these buildings to MDF, Cable Chamber and LLU spaces. However "since some of this vacant space may be suitable for accommodating Openreach employees, it may be more accurate to allocate a portion to the "other" category."[185]

9.49 Secondly Cartesian felt that attributing all vacant Operational Space to Openreach may not be Cost Causal. "There may be some operational buildings in the core network that do not house MDF frames. If there are such buildings and TSO is a tenant then it would be more equitable to apportion the shared costs of these buildings between Openreach and TSO."[186]

9.50 Cartesian raised a further Causality concern about the treatment of vacant space in General Purpose Buildings. Cartesian believed this may not be causal as "the methodology penalises divisions which are housed in office space that is too large for their needs, especially when office accommodation decisions may not be under the control of divisional management."[187]

[183] BT's 2014 DAM pages 123-124 and 131,
[184] BT's 2014 DAM pages 55-57
[185] Cartesian, Cost Attribution Review, section 6.2.13.4
[186] Cartesian, Cost Attribution Review, section 6.2.13.4
[187] Cartesian, Cost Attribution Review, section 6.2.13.4

Our assessment

Is the current methodology clearly inappropriate?

9.51 We have reviewed Cartesian's concerns and considered additional BT data provided in response to our questions. We consider that the concerns identified by Cartesian are small or unwarranted but we have identified additional issues about the treatment of vacant space within both Operational and General Purpose Buildings that are worthy of further consideration.

9.52 Cartesian's first concern related to Operational Buildings, Cartesian's view was that some vacant space should be allocated to the Openreach "Other" category. BT has told us that the description of this space in its DAM is not correct. "Other" space does not include Service Centres. Rather this other space is storage space for engineers and a share of communal space. Space occupied by Service Centres is included within General Purpose Buildings.[188] Further any "office space within Operational Buildings is currently classified as office space and then transfer charged out as office space. It is not included in operational space totals."189

9.53 Storage for engineers is unlikely to be a large element of space in an Operational building. Data provided by BT has confirmed that "Other" Openreach space is small, accounting for around [✂ 0% to 5%][190] of the total floor space and charges in Operational buildings with an MDF in 2013/14. Cable Chamber and LLU Hostel areas account for around [✂ 5% to 10%]of costs and charges, with [✂ 10% to 15%] of the total costs (or [✂ 15% to 20%] of areas) being associated with vacant areas.[191] While we understand Cartesian's proposal, re-allocating some vacant space to "other" operational areas and adopting BT's current allocation of vacant space to Openreach is unlikely to have much impact on cost attributions.

9.54 Cartesian's second concern related to the treatment of the costs of vacant space in Operational Buildings without an MDF. To consider this concern we first review BT's rationale for allocating vacant space in exchanges to Openreach.

9.55 Cartesian reported BT's justification for allocating all vacant space in Operational Buildings to be "based on the complexity/cost of exiting a building that houses an MDF frame."[192] This attribution was first introduced in the 2012/13 Regulatory Financial Statements. A fuller justification of the change is given on page 30 of BT's 3 October 2013 report to us.[193] This includes the following:

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[188] From [✂], email 12 February 2015 to [✂]. BT said it was going to correct the DAM in 2015 to correct this error

[189] BT response dated 27 March 2015 to question A4(c) of the section 135 notice dated 13 March 2015

[190] Ofcom analysis of BT data provided in response dated 27 March 2015 to question A2(a), of the section 135 notice dated 13 March 2015

[191] Ofcom analysis from data BT provided in response dated 27 March 2015 to question A2(a), of the section 135 notice dated 13 March 2015
. The majority of costs and space in these buildings are attributed to TSO.

[192] Cartesian, Cost Attribution Review, Section 6.2.13.4

[193] "Report requested by Ofcom describing certain changes to the Accounting Documents for the year ended 31 March 2013 and illustrating the resulting differences to the Current Cost Financial Statements had those changes not applied", 3 October 2013.
https://www.btplc.com/Thegroup/RegulatoryandPublicaffairs/Financialstatements/2013/ReportrequestedbyOfcomfortheyearended31March2013.pdf

Description of change	*Under the old methodology, vacant space in exchanges was allocated to 'occupied space' on a pro-rata basis.* *Under the new methodology, a two stage approach has been adopted: first, a share of vacant space is allocated directly to Openreach LLU assets according to forecast future occupancy; second, the remaining vacant space is allocated to Main Distribution Frames (MDF) and Cable chambers.* *The new approach first recognises the need to provide space for LLU operators and second the prohibitive costs and disruption to services of re-housing MDF and cable chambers in order to reduce the size of the operational building portfolio.*
Support for the change	*…For the first stage of allocation, the level of forecast demand for LLU space is based on forecasts received from other Communication Providers (CPs) for new Points of Presence (POP) at exchanges. We are required to reserve space in our exchanges for CPs so it is more cost causal that this space is allocated to Openreach LLU assets.* *For the second stage of allocation, business cases for moving from existing exchanges to smaller and more economical exchanges were reviewed. These showed that the cost was higher than the savings made from moving to smaller exchanges. This is because the act of moving copper lines from one exchange to another is labour intensive, time consuming and likely to result in unacceptable levels of service disruption to customers. Therefore, it is cost causal that MDF and cable chambers are allocated the cost of vacant space as they are preventing a reduction of the size of the operational building portfolio.*

9.56 Allocating all vacant space in Operational Buildings with an MDF to Openreach is therefore consistent with Openreach being the anchor tenant within these buildings. The corollary is that for Operational Buildings without an MDF the anchor tenant principle has less relevance This implies that Openreach should not be the sole recipient of vacant space, consistent with Cartesian's proposal.

9.57 BT provided data on how it attributed space and costs in Operational Buildings without an MDF in 2013/14. This showed that BT does not allocate all vacant space within these buildings to Openreach: rather the attribution of vacant space seemed closer to the overall attribution of space.[194] This suggests that Cartesian's second cost causality concern concerning attribution of vacant space within Operational Buildings without an MDF is unfounded.

9.58 Cartesian's third concern related to the potentially non-cost causal attribution of space within General Purpose Buildings, particularly to tenants who may be housed in space that is too large for their needs. To consider this we first discuss how BT treats vacant space within its internal transfer charging system.

[194] Ofcom analysis of BT data provided in response dated 27 March 2015 to question A2, of the section 135 notice dated 13 March 2015

9.59 BT Property's transfer charging system identifies two types of vacant space: [195]

- Space that Horizon records as being vacant but which a line of business (LOB), such as Openreach or Retail, is responsible for or "owns". Such space is subject to transfer charges from BT Property to the relevant LOB.

- Space that is vacant and usable but for which no LOB is responsible. Such areas are not charged for within BT's internal transfer charging system. For these areas BT Property is effectively the responsible LOB or owner. Such areas are referred to as "non-chargeable".

9.60 Openreach is the anchor tenant in Operational Buildings with an MDF. Any vacant space within these buildings is attributed to Openreach. Consequently the amount of non-chargeable vacant space within these buildings is very small and is largely the result of timing issues within the transfer charging process.

9.61 However the concept of an anchor tenant does not apply to Operational Buildings without an MDF and General Purpose buildings. Any vacant and usable space that is not the responsibility of a LOB is not charged for.

9.62 The amount of non-chargeable space is different for different types of buildings. Table 9.3 shows the distribution of total property charges by building type and for each building type the proportion of these charges that was for vacant space and that was non-chargeable in 2013/14.This confirms that there was very little non-chargeable space in Operational Buildings with an MDF, but also that there was a reasonably large proportion of non-chargeable space in other building types.[196]

Table 9.3: BT Property Charges by Type of Building in 2013/14

Type of building	Share of total BT property charges	% of Charges that are for vacant space	% Non-Chargeable
Operational Buildings with an MDF	[✂ 60% to 70%]	[✂ 10% to 15%]	[✂ 5% to 10%]
Operational Buildings without an MDF	[✂ 10% to 20%]	[✂ 5% to 10%]	[✂ 20% to 25%]
General Purpose Buildings	[✂ 20% to 30%]	[✂ 0% to 5%]	[✂ 30% to 35%]

Source: Ofcom Analysis of BT responses to questions A2-A4 of 2nd CAR s135

9.63 With respect to Cartesian's third concern Table 9.3 shows that only a small amount of space within General Purpose Buildings was vacant but that a large amount was non-chargeable. The extent to which LOBs occupy office space that is too large for their needs is therefore unlikely to be that large. Further any such charges are likely to be negotiable, given that BT Property is responsible for so much non-chargeable space. We therefore do not propose at this stage to pursue Cartesian's third concern as we do not believe that doing so would have a large difference to cost attributions.

[195] BT's response to a follow-up question on BT's answers to questions A2-A4 of the section 135 notice dated 13 March 2015

[196] Ofcom analysis of BT data provided in response dated 27 March to question A2-A4, of the section 135 notice dated 13 March 2015

9.64 There will be a difference between BT's Property's transfer charges and the costs that BT Property actually incurs. The costs associated with non-chargeable areas will be one of the major reasons for the difference but there may be others, notably whether BT Property over- or under-recovers the costs of occupied space, which, due again to timing differences, may happen for a variety of reasons.

9.65 Within its Regulatory Financial Statements, BT attributes the property costs it incurs (within the relevant property cost activity groups, for example, Group Property and Facilities Management (AG106) on the basis of BT Property's transfer charges. This means that the costs of non-chargeable space are effectively treated as an overhead on all other property related charges for all buildings types. It appears that, for example, the costs of non-chargeable areas in General Purpose buildings are being attributed across Operational Buildings, increasing the costs of Operational Buildings with an MDF.

9.66 We also make the following observations about the attribution of vacant space in Operational Buildings:

- BT uplifts LLU space within Operational Buildings with an MDF to reflect forecast future occupancy. This is an attribution of vacant space to LLU hostel areas. BT has explained that it had applied:

  "an LLU uplift of [✂ 40% to 45%]. This uplift was calculated in 2012 using a forecast of future PoPs provided by CPs to Openreach. The forecast showed that future space requirements would increase by [✂ 40% to 45%] between 2012 and 2017."[197]

- While vacant space in Operational Buildings with an MDF these buildings may be attributed to Openreach, TSO is by far the major occupier of these buildings[198] and as such will be responsible for some vacant space. Areas within operational buildings are assigned to TSO within BT's Horizon system and this will include vacant space that TSO is responsible for. Total space within TSO areas is allocated to plant groups on the basis of equipment dimensions and walk round factors. Any vacant space within TSO owned areas will then be treated as an overhead on the costs attributed to these plant groups.

- Vacant space in General Purpose buildings has declined over the period 2011/12 to 2013/14 but that there has been little change in vacant space in Operational Buildings.

Table 9.4: Changes in Vacant Space in BT buildings 2011/12 to 2013/14

Type of building	Change in vacant space	Change in transfer charges for vacant space (nominal)
Operational Buildings with an MDF	[✂ 0% to 5%] pa	[✂ 0% to 5%]pa
Operational Buildings without an MDF	[✂ 0% to 5%]pa	[✂ 0% to 5%]pa
General Purpose	[✂ -5% to -10%]pa	[✂ -5% to -10%]pa

[197] BT response dated 2 April 2015 to question A2(d) of the section 135 notice dated 13 March 2015
[198] According to BT's answer to question A2 of the section 135 notice dated 13 March 2015 TSO was charged for about 65-75% of the space and charges in Operational Buildings within an MDF in 2013/14.

Buildings

Source: Ofcom Analysis of BT responses to questions A2-A4 of the section 135 notice dated 13 March 2015.[199]

9.67 In light of the above, we have considered three issues relating to the allocation of vacant space which we address in turn.

- *Application of the Anchor Tenant principle in Operational Buildings with an MDF.* This principle, introduced by BT in 2012/13, results in all vacant space in these buildings being allocated to Openreach. BT has justified this approach as being more Causal – we don't disagree. Previously, more of this vacant space was allocated to TSO. This principle's adoption has moved costs from the business connectivity and into fixed access markets.

- *The mark-up of space for LLU Hostels in Operational Buildings with an MDF.* BT currently marks up LLU space by [✂ 40% to 45%] to allow for future growth but does not then attribute any of the remaining vacant space to them. While these areas receive some allocation of vacant space and the approach seems reasonable, the data on which the mark-up is calculated seems out of date. We would expect the proportion of mark-up to fall over time, quite probably each year, as other CPs fill vacant space in the hostel. If this is the case we would expect the data to be updated, perhaps annually.

- *The treatment of non-chargeable vacant space.* Within the Regulatory Financial Statements BT appears to attribute the costs of vacant space within non-chargeable areas across all building types. For example, vacant space within Operational Buildings with an MDF will have already been attributed. However, under this attribution methodology it appears these buildings will also receive an attribution of the costs for non-chargeable vacant areas within other types of buildings. It is not causal to attribute the costs of one type of building to a different type of building. Furthermore, this method is not objective because costs of office buildings, which are more likely to be associated with non-regulated businesses, are attributed onto costs of operational buildings, which are more likely to be associated with regulated businesses.

9.68 In respect of the application of the anchor tenant principle in Operational Buildings within an MDF, we do not consider that the application of this principle is clearly inappropriate so do not propose any changes at this stage.

9.69 Regarding the mark-up of space for LLU Hostels in Operational Buildings with an MDF, we expect BT to investigate and provide us with evidence on how frequently the data used to calculate the mark-up should be updated. In the event that BT has not adequately considered this issue and addressed our concerns we will consider whether more prescriptive action may be appropriate.

9.70 In respect of the treatment of non-chargeable vacant space, we consider the way BT attributes non-chargeable vacant space to be clearly inappropriate. We believe that BT's approach of attributing BT Property's actual costs on the basis of transfer charged costs that reflect actual occupation seems reasonable but that it is clearly inappropriate then to spread non-chargeable vacant space across all building types. We propose that BT should attribute property costs separately by building type and

[199] The values for space and charges in this table include those for non-chargeable areas.

attribute the costs for each building type, including non-chargeable vacant space, on the basis of the transfer charges for that building type.

3. Transfer charges (Miscellaneous – Accuracy)

Background

9.71 Transfer charges are internal trades between BT divisions. In its Detailed Attribution Methodologies BT explains that "the purpose of transfer charging is to:

- Enable customer-facing divisions, which are responsible for their own profitability, to receive a correct allocation of income and expenditure.
- Enable support functions to charge for their services to other group units.
- Enable control to be exercised over use of key resources.
- Maintain proper control in accounting units of certain balance sheet items."[200]

9.72 BT's regulatory accounting system uses transfer charges in one of two ways:

- To help attribute costs, such as Property (AG106) and Motor transport costs (AG101). We refer to these as no-net transfers and discuss these further in Section 12; or
- As a proxy for the actual costs that are incurred when a non-core BT subsidiary provides services to BT Group. These appear as cost lines and are attributed through the system

9.73 In the 2013/14 Regulatory Financial Statements unbalanced transfer charges contributed [✂]CCA to regulated markets. As we explain in Section 7, £13m of this will now be reattributed to network residual following the correction of an error.[201]

Cartesian's assessment

9.74 Cartesian identified Accuracy concerns about Transfer Charges in BT's accounts that do not balance. These concerns are separate from the error discussed in Section 7 where transfers into BT Wholesale had been treated as overheads and therefore apportioned to regulated markets in error.

9.75 Cartesian found that the unbalanced transfer charges relate to BT's non-core units and that this treatment may be correct in specific cases where additional costs (from non-core units) need to be pushed into the cost exhaustion system. However, Cartesian has concerns that these unbalanced transfer charges may lead to double counting.[202]

9.76 Additionally, when reviewing the Property Cost Apportionment methodology, Cartesian also noted an issue in respect of completeness. Cartesian are concerned that "the costs attributed to AG106 appear incomplete. A [✂ £10m to £50m] FAC

[200] BT's 2014 DAM, page 15, section 3.5
[201] Section 7, Transfer Charges (BT Wholesale overheads)
[202] Cartesian, Cost Attribution Review, paragraph 6.5 Accuracy

transfer charge is attributed by BT Property into AG106. However, no transfer charge out can be identified to be attributed from the data provided by BT."[203]

9.77 Cartesian, without visibility of which additional non-core unit costs are driving these Transfer-In charges costs, found concerns about the overall Accuracy (and Transparency) of this methodology.

Our assessment

Is the current methodology clearly inappropriate?

9.78 There are two types of transfers. There are those for which any "transfer out" (cost) has a corresponding "transfer in" (credit). These transfers make no contribution to BT's total costs. We refer to these as "balanced transfers". Costs for the second type (unbalanced transfers) appear as cost lines and are attributed through the system. These transfers are a proxy for the actual costs that are incurred when a non-core BT subsidiary provides services to BT Group.

9.79 The benefit of including balanced transfers within BT's cost attribution system is not clear to us. Further there may be some disadvantages in doing so as:

- They increase the size of the system and make it more complex
- They introduce the potential for errors if transfers do not net off
- They introduce the potential for bias if transfers in are attributed in a different way to the corresponding transfers out.

9.80 Some balanced transfer charges are used to help attribute costs, such as Property and Motor transport costs. However there may be ways to include the bases generated from the relevant transfer charges within the system without including the transfers themselves

9.81 In respect of unbalanced transfers, BT has explained that some of the transfer charges had "been received from a non-core unit. In these cases the offsetting transfer charge is included in our non-core ledgers and thus will not net off automatically. However, we believe it is appropriate in certain cases to include the underlying costs of the service against regulated markets so we leave the transfer charge in as it provides a close estimate of these underlying costs."[204]

9.82 BT's approach of attributing costs incurred by non-core units in the form of the internal charge seems appropriate. However, we are concerned that in part transfer charges might contain an element of mark-up given BT's explanation that charges for the use of services or assets are variously charged at price, are based on the recovery of costs, use external prices, or include Global Services management costs.

9.83 Additionally, BT describes Global Services as a 'non-core unit' contrary to our understanding that Global Services is part of the core BT ledger.[205] While BTs

[203] Cartesian, Cost Attribution Review, paragraph 6.3.7.4
[205] The values for space and charges in this table include those for non-chargeable areas.[206] BT's 2014 DAM, page 15[206] Directions for Regulatory Financial Reporting 2015, Annex 3, page 111
[206] BT's 2014 DAM, page 15[206] Directions for Regulatory Financial Reporting 2015, Annex 3, page 111

accounting documentation provides some explanation of transfer charges, we consider that at present it is incomplete as it does not explain unbalanced transfer charges.

9.84 Despite Cartesian's findings and our further work we are not able to conclude on the appropriateness of the unbalanced transfer charges at this point.

9.85 We will work with BT to better understand its transfer charges.

9.86 In respect of balanced transfers, we will aim to establish whether it is appropriate to include them within its cost attribution system.

9.87 We will also engage with BT to better understand the nature and validity of the identified unbalanced transfer charges; meanwhile, BT should ensure that its Accounting Methodology Documentation contains enough information on transfer charges to be transparent.[206]

9.88 We would expect BT to provide us with information about each material non-core transfer charge, detailing the composition of each charge including any mark up. We would also expect BT to provide an explanation as to whether Global Service is a non-core unit and how the treatment of other Global Services costs in the core general ledger align with this reasoning. Alternatively, BT should explain where the non-core unit costs originate from if they are not Global Services costs.

9.89 Having concluded our assessment we will if necessary, propose changes in respect of unbalanced transfer charges in the autumn.

4. Software Depreciation methodology

Background

9.90 The Software Depreciation methodology 'apportions software depreciation costs to Plant Groups at Level 1 using methods that are specific to the BT division against which the costs are recorded in the General Ledger'.[207]

9.91 Software includes Openreach System development for Ethernet and Service Centre software rollouts. Software items have been capitalised and recorded in the Fixed Asset register as the asset will be used over a significant period of time.

9.92 The attribution of software depreciation costs is calculated using Excel models and BT refer to the methodology as SOFTDEP.[208]

9.93 The SOFTDEP base currently attributes approximately [✂ £150m to £200m]CCA, with the TSO software depreciation this totals approximately [✂ £250m to £300m]CCA.[209]

[206] Directions for Regulatory Financial Reporting 2015, Annex 3, page 111
[207] Cartesian, Cost Attribution Review, paragraph 6.2.21.1
[208] BT, Detailed Attribution Methods 2014, page 115
[209] BT, Detailed F8CodeOUCV2, 30/09/2014

Cartesian's assessment

9.94 Cartesian conducted an assessment and review of the Software Depreciation methodology and Openreach Software depreciation model. In its assessment Cartesian identified concerns in respect of objectivity and consistency of the Regulatory Financial Statements.

9.95 *Objectivity*. Cartesian state "the approach taken by BT to determine attribution weights involves combining the depreciation amounts of software assets before splitting them out again. A more objective approach would be to directly allocate those costs that have a 1:1 relationship with destination PGs". [210]

9.96 *Consistency of the Regulatory Financial Statement*. Cartesian are concerned that "based on the information provided by BT, the SOFTDEP model attributes costs for all of BT's main divisions except TSO. From a consistency perspective it will be good to have TSO software costs also attributed using the SOFTDEP base".[211]

9.97 Cartesian recommends that BT "directly allocate those [software] costs that have a 1:1 relationship with destination PGs." Then attribute all remaining TSO software costs using the SOFTDEP base.[212]

Our assessment

Is the current methodology clearly inappropriate?

9.98 In respect of Objectivity, the Openreach software apportionment model contains a list from the Fixed Asset Register for Openreach. Each asset is assigned a broad category (Duct, NGA, Service, Other programmes and Product Specific), although BT has not provided the criteria used for this designation. The depreciation is then apportioned to each category

9.99 The 'product specific' depreciation is further apportioned to components using the proportion of software depreciation charge for LLU, WLR, and Ethernet assets. The general Openreach product software costs are also apportioned to these products using the same proportion.

9.100 In respect of Consistency, TSO software costs are incurred in BT TSO Research & Innovation and are directly allocated to TSO operational costs (AG102). These costs are then further attributed on the basis of previously attributed assets excluding Copper, Duct etc.[213] However, based on the data provided as part of the review, we were unable to determine if any of these TSO software costs might relate to a specific product.

9.101 As telecoms services become more technical we expect the reliance on software and therefore these costs to increase in the future.

9.102 We consider that more analysis is required to determine if there are specific product costs in the TSO software costs. When this analysis is completed, we expect to be

[210] Cartesian, Cost Attribution Review, paragraph 6.2.21.4
[211] Cartesian, Cost Attribution Review, paragraph 6.2.21.4
[212] Cartesian, Cost Attribution Review, paragraph 6.2.21.5
[213] BT, Detailed Attribution Methods 2014, page 122

able to take a view as to whether the current treatment of software depreciation is clearly inappropriate.

9.103 We will engage with BT to fully understand the process by which Openreach software costs are apportioned. We expect that BT should explain how each Openreach software asset is assigned to a broad category (Duct, NGA, Product Specific etc.) and provide evidence that general Openreach software only relates to LLU, WLR and Ethernet services.

9.104 We will also seek to better understand the nature of TSO software costs. We expect BT to provide details of the TSO software costs including assets, business area or services the software relates to.

5. Duct Valuation Methodology

Background

9.105 Duct is the pipe within which cables and other equipment are installed. Duct is run underground and comes in a variety of sizes but the majority is in one or two bore. Costs incurred while working on Duct are booked to various classes of work (CoW). Those CoWs do not necessarily correspond to the part of the network that the Duct is part of (see Section 8).

9.106 To attribute costs to a specific type of duct BT use an apportionment method. Cartesian explain that the duct valuation method is used to apportion duct costs between access, core and backhaul duct-related cost categories at Level 1.[214]

9.107 BT use an Excel model to calculate the apportionment percentages called 'OR_Duct'.[215] First, BT uses the value of Access and Core Duct to create a ratio. Second, the Core Duct value is then split further between Backhaul and Inner Core by assessing the number of live circuit volumes. The result provides proportions by which Duct cost will be apportioned across Access, Core and Backhaul cost categories. The duct valuation methodology is used by a single base methodology, PDTDUCT. [216]

9.108 Cartesian estimate that should the proportion of Backhaul duct increases verses access duct increases by 1% Cartesian costs would move from Fixed Access markets (£6m) to other regulated markets, approximately £5m to Business Connectivity markets.[217]

Cartesian's assessment

9.109 Cartesian conducted an assessment and review of the Duct valuation methodology. In its assessment Cartesian identified concerns in respect of consistency of the Regulatory Financial Statements.

9.110 In reference to the second part of the duct valuation methodology, Cartesian state that "the methodology is not consistent with the approach taken for apportioning fibre. Duct costs are apportioned between core and backhaul based on the number of live

[214] Cartesian, Cost Attribution Review, paragraph 6.2.2
[215] BT, Model 018_OR_Duct, 29/09/2014
[216] BT, Detailed Attribution Methodologies, Page 84
[217] Cartesian, Cost Attribution Review, paragraph 7.4.3

circuits. However for fibre, backhaul and core fibre costs are split between 20C and 21C networks based on fibre length."[218]

9.111 Additionally, Cartesian conducted an assessment of the Fibre Length methodology. In its assessment Cartesian stated "the methodology is not consistent with the approach for apportioning duct costs." [219]

9.112 In conclusion Cartesian recommended, that BT "determine the core and backhaul ratio using the same apportionment mechanism as fibre (i.e. based on fibre quantity rather than circuit volumes)."[220]

Our assessment

Is the current methodology clearly inappropriate?

9.113 We have considered Cartesian's findings and agree that the use of the number of circuits) for this apportionment may be inappropriate.

9.114 During the review we were informed that BT has updated the method they use to allocate Fibre costs between core and backhaul cost categories (see Section 8).[221]

9.115 With regard to the calculation of the split of circuits between Core and Backhaul in the OR_Duct model Cartesian note "the methodology or calculation steps are not available."[222]

9.116 While we agree the number of live circuits will give an indication of the appropriate split, we do not know if cable length has been taken into account.[223] We consider the length of cables will have a bearing on the result as we cannot be sure that all duct contains the same proportions of Core and Backhaul circuits over different distances.

9.117 Our assessment of whether the BT attributes cost to types of duct is appropriate depends on whether it is practicable to take account of circuit length, as well as volume, when calculating the Core and Backhaul duct split; if it is practicable we consider at this stage that it would be clearly inappropriate not to so. However, more work is required to determine whether this is the case.

9.118 We will continue to engage with BT to better understand whether it is practicable for BT to take account of circuit length, as well as volume, when calculating the Core and Backhaul duct split. In doing so we expect to gain a better understanding about the calculation of, and possible data sources for this apportionment method.

[218] Cartesian, Cost Attribution Review, paragraph 6.2.2.4
[219] Cartesian, Cost Attribution Review, paragraph 6.2.7.5
[220] Cartesian, Cost Attribution Review, paragraph 6.2.2.4
[221] Due to the timing of the BT change, the new Fibre attribution has not been taken into account as part of the Cartesian review. However, the new attribution of Fibre costs still uses the lengths of the specific circuit types.
[222] Cartesian, Cost Attribution Review, paragraph 6.2.2.3
[223] In tab Core & NGA Splits off the OR_Duct model inputs hardcoded with percentage values with a note from [✂] on 7/2/14

6. Power Consumption for TSO and Openreach

Background

9.119 BT has two pools of plant groups from which they attribute electricity costs into BT's divisions and markets. These two pools of plant groups attribute electricity costs using two different cost attribution methodologies. The two cost pools are:

- **Power consumption for TSO.** This model is responsible for the apportionment of approximately [✂ £100m to £150m] CCA of electricity costs to network equipment. The electricity charge to TSO[224] is apportioned based on the power consumption of the network equipment. This is calculated using BT's TSO electricity model.

  The apportionment of costs within this model is a two stage process. Costs are apportioned to 'network segments', these are network systems that consist of various 'network elements'. Costs are then apportioned within the network systems to 'network elements', these are the individual network components used in the network systems.

- **Power consumption for Openreach** This attribution method is responsible for the apportionment of approximately [✂ £10m to £50m] CCA of electricity costs to network equipment. This apportionment methodology follows identically how the Openreach cost for operational buildings is attributed.[225]

Cartesian's assessment

Power consumption for TSO

9.120 In its assessment of BT's allocation of TSO electricity[226] Cartesian identified two issues about the methodology that BT use for the attribution of electricity costs in their TSO Electricity model.[227]

9.121 Cartesian[228] explain that BT's TSO electricity model uses hard coded inputs as weights of attribution to plant groups. Cartesian explained that absent an explanatory methodology, it is difficult for them to determine the objectivity, reasonableness, and accuracy of these input weighted percentages.

9.122 Cartesian also questioned the power consumption values used in BT's TSO Electricity model. BT uses a power consumption value for each part of the network or piece of network equipment in order to attribute the electricity costs in their model. For most of the network equipment BT use an actual power consumption value provided by the lines of business. However, for some network equipment BT use estimates. These estimates are based on the equipment's maximum power specification.

9.123 Cartesian consider that using a power specification rating instead of the actual power consumed may be reasonable. However, given the effort and materiality, Cartesian

[224] Cartesian, Cost Attribution Review, section 6.2.14.1
[225] Cartesian, Cost Attribution Review, section 6.2.15
[226] Cartesian, Cost Attribution Review, section 6.2.14.4
[227] Cartesian, Cost Attribution Review, section 6.2.14.4
[228] Cartesian, Cost Attribution Review, section 6.2.14.4

consider that if this is used, an efficiency factor needs to be applied. Cartesian consider that equipment is not always used at maximum power and thus the maximum power specification should be applied with a efficiency factor in order than it is comparable to the actual power consumption data provided by BT's lines of business.

Power consumption for Openreach.

9.124 Cartesian also assessed BT's attribution of Openreach electricity.[229] Cartesian identify several potential issues with this apportionment methodology used by BT, and in summary suggest a potential alternative would be to use a methodology similar to the one used for the attribution of TSO electricity costs which is based on using the power consumption of network equipment.

Our assessment

Is the current methodology for power consumption for TSO clearly inappropriate?

9.125 We requested further information on the two Power consumption for TSO issues from BT.[230] In respect of the use of hard coded inputs, BT confirmed[231] that the hard coded cells used to calculate the percentage attribution to plant groups are based on calculations in other supporting spreadsheets. BT explained that some of these attributions are updated annually (i.e. 21CN) and some are based on older technology models which are reviewed annually but typically do not change significantly.

9.126 BT also explained that it had already updated some of the power rating data for some network equipment in the TSO electricity model and that this related to the power consumption of PSTN equipment. [232] BT explained that this did change the costs of TSO electricity in regulated markets by a material amount. BT went on to say:

"In terms of ongoing work, we are currently carrying out an internal project to investigate the [attribution] of electricity in the [Regulatory Financial Statements] to understand the differences between the power consumption calculated in the [Regulatory Financial Statements] apportionment model with the power consumption calculated in a separate model developed by the BT TSO Carbon and Energy team. Our network equipment is not specifically metered so the BT TSO Carbon and Energy team developed their model to manage BT's energy consumption." [233]

9.127 In its March 2015 Change Control notification[234] BT proposed changes to the way it allocated TSO electricity . We discussed this proposal with BT and highlighted our concern that this change might not be objective as the changes proposed affected just PSTN equipment in Fixed Access markets and no other types of equipment used in other markets, notably WBA and Business Connectivity.

[229] Cartesian, Cost Attribution Review, section 6.2.15
[230] BT response dated 20 March 2015 to question B(7) & B(5) of the section 135 notice dated 13 March 2015
[231] BT's S135 response to our S135 dated 13 March question B5, dated 20 March 2015
[232] BT's S135 response to our S135 dated 13 March question B8, dated 20 March 2015
[233] BT's S135 response to our S135 dated 13th March question B8, dated 20th March 2015
[234] BT, Change Control Notification 2015, section 3.20

9.128 Subsequently BT told us that it had undertaken more work to review energy utilisations for two asset groups (21CN equipment and DSLAMs). These produced further changes to attributions that this time affected all markets.

9.129 Given the timing of BT's recent proposals to make further changes to its existing attribution methodologies, it has not been possible in the time available to properly review and understand consequences of the possible changes or what they might mean for the existing attribution rules.

9.130 In light of the above, we are not yet in a position to conclude whether the way BT attributes power consumption for TSO is appropriate.

Is the current treatment of power consumption for Openreach clearly inappropriate?

9.131 We also considered Cartesian's comments on BT's attribution of Openreach electricity costs. Specifically we considered whether it would be more appropriate for BT to attribute Openreach electricity costs based on the power consumption of network equipment (using a similar method as TSO electricity costs) as opposed to the current method that is broadly based on floor space occupied.[235]

9.132 The type of electricity costs captured in this (Openreach) cost pool which is different to the type of electricity costs captured in the TSO electricity cost pool. We considered that because this cost reflects 'general electricity costs' which consist of lighting, heating, cooling, and other more general building type electricity costs then using a method that follows how Openreach operational buildings is attributed is appropriate. TSO electricity costs reflect the electricity actually used by the network equipment and therefore using a power consumption based attribution method is more appropriate for TSO electricity costs.

9.133 In light of the above, we do not consider that BT's current attribution of Openreach electricity costs is clearly inappropriate.

9.134 Electricity costs are an increasingly important part of BT's costs. However, as explained above, we have not been able to establish whether the way BT attributes these costs is appropriate. Therefore, we will work with BT to better understand how it does so, and will consider whether it is appropriate or not and what if any changes need to be made.

7. Fibre Gross Replacement Cost methodology

Background

9.135 Access Fibre is the term for fibre on the customer side of the exchange and is split into two groups; distribution and spine. These two fibre groups are further split between two additional groups; Next Generation Access (NGA) and Non Next Generation Access (non-NGA). NGA or Super-fast broadband is generally taken to mean broadband products that provide a maximum download speed that is greater than 24 Mbit/s. [236]

[235] Refer to the allocation of Openreach cost for operational buildings
[236] 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

9.136 Cartesian explain that the fibre GRC method is used to apportion costs between NGA and non-NGA access fibre. NGA fibre is deployed for Generic Ethernet Access (GEA).[237]

Cartesian's assessment

9.137 Cartesian considered that using "the base for apportioning operational costs does not appear causal. The costs are apportioned on the basis of GRC implies that costs in the current year follow the value of assets."[238]

9.138 Cartesian found that "the methodology is not consistent with other approaches used by BT to apportion fibre-related costs [between old and new networks]. BT uses a variety of approaches:

- GRC is used to apportion access fibre costs between non-NGA and NGA;
- Fibre Length is used to apportion backhaul and core fibre in 20C and 21C networks; and
- current year fibre depreciation is used to apportion associated duct costs between NGA and non-NGA fibre."[239]

9.139 Cartesian have accuracy concerns "due to large, unexplained changes in input parameters. In the fibre GRC model,[240] there is a large reduction in the NGA spine volumes between 2012/13 and 2013/14. The number of NGA spine cables falls from [✂ approximately 95%]. There were no explanatory notes for this in the model provided to Cartesian."[241]

Our assessment

Is the current methodology clearly inappropriate?

9.140 Firstly we address the concern relating to causality. Apportioning maintenance costs using the gross replacement cost appears to be inappropriate. One could reasonably assume that older assets within a network will require a higher level of maintenance. Using GRC would remove the age differential as it assumes the value of the assets if they were installed today and apportion relatively more costs to newer assets.

9.141 Additionally, apportioning the cable depreciation costs using this method also appears inappropriate. Where depreciation is calculated on a consistent basis with GRC and all relevant assets have similar assets lives we would expect comparable allocation proportions. However, according to BTs Annual Statements (2014 and 2015) Fibre cable can have an asset life ranging from 5 to 20 years.[242] Therefore, the

[237] Cartesian, Cost Attribution Review, paragraph 6.2.8
[238] Cartesian, Cost Attribution Review, paragraph 6.2.8.4
[239] Cartesian, Cost Attribution Review, paragraph 6.2.8.4
[240] The Fibre GRC model Cartesian refer to is model 232 CCA Fibre_13-14_p12_PART_E, provided by BT on 6 November 2015
[241] Cartesian, Cost Attribution Review, paragraph 6.2.8.4
[242] BT, Annual Report 2014, Note 3 to Financial Statements, Property, Plant and Equipment. http://www.btplc.com/Sharesandperformance/Annualreportandreview/pdf/2014_BT_Annual_Report.pdf BT, Annual Report 2015, Note 3 to Financial Statements, Property, Plant and Equipment. http://www.btplc.com/Sharesandperformance/Annualreportandreview/pdf/2015_BT_Annual_Report.pdf

level of depreciation on assets with a shorter life will be relatively higher. As such, apportioning costs on the basis of GRC is likely to allocate more cost to older services.

9.142 While greater consistency would be achieved by using the same approach for the attribution of Access fibre, and Core and Backhaul Fibre it would not be taking account of all the available data, and therefore might not be objective.

9.143 Access fibre cables can be specifically identified. Backhaul and Core fibres are carried on shared cable sections and cannot be separately identified.

9.144 The use of GRC for the allocation of Access Fibre maybe more objective than the alternative, but more consistent, approach. On the basis that BT must resolve any conflict between Regulatory Accounting Principles by giving priority to the order in which they appear, BT should have regard to Objectivity in preference to Consistency.[243]

9.145 Finally, turning to the accuracy concern, the volumes of cables appear to be derived from an output of Integrated Network Systems which is described on in the 2014 DAM.[244] We understand BT conducted a review of NGA Fibre allocation in 2013/14 which resulted in a reclassification of Fibre:

9.145.1 FTTC Fibre was reclassified from NGA Spine Fibre to NGA Distribution fibre, and we can see in the model an increase in Distribution Fibre volumes. The accounts for approximately 70-75% of the change

9.145.2 Additionally, the review resulted in a reclassification of NGA Fibre to Non-NGA Fibre as BT improved the rule to recognise the newer Fibre in the Integrated Network Systems.

9.146 While the data used for this base methodology appears to be accurate, further analysis is required to understand the impact of using Gross Replacement Costs as a basis for apportionment on assets of different ages.

9.147 Informed by the outcome from this work, we will determine whether the current attribution basis is inappropriate.

9.148 BT should provide any impacts to regulated markets as a result of the volume movement of spine and distribution fibres from 2012/13 to 2013/14.

9.149 We will engage with BT to fully understand possible alternatives to the GRC methodology for apportioning Access Fibre cable and maintenance costs, which may be more causal.

[243] Ofcom, Directions for Regulatory Financial Reporting, Annex 1, page 98
[244] BT's 2014 DAM, Page 280

Areas where no further action is proposed

8. The Profit Weighted Net Replacement costs (PWNRC) methodology (Cumulo rates)

Background

9.150 The Profit Weighted Net Replacement costs (PWNRC) methodology is used by BT to apportion Cumulo rates costs.[245] Cumulo rates are the non-domestic rates (property taxes) that BT pays on its rateable network assets in the UK. As all of BT's rateable assets are assessed together the term "Cumulo" is used. BT's current Cumulo rates costs on an ongoing basis are of the order of £85-£90m.[246]

9.151 With the exception of NGA assets, it is not possible to disaggregate BT's Cumulo Rateable Value by line or business, service or rateable asset so a way of attributing these costs is required. [247] The PWNRC methodology apportions BT's Cumulo rates costs across BT's rateable assets on the basis of their net replacement costs multiplied by a set of returns or profit weights. Separate apportionment bases are constructed for the rebates BT has received as a result of increased unbundling volumes[248] and all other BT's Cumulo rates costs.[249] Rates on NGA assets are separately identified and are apportioned only across NGA network components.[250]

9.152 BT's Cumulo rate costs are contentious. While Sky and TalkTalk appealed the 2012 FAMR Cumulo rates costs allocation, the Competition Commission found that "Ofcom did not err in allocating the costs of BT's cumulo rates" and that "the PWNRC approach was, to a sufficient degree consistent, with cost causality."[251]

9.153 In the 2014 FAMR we concluded that we did "not now consider that BT's 2010/11 allocation of cumulo costs to MPF and WLR services is reasonable."[252] As a result we directed BT to change the way it attributed Cumulo rates costs from the 2014/15 Regulatory Financial Statements onwards.[253] BT must now attribute all non NGA related Cumulo rates costs in the same way. Profit weights should be the relevant

[245] The PWNRC methodology applies to the CUMNORM and CUMRBTE bases. These are described on pages 53-55 of the BT/s 2014 DAM.
[246] This is an Ofcom estimate based on published Rateable Values and rates in the pound. BT's amounts within its accounts may be higher or lower than this. For example it may be less if BT made successful appeals which resulted in rebates to payments made in prior years.
[247] We have confirmed this with the VOA for the valuation models that support the 2010 rating lists. See for example 2014 Fixed Access Statement, Annex 26, paragraph A26.12.
[248] This is the CUMRBTE base, see page 54-55 of BT's 2014 DAM.
[249] This is the CUMNORM base, see pages 53-54 of BT's 2014 DAM.
[250] Further descriptions of the methodology that BT used in 2013/14 can be found in BT's 2014 DAM, pages 53-55 and in Cartesian report 6.2.3.3.
[251] A résumé of the appeal and CC's decision is given in paragraphs A14.16 – A14.29 in Annex 14 of the 2013 Fixed Access Consultation.
[252]2014 Fixed Access Statement, Annex 26, paragraph A26.58.
[253] 2015 Directions for Regulatory Financial Reporting. Statement. http://stakeholders.ofcom.org.uk/binaries/consultations/financial-reporting/statement/statement.pdf

weighted average costs of capital for each market.[254] We also directed that "BT shall attribute the NGA related Cumulo costs to the NGA network components."[255]

9.154 To implement a decision taken in the 2014 FAMR we also imposed VULA reporting requirements on BT in the 2015 Regulatory Financial Reporting Directions Statement. We required that the costs and revenues of VULA services are included within the WLA market (not the residual market) from 2014/15 onwards. We also required more detailed reports on VULA service and component costs and revenues to be provided to Ofcom in private.[256]

9.155 The 2015 LLCC Consultation proposes two Cumulo rates costs adjustments. These have been proposed in order to achieve consistency with the way that the 2014 FAMR control attributed costs and how BT's Cumulo rates costs will be attributed in its 2014/15 Regulatory Financial Statements. The two adjustments will provide a "steady state" cost level on which to base the LLCC cost forecasts.

Cartesian's assessment

9.156 Cartesian's assessment of the PWNRC methodology, made on the basis of the methodology used to prepare the 2013/14 Regulatory Financial Statements, identified Objectivity, Causality and Consistency concerns.[257] The Objectivity concern is a supporting documentation issue and is discussed in Section 11.

9.157 Cartesian raised two Causality concerns. Both associated with the treatment of rebates. Cartesian noted that some rebates were being allocated to non-NGA distribution fibre (PG959C). The second related to the treatment of Openreach transfer charges associated with Cumulo rates costs.

9.158 With respect to Consistency Cartesian said that there were some issues with the allocation of NGA Cumulo rates costs. All NGA rates were being allocated to GEA Spine fibre (PG950C) and none were allocated to GEA distribution fibre (PG951C).

9.159 Cartesian consider that the changes which Ofcom directed BT to make in the 2015 Regulatory Financial Reporting Directions Statement[258] tackle (most of) their identified concerns.

9.160 BT has set out the impact of the required change as item 3.12 in BT's 2015 Change Control Notification report.[259]

Our assessment

9.161 As Cartesian noted, the 2015 Regulatory Financial Reporting Directions Statement addressed the identified Causality concerns. From the 2014/15 Regulatory Financial

[254] 2015 Directions for Regulatory Financial Reporting. Statement, paragraphs 4.63 to 4.67.
[255] 2015 Regulatory Reporting Directions Statement, Annex 2, Part 2, 1.6.1, page 105
[256] For more details see Section 5 of the 2015 Regulatory Directions Statement. BT has included this reporting change as item 3.2 of its 2015 BT's Change Control Notification report.
[257] Cartesian's review of the PWNRC methodology is given in Section 6.2.3 of its report,.
[258] Cartesian, Cost Attribution Review, section 6.2.3
[259] BT, Change Control Notification in accordance with SMP Condition 21 of Ofcom's Regulatory Financial Reporting Final Statement published on 20 May 2014, pages 45 and 23. http://www.btplc.com/Thegroup/RegulatoryandPublicaffairs/Financialstatements/2015/ChangeControlNotification-31March2015.pdf

Statements onwards rebates will be apportioned in the same way as all other non-NGA Cumulo rates costs.

9.162 In respect of the Consistency concern about NGA Cumulo rates costs we note BT response contained in Cartesian's report: "The NGA rating value is calculated separately from the rest of the network so if cumulo rates were apportioned to FTTC tie cables the cost would be [reattributed] from PG953C (DSLAM and cabinets) and PG950C (GEA access fibre spine). All such costs lie within the residual market and therefore a [reattribution] would have no impact on the Regulatory Financial Statements or AFI as currently reported."[260]

9.163 We do not agree with BT. Demand for NGA is expected to grow significantly. Ensuring that allocations to VULA services and related network components are reasonable and consistent will therefore become increasingly important. As noted, the costs of VULA services will be reported in the WLA market from 2014/15.

9.164 As we noted in the 2015 Regulatory Reporting Directions Statement the attribution of Cumulo rates costs remains a dynamic issue. Therefore, we will keep the appropriateness of this methodology under review in particular should future changes be made to BT's Cumulo rateable value. This will include the need to reflect any decisions made in the ongoing Business Connectivity market review and Leased Lines charge control.

k. Depreciation for 21CN methodology (Future Benefits)

Background

9.165 21st Century Network (21CN) was BT's data and voice network transformation project. 21CN intended to move BTs telephone network from a Public Switched Telephony Network (PSTN) technology to an Internet Protocol (IP) system. Project scope has changed and BT now uses 21CN for data services only.

9.166 BT allocated costs associated with 21CN base on the proportions of depreciation charges.

9.167 The majority of 21CN costs are attributed to the Wholesale Broadband Access (WBA) and Business Connectivity (BC) markets. A small amount of costs are attributed to the Narrowband and Fixed Access Markets. Some services in WBA and BC markets have costs attributed to them using the future benefits principle. BT applies the future benefits principle where it expects to use the 21CN network for services at some undetermined point in the future.

9.168 As part of the WBA Market Review, Ofcom did not include some 21CN cost for the basis of setting prices as they were attributed on the basis of the future benefits principle. [261] BT has been directed to follow this treatment in the Regulatory Financial Statements in the Direction for Regulatory Financial Reporting 2015. [262]

[260] Cartesian, Cost Attribution Review, section 6.2.3.4
[261] Wholesale Broadband Access Market Review, Section 7, page 240: http://stakeholders.ofcom.org.uk/binaries/consultations/review-wba-markets/statement/WBA-Statement.pdf
[262] Ofcom, Directions for Regulatory Financial Reporting Statement 2015, Annex 2, page 107

9.169 Cartesian explain that 21CN costs are attributed as follows, "21CN costs are attributed to regulated and unregulated markets using an Excel model (the "21CN model"). The model attributes 21CN capital expenditure to plant groups and network components on the basis of annual depreciation. The model applies the same logic to attribute all 21CN costs, although different base methodology names are used for different elements of the 21CN."[263]

9.170 In the 2015 Directions for Regulatory Financial Reporting Decision we said that "we do not consider that BT's future benefits approach is an appropriate way to allocate costs for 21CN services."[264] We explained that while we will consider any future application of the future benefits principle by BT on a case by case basis, given our concerns we are unlikely to consider its use appropriate.

Cartesian's assessment

9.171 Cartesian noted that "Ofcom has determined that BT shall not attribute costs to the regulated markets on the basis of "future benefits", e.g. attributing network costs to services under the assumption that the services will use those network assets in the future (but not today). BT has identified eight components in the 21CN network that attribute costs to regulated services on the basis of future benefits. In the 2013/14 [Regulatory Financial Statements], costs are attributed from these components to the AISBO markets with Business Connectivity and both of the WBA markets". [265]

9.172 Additionally Cartesian note "the 21CN model directly allocates the costs of certain network elements to Pathfinder voice services (namely: Infrastructure Ethernet, Media Gateway and EEA Ports Voice). These costs are ultimately attributed to Narrowband Services. From the 21CN Model, the combined value of these assets appears large in relation to Pathfinder, hence we are concerned that these assets may be part of a larger (nationwide) infrastructure which was deployed before BT changed its 21CN strategy with respect to voice. As such, it may also represent a type of future benefit."[266]

9.173 In conclusion Cartesian has noted that eight components in the 21CN network currently attribute costs to regulated services on the basis of future benefits.

Our assessment

9.174 BT have stated in their Change Control notification that "we no longer intend to use the 'future benefits' principle for allocating 21st Century Network (21CN) costs. The 21CN refers to our modern, Internet Protocol (IP) based, converged telecommunications network". [267]

9.175 We consider that no further changes are necessary as a result of our review.

9.176 We will keep BT's application of 21CN Depreciation and future benefits under review.

[263] Cartesian, Cost Attribution Review, paragraph 6.2.20.1
[264] Ofcom, Directions for Regulatory Financial Reporting Statement 2015, page 63, paragraph 4.214
[265] Cartesian, Cost Attribution Review, paragraph 6.2.20.4
[266] Cartesian, Cost Attribution Review, paragraph 6.2.20.4
[267] BT, Change Control Notification 2015, Section 3.8

10. Duct Valuation and Cable Depreciation methodology

Background

9.177 Once BT has categorised costs as Access Duct Costs the costs need to be split between the cables which use the Duct (Copper and Fibre). Cartesian explained that a combination of duct valuation and cable depreciation is used by BT to apportion access duct costs from Access Duct (AG135) to the various PGs representing the different cable types in those ducts.[268]

9.178 Cartesian said that it understood that these costs are attributed to the PGs on a similar basis to the PDTDUCT base methodology which uses duct valuation to apportion duct-related costs at ledger level into Access Duct (AG135). [269]

9.179 In this case the first step of the apportionment is based on the Fibre:Copper access ratio (rather than Access:Core ratio). In a second step, the respective fibre and copper costs are apportioned based on the relative depreciation of the different cables in access.

9.180 BT uses an Excel model to calculate the apportionment percentages called 'OR_Duct'.[270]

Cartesian's assessment

9.181 In its review of the Duct valuation and cable depreciation methodology Cartesian identified concerns in respect of Consistency of the Regulatory Financial Statements.

9.182 Cartesian found that "apportionment of access duct cost uses cable depreciation (of copper and fibre) as an input."[271] "In contrast, apportionment of access fibre costs is based on fibre GRC[…]. Although the apportionments are not interrelated, it is not obvious why two different valuation metrics have been chosen." [272]

9.183 Cartesian considers that BT should not use two different valuation methods for the apportionment of Access Duct (Depreciation) and Fibre (GRC).

Our assessment

Is the current methodology clearly inappropriate?

9.184 Where the necessary information is available it would be preferable to have a consistent approach to apportioning duct and cable costs (for example using GRC values to allocate all duct costs).

9.185 Where this information is not available, such as in the case of the Duct valuation and cable depreciation methodology, an apportionment based on depreciation is appropriate since it should result in comparable attribution proportions where depreciation is calculated on a basis consistent with GRC.

[268] Cartesian, Cost Attribution Review, paragraph 6.3.2.1
[269] BT's 2014 DAM, Page 126
[270] BT, Model 018_OR_Duct, 29/09/2014
[271] Note: BT use duct depreciation for the attribution to copper plant groups but cable depreciation for Fibre, not cable depreciation as stated by Cartesian
[272] Cartesian, Cost Attribution Review, paragraph 6.3.2.4

9.186 Therefore, we do not consider that the current methodology is clearly inappropriate.

11. Light User Scheme (Miscellaneous)

Background

9.187 BT Basic is a low-cost telephone service for customers claiming Income Support, Income-based Jobseeker's Allowance, Pensions Credit (Guaranteed Credit), Employment Support Allowance (Income related) or Universal Credit (and are on zero earnings) and is also known as the Light User Scheme.

9.188 Although the service is sold by BT Retail, the cost for providing this service is borne by Openreach and Retail.[273] The Openreach Contribution to Light User Scheme costs are allocated to the Wholesale Residual Market.

Cartesian's assessment

9.189 In its assessment of the Light User Scheme attribution Cartesian identified concerns with the attribution of BT Retail costs to Openreach.

9.190 Cartesian said that "BT attributes costs of Openreach Contribution to Light User Scheme to Wholesale Residual Market. Since Light User Scheme relates to a Retail product, Cartesian would have expected these costs to be attributed to Retail Residual market."[274]

Our assessment

Is the current methodology clearly inappropriate?

9.191 We have explored Cartesian's concerns with BT and consider that Light User Scheme costs are most appropriately attributed to wholesale residual and not to retail residual markets. We understand this trade is for BT Retail to recover the lost revenue associated with BT Basic.

9.192 In 2008, we directed BT to adopt a cost attribution treatment that excludes the attribution of any costs associated with the provision of the Light User Scheme to any markets with the SMP designation as we considered most of the benefits accrued at the retail level.[275] BT were attributing an estimation of the cost of Light User Scheme to wholesale access markets, and by doing that were implying that the costs should be recovered in charges such as wholesale line rental (WLR). As we have previously provided direction on this, we do not currently consider that the current attribution basis is clearly inappropriate.

[273] Cartesian, Cost Attribution Review, paragraph 5.10.16.5
[274] Cartesian, Cost Attribution Review, paragraph 6.5 – Concerns outside the RAP
[275] Changes to BT's 2007/08 Regulatory Financial Statements. Explanatory statement and notification. 26 June 2008.
http://stakeholders.ofcom.org.uk/binaries/consultations/btregs08/statement/statement.pdf

12.TSO Billing System Methodology

Background

9.193 BT's TSO division incurs costs in supporting other BT units. TSO manages technology innovation, the global IT platforms, the group customer experience and Service, Strategy and Operations.

Cartesian found that "the records in the TSO billing system are used to apportion costs that TSO incurs in supporting other BT units. It uses project codes, cost categories and OUCs to determine the weights and destination of cost attribution. The TSO Billing System is only used to attribute costs from F8/OUC (Level 0) to activity groups and plant groups." [276]

Cartesian's assessment

9.194 In its assessment of the TSO Billing System Methodology Cartesian identified concerns in respect of causality.

9.195 Cartesian found that concerns about this methodology fully satisfying the Causality principle because of the use of different attribution methodologies. [277] Cartesian recommended, that "a better alternative may be to attribute the costs based on the type of non-specific development."[278]

Our assessment

Is the current methodology clearly inappropriate?

9.196 We have considered Cartesian's findings in the light of further information provided by BT. Our assessment is that the current methodology does attribute the costs based on the type of non-specific development and is therefore not clearly inappropriate.

Attribution methodologies considered as part of the LLCC

13. Service Level Guarantee penalties (Miscellaneous)

Background

9.197 Service Level Guarantee (SLG) Penalties are costs Openreach incur if it fails to meet the agreed standard for the provision and repair of Ethernet and WLR services.

9.198 These costs are attributed to the services against which a penalty has been incurred.

Cartesian's assessment

9.199 In its assessment of the SLG penalty attribution Cartesian identified concerns which relate to cost recovery.

[276] Cartesian, Cost Attribution Review, paragraph 6.2.12.1
[277] Cartesian, Cost Attribution Review, paragraph 6.2.12.4
[278] Cartesian, Cost Attribution Review, paragraph 6.2.12.5

9.200 Cartesian found that "BT attributes Service Level Guarantee (SLGs) penalties for the provision and repair of Ethernet and WLR services to the regulated markets. These attributions [✂ £10m to £50m] FAC) are made using the SLGETH and SLGWLR methodologies respectively. Attributing these costs to the regulated market is reasonable, however there may be an argument that BT should not be able to fully recover these costs from its customers in any future charge controls based on this cost data."[279]

9.201 Cartesian recommended, that "BT should not be able to fully recover these costs from its customers in any future charge controls based on this cost data'.[280]

Our assessment

9.202 SLG penalties are attributed to specific component for each product which makes the process of replacing the costs simple. In our view costs of SLG penalties should be attributed to the relevant services. The most appropriate point at which decisions about how BT should recover these costs is during market reviews and the setting of charge controls.

9.203 The 2015 LLCC Consultation has proposed replacing the costs BT incurred in relation to SLG with a level of payment that we consider to be appropriate for BT recover over the control period in light of the changes to BT's quality of service that we expect BT to make over the control period.[281]

9.204 We make no proposals in addition to those set out in the 2015 LLCC Consultation about SLG penalties and costs.

Question 9.1: Do you agree that the way BT attributes profits and losses on disposal of land and buildings is clearly inappropriate and, if so, do you agree that it should instead attribute them in the way we propose in Section 9?

Question 9.2: Do you agree that the way BT attributes non-chargeable vacant space to be clearly inappropriate and, if so, do you agree that it should instead attribute them in the way we propose in Section 9?

Question 9.3: Do you have any comments on our assessment of the other attribution methodologies considered in section 9? Specifically, do you have any information that you consider to be relevant to our assessment of whether the methodologies are appropriate and of any alternative attribution methodologies that might replace them?

[279] Cartesian, Cost Attribution Review, paragraph 6.5
[280] Cartesian, Cost Attribution Review, paragraph 6.5
[281] The Leased Lines Charge Control, June 2015, Annex 7

Section 10

Review of supporting evidence

Introduction

10.1 As we explain in Section 3, in the course of our review of BT's cost attribution rules, we have also found issues which do not strictly relate to the rules by which BT attributes its cost. These included concerns relating to the evidence that BT uses to support its cost attribution methodologies. We set out these issues in this section. Given that BT's supporting evidence has not been the focus of our review, it is possible that there may be other issues relating to the sources of evidence used by BT.

Review of supporting evidence

10.2 The Regulatory Accounting Principle of *objectivity* requires that each element of Regulatory Financial Reporting, so far as is possible, must take account of all the available financial and operational data that is relevant to that element. Also, where an element of Regulatory Financial Reporting is based on assumptions, those assumptions must be justified and supported by all available relevant empirical data. The assumptions must not be formulated in a manner which unfairly benefits BT or any other operator or entity, or creates undue bias towards any part of BT's or any other operator's business or product.

10.3 The Regulatory Accounting Principle of *accuracy* requires that each element of the Regulatory Financial Reporting must maintain an adequate degree of accuracy, such that the information included in the Regulatory Financial Statements is free from material errors and double-counting.

10.4 During the course of its review Cartesian noted that in certain cases the supporting data on which BT's cost attribution methodologies rely could be improved. Cartesian considered that, in some areas, the current data source may not be up to date, appropriate or contain all information required to make an informed attribution decision. In particular, Cartesian found issues concerning accuracy, transparency, causality, objectivity and consistency with the Regulatory Financial Statements.

10.5 It also became apparent that some supporting calculations (such as Excel spreadsheets) that generate percentages to be input into the cost attribution system are difficult to review, not transparent and potentially not fit for purpose.

10.6 We have considered further the issues raised by Cartesian. Our provisional view is that in some cases BT may not be using the most objective and accurate source of data. We also considered that certain aspects of BT's supporting evidence are not transparent and are therefore difficult to follow. In some of those cases we have suggested an alternative source of data which could offer a better, more objective source of evidence.

10.7 Additionally, where we consider there may be scope for BT to update its supporting calculations, we expect BT to take the necessary steps to address these concerns. In the event that BT has not adequately addressed our concerns, we will consider whether more prescriptive action may be appropriate.

10.8 Finally, while we consider that there may be issues relating to BT's current evidence source, in some cases we have not been able to identify a better alternative. We will therefore engage with BT to gain a better understanding of the available sources of information. There are also instances in which we have noted and considered the issues raised by Cartesian but we do not recommend any changes to the sources of data used by BT.

10.9 We consider the following issues in this section:

a) Duct valuation

b) Duct valuation and cable depreciation

c) Depreciation of 21CN (Cost attribution model)

d) Number of fibres used and Fibre Bandwidth & Length

e) Number of Fibres methodology (Access Rentals Model)

f) Fibre Bandwidth and Length methodology (New CTCS Model)

g) Power Consumption for TSO

h) Operator assistance costs (Miscellaneous – Accuracy)

i) TSO Billing System

j) Asset Policy

k) Vendor Contracts.

Duct Valuation methodology

Background

10.10 Duct is the pipe within which cables and other equipment are installed. Run underground, duct comes in a variety of sizes but the majority is in one or two bores. Costs incurred while working on duct are booked to various classes of work (CoW). Those CoWs do not correspond to the elements of the network that duct is part of. For example, access duct tends to run from local exchanges to customer premises, whereas core/backhaul duct tends to link exchange buildings and other CP networks.

10.11 It is not a simple task to assign a specific cost to a specific type of duct and BT therefore uses an apportionment method. Cartesian explained that "the duct valuation method is used to apportion duct costs between access and backhaul duct-related cost categories at Level 1."[282] The duct valuation is used by a single base methodology, PDTDUCT.[283]

[282] Cartesian, Cost Attribution Review, section 6.2.2.1
[283] BT's 2014 DAM, Page 84

Cartesian's assessment

10.12 Cartesian identified accuracy concerns in its review of the Duct Valuation methodology. These concerns were due to the reliance of the Duct Valuation methodology on historic data.

10.13 Cartesian said that given that "using 1997 GRC plus capital subsequently spent since then – may not accurately reflect cost distribution in the network." [284] BT has a Geographical Information System known as the Network Engineering Journey ("the NEJ system") which contains duct records. These [NEJ] records were used in the West East and Central London Area (WECLA)/Non-WECLA split where they might provide greater accuracy.

10.14 Cartesian believed that "the use of a GIS system would produce a more accurate cost attribution." [285] Cartesian went on to "recommend that the cost and impact of such a change be properly assessed, rather than dismissed without evaluation."[286]

Our analysis and view

10.15 We have considered Cartesian's findings and understand that the NEJ system now contains data from more than 90% of exchanges.

10.16 In addition to the accuracy issues, we have also considered BT's data on which the Duct Valuation methodology relies in light of the objectivity principle. In our view the Duct Valuation methodology may not take account of all of the available data which is relevant to valuing duct. BT may have a more objective source of data which could be practicable for BT to use instead of the historic data currently relied upon by the Duct Valuation methodology. In particular, we expect BT to investigate whether the data contained in the NEJ system is a more appropriate source of data in comparison to the existing historic data. We will work with BT to gain a better understanding of whether and if so, how the information contained in the NEJ system or other data could be used for the purposes of the Duct Valuation methodology.

Duct Valuation and Cable Depreciation methodology

Background

10.17 Costs categorised as access duct costs need to be split between the different cables (copper and fibre) which use duct. BT uses a combination of duct valuation and cable depreciation methods to apportion access duct costs from access duct (AG135) to the various plant groups representing the different cable types in those ducts.[287]

10.18 The first step apportions access duct costs based on the fibre:copper access ratio instead of access:core ratio. In the second step, the respective fibre and copper costs are apportioned based on the relative depreciation of the different cables by access segment.

[284] Cartesian, Cost Attribution Review, section 6.2.2.4
[285] Cartesian, Cost Attribution Review, section 6.2.2.5
[286] Cartesian, Cost Attribution Review, section 6.2.2.5
[287] Cartesian, Cost Attribution Review, section 6.3.2.1

Cartesian's assessment

10.19 Cartesian identified an accuracy concern in its review of the Duct Valuation and Cable Depreciation methodology.[288] Cartesian did not consider that the allocation was accurate because "the duct valuation model used to determine the split between copper duct and fibre duct doesn't appear to take into account the addition or removal of cables in the duct". As such the Duct Valuation and Cable Depreciation methodology does not account for unoccupied duct space and the most likely future use of this.[289]

10.20 This would mean that, if duct was originally created for a copper cable, but a fibre was laid in the duct at a later stage the valuation on which the allocation of duct is based will always be categorised as copper duct.

Our analysis and view

10.21 In addition to the accuracy issues, we have also considered BT's data on which the Duct Valuation and Cable Depreciation methodology relies in light of the objectivity principle. We consider that this method may not take account of all of the available data which is relevant to the duct valuation and cable depreciation.[290]

10.22 We understand that the NEJ system may already record the type of cable occupying each section of duct for over 90% of exchanges. We therefore consider that the NEJ system may be a more objective data source. We expect BT to investigate whether the NEJ system contains more appropriate data for the purposes of the Duct Valuation and Cable Depreciation methodology in comparison to the current data on which this methodology relies. We will work with BT to understand better whether and if so, how the information contained in the NEJ system or other data could be used for the purposes of the Duct Valuation and Cable Depreciation methodology.

Depreciation of 21CN (Cost attribution model)

Background

10.23 BT's 21st Century Network (21CN) costs are attributed to regulated and unregulated markets using apportionments calculated in an Excel model (the "21CN model").[291] The model attributes 21CN capital expenditure to plant groups and network components on the basis of annual depreciation. It applies the same logic to attribute all 21CN costs, although different base methodology names are used for different elements of the 21CN.[292]

10.24 The majority of 21CN costs are attributed to the Wholesale Broadband Access (WBA) and Business Connectivity (BC) markets, with a small amount going to Narrowband and Fixed Access Markets.

[288] BT, 2014 DAM, AG135, page 126
[289] Cartesian, Cost Attribution Review, section 6.3.2.4
[290] Please note we address Cartesian's objectivity concern in Section 11 of this consultation, 'Review of supporting documentation'
[291] BT do not include a description of the 21CN model in the supporting documents
[292] Cartesian, Cost Attribution Review, page 364, section 6.2.20.1

Cartesian's assessment

10.25 Cartesian said that "the main issue with 21CN cost attribution is the scale, complexity and poor layout of the 21CN Model which prevents Cartesian from fully validating whether the model accurately follows the attribution principles."[293]

10.26 Cartesian also noted that "in the 2014 Current Cost Financial Statement, BT's auditors have noted that they are unable to comment on the accuracy of the method and the sources of data used to determine the 21CN cost attribution."[294]

10.27 The 21CN model relies on the input of technical experts around BT. This input is hardcoded into the model. Cartesian understands that some inputs are being used in the model purely for historic reasons. Absent new information, BT has continued to use historic data points.

10.28 Cartesian recognised that "apportionment of costs in next-generation networks (NGNs) presents challenges regarding objectivity, transparency and causality."[295] In Cartesian's view, this was due to one of the major technical advantages inherent NGNs – the ability to dynamically allocate common network resources across multiple services. The main issues this presents for cost attribution are:

- ensuring that usage of resources by services is measured accurately and objectively; and

  establishing an objective, causal basis for cost attribution.

10.29 In its review Cartesian identified accuracy, objectivity and consistency concerns in its review of the 21CN model. Cartesian recommended that "BT invests in rebuilding the model to improve confidence in its inputs, methodology and outputs."[296] Cartesian also explained that BT should review its current model and conduct an exercise to ensure that historic inputs are relevant.

10.30 During this review BT acknowledged the above concerns and indicated that it planned to improve the model to address these shortcomings.[297] We understand that BT is already in the process of rebuilding the 21CN model.[298]

Our assessment

10.31 We have considered the issues highlighted by Cartesian and consider that BT should improve or replace its current 21CN model in time to produce reliable results for the next Wholesale Broadband Market Review. We will work with BT to ensure that the new model is fit for purpose. In the event that BT has not adequately addressed our concerns we will consider whether more prescriptive action may be appropriate.

[293] Cartesian, Cost Attribution Review, section 6.2.20.4
[294] Cartesian, Cost Attribution Review, section 6.2.20.4
[295] Cartesian, Cost Attribution Review, section 6.2.20.4
[296] Cartesian, Cost Attribution Review, section 6.2.20.4
[297] Cartesian, Cost Attribution Review, section 6.2.20.4
[298] We address Cartesian concerns regarding future benefits in Section 9, 'Review of other attribution methodologies'

Number of Fibres and Fibre bandwidth & length (Unused Fibre)

Background

10.32 Access fibre is the term used for fibres on the customer side of the exchange. Access fibre is split into two groups; distribution and spine. Distribution fibre refers to the fibres which run between the fibre node and the customer premises and spine fibre refers to the fibres which run between the fibre node and the optical distribution frames in the local exchange.

10.33 BT attributes costs to network components (representing circuits) based on the number of fibres used by each circuit type in the access network.[299]

10.34 BT uses a combination of bandwidth and fibre length to apportion core and backhaul fibre costs (PG350N and PG170B) to network components. A detailed Excel model, called the 'New CTCS' model, is used to determine how circuits (components) use the network (in terms of bandwidth consumed on the fibre network).[300]

Cartesian's assessment

10.35 Cartesian found that "there may be a causality issue in the treatment of unused fibre. The cost of unused fibre in the network is allocated equi-proportionally to services based on current fibre usage. However the unused fibre will be of greater benefit to growth services rather than legacy services that may be in decline."[301]

10.36 The method assumes that the current use of fibre within the network reflects what more recently installed and unlit fibre will be used for.

10.37 Cartesian suggested that "it may be possible to account for the long term expected benefit of fibre to services based on forecasted sales volumes. In practice this is likely to be difficult to achieve on an objective basis."[302]

Our analysis and view

10.38 There are a number of reasons why there may be spare fibre capacity built into BT's network. For example, spare fibre could be in place:

a) for use in case of faults;

b) due to efficiency gains from laying larger fibre sheaths;

c) for growing services; or

d) for maintaining old services.

10.39 Based on the data that BT has provided we are unable to determine the level of the unused fibre costs as compared with the used fibre costs.

[299] Cartesian, Cost Attribution Review, section 6.3.3.1
[300] Cartesian, Cost Attribution Review, section 6.3.4.1
[301] Cartesian, Cost Attribution Review, section 6.3.3.4
[302] Cartesian, Cost Attribution Review, section 6.3.3.5

10.40 However, there may be difficulties in allocating any unused fibre to newer services. For example, it is difficult to predict which services will grow and at what rate. Additionally, if fibre is unused it does not necessarily mean that it is newly installed or has been intended for new services.

10.41 We note that BT may already have data in the NEJ system, Integrated Network Systems (INS) [303] or other systems and project ledgers which provide a more objective basis. Due to the complexity of this issue and time constraints we have not had an opportunity to understand fully what additional data is available.

10.42 We expect BT to investigate whether the NEJ system is a more appropriate source of data in comparison to the existing source. We will work with BT to understand better whether and if so, how the information contained in the NEJ system or other data could be used for the purposes of the method used for allocating unused fibre.

Number of Fibres methodology (Access Rentals Model)

Background

10.43 Access fibre refers to fibres on the customer side of the exchange. Access fibre is split into two groups; distribution and spine. Distribution fibre refers to the fibres which run between the fibre node and the customer premises and spine fibre refers to the fibres which run between the fibre node and the optical distribution frames in the local exchange.

10.44 As explained in paragraph 10.33 above, access fibre costs are allocated from plant group to component based on the number of fibres used by each circuit type in the access network.[304]

10.45 BT uses what it calls its Access Rentals Model to calculate the allocations for the Number of Fibres methodology by computing the number of circuits in a bearer.

Cartesian's assessment

10.46 Cartesian identified an objectivity concern in its review of the Access Rentals Model. Cartesian explained that "the CTCS model calculations are not transparent. The calculations involve a relatively high number of steps with variables coming from several different sources which make it difficult to follow. The network model is also not transparent as it contains several intermediate steps which are not explained. This makes it very hard to follow."[305]

10.47 We understand from Cartesian that its reference to the CTCS model calculations is in fact a reference to the CTCS circuit calculations in the Access Rental Model.

10.48 Cartesian has further explained to us that: "calculations in the Access Rental Model are not fully transparent. The model has a relatively high number of unexplained steps and takes variables from several different sources which make it difficult to follow."[306]

[303] BT's 2014 DAM, page 280
[304] Cartesian, Cost Attribution Review, section 6.3.3.1
[305] Cartesian, Cost Attribution Review, section 6.3.3.4
[306] Cartesian, Email 20/03/2015, between Cartesian ([✂]) and Ofcom ([✂])

Our assessment

10.49 We agree with Cartesian's assessment that the calculations in the model are not transparent and are therefore difficult to follow. In light of this, we consider that BT should improve its current Access Rentals Model to address the above issues. We will work with BT to ensure that the model is fit for purpose and addresses the above concerns.

10.50 In addition, we consider that BT should update the description of the allocation basis in the Accounting Methodology Documents.

10.51 In the event that BT has not adequately addressed our concerns we will consider whether more prescriptive action may be appropriate.

Fibre Bandwidth and Length methodology (New CTCS Model)

Background

10.52 Core and backhaul fibre are the terms used for fibres in the main network. These fibres do not feed directly to the consumer, instead they link exchange sites and local access nodes. We defined the term 'Backhaul Product' as part of the Undertakings provided by BT on the creation of BT's Access Division (Openreach).[307]

10.53 Core and backhaul fibre costs are attributed from plant groups to components based on bandwidth and fibre length. A detailed Excel model, which is called the New CTCS Model[308], is used to determine how circuits (components) use the network (in terms of bandwidth consumed on the fibre network)[309].

10.54 The length of the fibres in backhaul and core networks must be taken into account because circuits take different routes. Therefore, the apportionment base is determined not only by the share of fibre bandwidth used (as per access fibre allocation) but also by the fibre length of each circuit.

10.55 BT defines a combined fibre length x bandwidth factor and uses it to calculate the apportionment percentages. 'Fibre km' (summed length of individual fibres) is used as the fibre length in the calculation rather than 'Sheath km' (length of fibre cables) as the quantity of fibres in fibre cables varies in the network.

Cartesian's assessment

10.56 Cartesian identified a concern in its review of the New CTCS Model. Cartesian explained that "the transparency of the network model could be improved. The model includes several redundant steps and could be simplified to mitigate potential human errors."[310]

[307] Ofcom, Undertakings: http://stakeholders.ofcom.org.uk/binaries/telecoms/policy/bt/btundertakings.pdf
[308] BT, Model 051_BTW_PG_to_Comp (New CTCS)_P12 13-14_submission, 24/09/2014
[309] Cartesian, Cost Attribution Review, section 6.3.4.1
[310] Cartesian, Cost Attribution Review, section 6.3.4.4

Our assessment

10.57 We agree with Cartesian's assessment that the calculations in the model are not transparent and are therefore difficult to follow. We have also noted that Cartesian's concern was further compounded by the identification of mathematical errors in the New CTCS Model. We explain what these errors were as part of the core and backhaul fibre allocation error in Section 7.

10.58 As part of our analysis we have considered the CTCS description set out in BT's DAM.[311] In light of the fact that we were unable to verify the apportionment percentages in the model, we consider that BT should simplify the New CTCS Model and improve the description provided in the DAM. In the event that BT has not adequately addressed our concerns we will consider whether more prescriptive action may be appropriate.

Power Consumption for TSO

Background

10.59 Power consumption for TSO relates to electricity costs incurred by equipment owned by the TSO unit in local exchanges.

10.60 The attribution of electricity charge to TSO is done on the basis of power consumption of each network element. BT uses the network equipment specification to determine the power consumption for each network element. BT calculates the attribution of electricity using a TSO Electricity model and the base methodology DTNELSP.[312]

10.61 A separate method is used to attribute electricity charges to Openreach. Power consumption of Openreach is attributed using the same methodology (DTNELSP) which specifies how the operational buildings costs incurred by Openreach are attributed. [313]

Cartesian's assessment

10.62 Cartesian identified an accuracy concern in its review of the TSO Electricity model.[314] In particular, Cartesian found that the TSO Electricity model "shows that there is an 863% increase in power consumption data used for 21CN in FY 13/14 (from FY 12/13) due to a change in data source."[315]

10.63 Cartesian explained that "according to BT, the revised figures come from a more reliable source. Since there are no further details provided regarding the eight-fold increase in power consumption for 21CN, Cartesian is concerned about the reliability of this information and rationale for BT to determine a better power consumption measure for FY13/14. Due to limited time on the project, Cartesian was unable to seek a detailed response from BT on this variance." [316]

[311] BT's 2014 DAM, page 258
[312] Cartesian, Cost Attribution Review, section 6.2.14.1
[313] BT's 2014 DAM, Page 57
[314] BT, Model 024 TSO Electricity Best Practice Model P12 FT 1314 FINAL, 24/09/2014
[315] Cartesian, Cost Attribution Review, section6.2.14.4
[316] Cartesian, Cost Attribution Review, section 6.2.14.4

Our analysis and view

10.64 We note BT's explanation that the revised figures for power consumption for 21CN in 2013/14 came from an improved data source in TSO. The revised power consumption data shows 21CN power usage is significantly larger than the 100W average used in the prior year. [317]

10.65 In light of the above, we have concerns with the reliability and accuracy of the data.. For that reason we are also concerned about the accuracy of the attribution. Given that there has been a change in the data source between 2012/13 and 2013/14 Regulatory Financial Statements, it is possible that the new alternative data source is more accurate and objective. However, we have not seen evidence to support this. We will ask BT to corroborate the estimates and forecasts to verify the increase in electricity consumption. If BT is unable to verify the data source and if necessary, we will consider whether BT should revert to the 2012/13 data source.

Operator Assistance Costs (Miscellaneous – Accuracy)

Background

10.66 Operator Assistance is a free service provided with call origination services. It includes operator assistance if you dial 100, alarm calls and reverse charge calls.

10.67 The Operator Services Plant Group contains pay and non-pay costs of operators working on Operator Assistance Inland and Emergency Services. Costs are attributed to this plant group by calculating the total labour costs associated with BT Retail's Customer Contact Centres and apportioning those related to operator services to the relevant plant group; the remainder are then apportioned to other retail products.[318]

Cartesian's assessment

10.68 Cartesian identified an accuracy concern in its review of the allocation of Operator Assistance costs. Cartesian explained that it is concerned about BT accurately identifying the costs relating to Operator Assistance Inland. Cartesian found that there appears to be no OUC separation between teams supporting retail products (e.g. customer care call centre) and those supporting Operator Services. Separating the business units will make attributions more transparent and may also improve accuracy.[319]

10.69 In response to Cartesian's question BT explained that, "BT Retail set these functions up as shared resource centres combining emergency services, directory enquiries, operator services and text relay. The centres are organised by geographical location but not by call type, which is shared across the centres. The team, and therefore the OUC, structure thus does not correspond to the different functional areas that the agents deal with."[320]

[317] BT, Model 024 TSO Electricity Best Practice Model P12 FT 1314 FINAL, tab 'C12. Calc12-21CN', 24/09/2014
[318] Cartesian, Cost Attribution Review, section 5.10.16.13
[319] Cartesian, Cost Attribution Review, section 6.5
[320] Cartesian, Cost Attribution Review, section 6.5

Our view

10.70 After further analysis we found that the Operator Services Plant Group contains less than 1% of all BT's costs. Although separate business units may increase accuracy of the allocation, we do not recommend any changes at this stage. This is due to the fact that creating two separate business units is likely to be disproportionate given the size of costs being allocated.

TSO Billing System methodology

Background

10.71 The TSO division incurs costs in supporting other BT units. TSO manages technology innovation, the global IT platforms, the group customer experience and Service, Strategy and Operations.

10.72 The records in the TSO billing system are used to apportion costs that TSO incurs in supporting other BT units. It uses project codes, cost categories and OUCs to determine the weights and destination of cost attribution. The TSO Billing System is only used to attribute costs from F8/OUC (Level 0) to activity groups and plant groups.[321]

10.73 These base methodologies are TSO EXCEPT base methodologies.[322]

Cartesian's assessment

10.74 Cartesian explained that the accuracy of the methodology is reliant on manual attributions. As the EXCEPT base methodologies are manually configured within ASPIRE (annually) to determine the destination cost categories, there is a risk of human error that may result in incorrect attribution and destinations being defined.

10.75 Cartesian therefore recommended that BT applies due-diligence and extra checks to reduce the probability of this risk. [323]

Our view

10.76 While BT may wish to review the provision of data for the purpose of this attribution methodology in the REFINE system, we do not recommend any specific changes at this stage.

10.77 The project ledger is the most accurate source of information to inform the apportionment, however BT must ensure the base in the attribution system is updated to reflect the projects carried out in each financial year.

Asset Policy

Background

10.78 Projects which have been capitalised are recorded on the fixed asset register. The costs of these assets (depreciation) are then allocated to plant groups.

[321] Cartesian, Cost Attribution Review, section 6.2.12.1
[322] BT's 2014 DAM, Page 36
[323] Cartesian, Cost Attribution Review, section 6.2.12.4

10.79 BT attributes certain costs relating to capitalised engineering activities and network related assets (e.g. NGA DSLAM and Cabinets) using Asset Policies. These Asset Policies provide an attribution methodology based on depreciation. [324]

Cartesian's assessment

10.80 Cartesian identified a concern relating to consistency within the Regulatory Financial Statements in its review of the Asset Policy methodology. Cartesian found that "this cost allocation method attributes different types of capitalised costs (e.g. engineering activities and assets) based on Class of Work data. For example, depending on how asset costs have been previously attributed by a CoW (i.e. NBV, GRC, etc.), this methodology will use attribution percentages from previously used methodologies for those specific capitalised costs."[325] Cartesian said that it is "concerned that this may lead to inconsistent treatment of similar type of capitalised cost attribution when using Asset Policy methodology."[326]

10.81 Cartesian suggested that "a potential alternative will be for BT to add another layer of logic to determine the type of capitalised/asset costs being attributed when using this method. The purpose of this additional layer of logic would be to bring consistency in the attribution of capitalised costs when using this method."[327]

Our view

10.82 Given BT's use of a multi-stage attribution model, it may be difficult to avoid all changes in attribution bases from one stage to the next. Instead, we consider it is more important that similar costs are treated consistently at each stage. We do not therefore recommend a change to the current data source on which the Asset Policy methodology relies.

Vendor Contract Value methodology

Background

10.83 External parties who provide network equipment to BT also have contracts to provide support for that equipment; these are known as vendor support contracts. [328]

10.84 Costs for vendor support, which is typically on a fixed term contract, are attributed using the contract values. PDTSCNM[329] base uses this methodology to attribute the vendor support costs.[330]

Cartesian's assessment

10.85 Cartesian identified concerns in its review of the Vendor Contract Value methodology. Cartesian said that it "has concerns that this methodology appears to apply all CoW driven methodologies related to a platform. Since the costs of

[324] Cartesian, Cost Attribution Review, section 6.2.19.1
[325] Cartesian, Cost Attribution Review, section 6.2.19.4
[326] Cartesian, Cost Attribution Review, section 6.2.19.4
[327] Cartesian, Cost Attribution Review, section 6.2.19.5
[328] Cartesian, Cost Attribution Review, section 6.2.18.1
[329] BT's 2014 DAM, Page 100
[330] Cartesian, Cost Attribution Review, section 6.2.18.1

contracts relate to 'support' activities, only the CoW relating to support activities should be used to attribute costs."[331]

10.86 Cartesian said that "an alternative method would be to separate CoW into different types (e.g. Capitalised Development, Maintenance, Support, etc.) and attribute costs using the base methodologies that relate to support activities only".[332]

Our view

10.87 We have asked whether BT could map support contracts directly to CoWs rather than to platforms. BT explained that it is able to gather information about the general asset types (platforms) that are being supported but not the specific assets (CoWs). We therefore consider that it would not be possible for BT to adopt the approach suggested by Cartesian.

Question 10.1: Do you have any comments on our provisional assessment of the supporting evidence used by BT to inform its cost attribution methodologies, as described in Section 10? Specifically, do you have any suggestions for alternative data sources?

[331] Cartesian, Cost Attribution Review, section 6.2.18.4
[332] Cartesian, Cost Attribution Review, section 6.2.18.5

Section 11

Review of documentation

Introduction

11.1 In this section, we consider the issues identified by Cartesian that relate to the documentation that supports BT's cost attribution system.

11.2 Where we have concluded that supporting documentation is not sufficiently clear and transparent, we set out the steps we consider BT needs to take to address those issues.

Background

11.3 Under the Regulatory Accounting SMP conditions which apply to BT, BT is required to maintain and publish documentation which set out a description of BT's cost attribution rules. BT also has an obligation to maintain sufficient accounting records.

11.4 In the Regulatory Financial Reporting Decision[333] we introduced changes to the way BT prepares its accounting documents to improve transparency of the basis of preparation. We revised the requirements in relation to *transparency* of BT's documentation. In doing so, we decided that BT's documentation needs to ensure that a suitably informed reader can obtain a clear understanding of the rules which BT applies in preparing the Regulatory Financial Statements[334].

11.5 We explained that we would work with BT to ensure that Accounting Methodology Documents (which will replace the current Primary Accounting Documents to the extent they have not been replaced by the Regulatory Accounting Guidelines) and Secondary Accounting Documents are transparent and user friendly. We said that we would assess how well the 2015 Accounting Methodology Documents meet the needs of stakeholders (including Ofcom's needs). We explained that, if we considered that that the Accounting Methodology Documents fail to meet those needs, we will consider whether more prescriptive action might be necessary.

11.6 The changes which we introduced in the Regulatory Financial Reporting Decision will take effect for the 2014/15 Regulatory Financial Statements and the Accounting Methodology Documents to be published in July 2015. As we explained in the 2014 Regulatory Financial Reporting Decision, our decisions will in the short term have most impact on how BT drafts the Detailed Attribution Methodology (DAM).

11.7 As explained above, our review of BT's cost attribution methods has been based on BT's Regulatory Financial Statements and accounting documents which were published in July 2014. At that time the revised transparency requirements were not in force yet.

11.8 In undertaking this review, it has become apparent that some explanatory documentation that explains how the cost attribution system works (including, for

[333] Regulatory Financial Reporting Statement, page 75, para 4.67

[334] The requirement for transparency was reformulated as part of the 2014 Regulatory Financial Reporting review so that such documentation no longer needs to provide a "detailed" understanding of the rules.

example, the DAM) are unclear and not sufficiently transparent. We also consider that some of the explanatory documentation appears inaccurate or inconsistent.

11.9 We have highlighted these instances in this document, and expect BT to take the necessary steps to address our concerns for the Accounting Methodology Documents due to be published in July 2015. However, should we find that the issues identified are not satisfactorily addressed, we will consider the appropriate response. As explained in Section 2 above, we may decide to have a further consultation on the issues raised in this document in autumn 2015 and, in the event that BT has not adequately addressed our concerns we will consider whether more prescriptive action may be appropriate.

Review of documentation

11.10 Cartesian's concerns relating to BT's explanatory documentation are summarised below, followed by our assessment of these issues. We have considered whether BT's explanatory documents are sufficiently clear (or "transparent").

11.11 As set out below, we consider the following issues:

1. E-side Copper Cable Depreciation
2. Fibre Length
3. Managed Services Contract Value
4. Property Cost Apportionment
5. TSO Billing System
6. Data Centre Budgeted Data
7. Duct Valuation and Cable depreciation
8. SFI and TRC 'equivalent cost'
9. Profit Weighted Net Replacement Costs (Cumulo rates)
10. Fixed access Markets Usage factors

E-side Copper Cable Depreciation methodology

Background

11.12 The Exchange side (E-side) of BT's network is the section between the exchange and the local distribution point (road side cabinet). It forms part of the access network.

11.13 Costs relating to copper cables in the E-side which are booked against the LMC class of work (CoW) are apportioned from the general ledger to activity and plant groups using an analysis of E-side copper cable depreciation charges. [335]

11.14 The E-side Copper Cable Depreciation attribution methodology is known as PDTLMC.[336]

[335] Cartesian, Cost Attribution Review, section 6.2.5.1
[336] BT's 2014 DAM, page 87

Cartesian's assessment

11.15 Cartesian identified a transparency concern in its review of the PDTLMC base methodology. Cartesian explained that the description of this methodology in the DAM is not clear. Cartesian noted that "a survey of asset registrations is used to apportion costs between TAMS equipment and Tie cables but BT does not explain how it uses it to determine the apportionment."[337]

Our assessment

11.16 We do not consider that the PDTLMC base methodology was explained in the 2014 DAM with sufficient clarity, in particular in relation to the explanation of some input data. We expect BT to address our concerns in the Accounting Methodology Documents due to be published in July 2015. In the event that BT has not adequately addressed our concerns we will consider whether more prescriptive action may be appropriate.

Fibre Length methodology

Background

11.17 Core and Backhaul Fibre are the terms used for fibres in BT's main network. They link exchange sites and local access nodes. We defined the term 'Backhaul Product' as part of the Undertakings provided by BT on the creation of BT's Access Division (Openreach).[338]

11.18 Cartesian explained that:

> "BT uses fibre length (km), [calculated from length of fibre sheaths multiplied by the number of individual fibres in each sheath,] to apportion backhaul and core fibre related costs between 20C and 21C networks and then uses the respective units and bearer types to apportion to the appropriated cost categories (at PG level)."[339]
>
> "BT said CJF is the main CoW now used for all core and backhaul fibre", and the corresponding base method is PDTCJF. [340]

Cartesian's assessment

11.19 Cartesian reviewed all base methodologies which use the fibre length methodology, concentrating on PDTCJF as it allocates over 75% of the Fibre costs in the General Ledger. Other base methodologies which use the Fibre Length method are PDTCJC and PDTMUC.[341] In its assessment Cartesian identified a concern about transparency.

11.20 Cartesian found that the description of PDTCJF in the DAM is not transparent. BT's DAM states that the identified methodologies apportion cost of the construction of

[337] Cartesian, Cost Attribution Review, section 6.2.5.4
[338] Ofcom, Undertakings:
http://stakeholders.ofcom.org.uk/binaries/telecoms/policy/bt/btundertakings.pdf
[339] Cartesian, Cost Attribution Review, section 6.2.7.1
[340] Cartesian, Cost Attribution Review, section 6.2.7.1
[341] BT, 2014 DAM, Pages 77 and 97

optical/metallic junction cable. [342] 'Junction cables' is a term used by BT for backhaul and core network fibre. [343]

Our assessment

11.21 As part of our assessment we have considered descriptions of the base methodologies provided to us by BT (PDTCJF, PDTCJC and PDTMUC). We note that BT uses the term 'optical fibre assets' in the descriptions of the base methodologies provided to us. [344]

11.22 Additionally, as a result of correcting the apportionment of duct to 21CN plant groups BT has indicated that it has also changed the apportionment of fibre. This additional update should be appropriately reflected in the documentation. Full details of the new methodology can be found in Section 7.

11.23 We do not consider that the PDTCJF, PCTCJC and PDT MUC base methodologies were explained in the 2014 DAM with sufficient clarity. We expect BT to address our concerns in the Accounting Methodology Documents due to be published in July 2015. In the event that BT has not adequately addressed our concerns we will consider whether more prescriptive action may be appropriate.

Managed Services Contract Value methodology

Background

11.24 Managed Services relate, in the main, to providing backhaul services to mobile operators. These are value added services that BT provides to mobile and other operators to enable them to manage their own networks.

11.25 BT uses the relative share of contract value to determine the attribution base. The Managed Services Contract Value methodology considered by Cartesian applies, in the main, to BT Wholesale. There may, however, be some TSO charges being attributed using this methodology. [345]

11.26 The Managed Services Contract Value methodology is used for the attribution called EXCEPT (KB) base methodology.[346] According to the DAM, this attribution method is also applied using EXCEPT (KV) base methodology,[347] which is applied to another OUC within BT Wholesale that provides managed services.

Cartesian's assessment

11.27 Cartesian considered that BT's DAM failed to properly explain the attribution methodology BT employs to determine the split of contract costs between regulated and unregulated markets. In Cartesian's view this means that the accounting methodology documentation is not transparent.

[342] Cartesian, Cost Attribution Review, section 6.2.7.4
[343] Cartesian, Cost Attribution Review, section 6.2.7.1
[344] BT, F8 OUC code detail, 30/09/2014
[345] Cartesian, Cost Attribution Review, section 6.2.16.1
[346] BT's 2014, DAM, page 35
[347] BT's 2014, DAM, page 35

Our assessment

11.28 As we explain in Section 7, BT's mobile service delivery unit moved during the 2013/14 financial year from BT TSO to BT Wholesale. Our analysis has shown that this change has not been captured in the supporting documentation published in 2014.

11.29 We do not consider that the EXCEPT KB and KV base methodologies were explained in the 2014 DAM with sufficient clarity. We expect BT to address our concerns in the Accounting Methodology Documents due to be published in July 2015. In the event that BT has not adequately addressed our concerns we will consider whether more prescriptive action may be appropriate.

Property Cost Apportionment Methodology

Background

11.30 Property costs are attributed from the general ledger to activity groups and are then further apportioned to other activity groups and plant groups.

11.31 DTNFA and PROPPROV are the two bases used to attribute general ledger costs into activity groups. In the 2014 DAM BT stated that DTNFA "uses an analysis of transfer charges" to apportion costs. Cartesian referred to this method as the Property Cost Apportionment method.[348] PROPPROV uses "current office space usage" to apportion costs.

11.32 The Property Cost Apportionment methodology[349] is used to apportion property related costs in Group Property and Facilities Management (AG106), Property Asset Driver (AG412) and Property Provision Driver (AG414) to other AGs and PGs.[350]

Cartesian's assessment

11.33 When assessing the Property Cost Attribution methodology Cartesian found that a "direct allocation is used to attribute ledger level costs to Property Asset Driver (AG412) and Property Provision Driver (AG414)".[351] This is different to what is described in the DAM in relation to this apportionment methodology.

Our assessment

11.34 We do not consider that the DTNFA and PROPPROV methodologies were explained in the 2014 DAM with sufficient clarity. We expect BT to address our concerns in the Accounting Methodology Documents due to be published in July 2015. In the event that BT has not adequately addressed our concerns we will consider whether more prescriptive action may be appropriate.

[348] Cartesian, Cost Attribution Review, section 6.3.7
[349] BT's 2014, DAM, page 123
[350] Cartesian, Cost Attribution Review, section 6.3.7.1
[351] Cartesian, Cost Attribution Review, section 6.3.7.4

TSO Billing System Costs methodology

Background

11.35 BT's TSO division incurs costs in supporting other BT units. TSO manages technology innovation, the global IT platforms, the group customer experience and Service, Strategy and Operations.

11.36 The records in the TSO billing system are used to attribute costs that TSO incurs in supporting other BT units. It uses project codes, cost categories and OUCs to determine the weights and destination of cost attribution from F8/OUC (Level 0) to activity groups and plant groups.

11.37 TSO EXCEPT base methodologies are used to attribute these costs.[352]

Cartesian's assessment

11.38 Cartesian noted that BT uses two methods for direct cost attribution, raising concerns over consistency.[353]

11.39 Cartesian said that it was "not clear [in the DAM 2014 description] why BT attributes some costs directly to activity groups using an EXCEPT base methodology as opposed to directly allocating costs from F8/OUC to Level 1." [354]

Our assessment

11.40 We agree with Cartesian's assessment that the two methodologies do not appear consistent. During further analysis we found that some TSO costs are directly allocated to activity groups TSO Operational Costs (AG102) and TSO Support Functions (AG103) do not use the EXCEPT base methodology. This further supports Cartesians uncertainty as to why direct allocations are using a base method when other TSO costs are directly allocated.

11.41 We also note that BT does not explain why and how EXCEPT base methods are different from 'Other Base Methodologies' in the supporting documents.[355]

11.42 We do not consider that the TSO EXCEPT methodology was clearly explained in the 2014 DAM. We expect BT to address our concerns in the Accounting Methodology Documents due to be published in July 2015. In the event that BT has not adequately addressed our concerns we will consider whether more prescriptive action may be appropriate.

Data Centre Budget Data methodology

Background

11.43 BT's Data Centres are electronic storage units for each business unit's data. The Data Centre Budget methodology (OPGENACC) [356] is used to attribute transfer

[352] BT's 2014, DAM,, Page 36
[353] Cartesian, Cost Attribution Review, section 6.2.12.4
[354] Cartesian, Cost Attribution Review, section 6.2.12.4
[355] BT 2014 DAM, Sections 4.1 and 4.2
[356] BT's 2014 DAM, Page 73

charges associated with BT retained offices and facilities management costs to AGs and PGs at Level 1.[357]

Cartesian's assessment

11.44 Cartesian found that the Data Centre Budget methodology "is not transparent due to insufficient detail in the documentation."[358]

11.45 Cartesian explained that "it appears that the business units go through a budgeting and negotiation exercise to determine how much of TSO data centre budget should be attributed to each division. The calculation models used and the assumptions made to determine the division level attributions were not available to Cartesian for review and are not discussed in sufficient detail in the DAM" [359]

Our assessment

11.46 We do not consider that the Data Centre Budget methodology was clearly explained in the 2014 DAM. We expect BT to address our concerns in the Accounting Methodology Documents due to be published in July 2015. In the event that BT has not adequately addressed our concerns we will consider whether more prescriptive action may be appropriate.

Duct Valuation and Cable Depreciation methodology

Background

11.47 Once BT has grouped costs as access duct costs (AG135), the costs need to be split between the cables which use the duct (copper and fibre).

11.48 A combination of duct valuation and cable depreciation is used by BT to apportion access duct costs from access duct (AG135) to the various plant groups representing the different cable types in those ducts.[360]

11.49 The first step apportions access duct costs based on the fibre:copper access ratio instead of access:core ratio. In the second step, the respective fibre and copper costs are apportioned based on the relative depreciation of the different cables by access segment.

Cartesian's assessment

11.50 Cartesian found that "the depreciation charges used to allocate costs between GEA and non-GEA fibre are both retrieved from the [List of Plant] according to the Duct model provided by BT.[361] The depreciation is not recorded separately but rather split based on the NGA percentage (input from another model). This is different from what described in the DAM." [362]

[357] Cartesian, Cost Attribution Review, section 6.2.11.1
[358] Cartesian, Cost Attribution Review, section 6.2.11.4
[359] Cartesian, Cost Attribution Review, section 6.2.11.4
[360] Cartesian, Cost Attribution Review, section 6.3.2.1
[361] BT, Model 018_OR-Duct, 29/09/2014
[362] Cartesian, Cost Attribution Review, section 6.3.2.4

11.51 BT described in the DAM that the split is based on derived depreciation from the project ledger spend and list of plant for spine and distribution fibre.

Our assessment

11.52 We have considered Cartesian findings and during our assessment we found the GEA and Non GEA split was calculated using the GRC.[363]

11.53 We do not consider that the Duct Valuation and Cable Depreciation methodology was clearly explained in the 2014 DAM. We expect BT to address our concerns in the Accounting Methodology Documents due to be published in July 2015. In the event that BT has not adequately addressed our concerns we will consider whether more prescriptive action may be appropriate.

SFI and TRC 'equivalent cost' methodology

Background

11.54 Special Fault Investigation (SFI) and Openreach Time Related Charges (TRC) are for additional engineering time requested by other operators for fixed line services not included in Openreach's regulated charges.[364]

11.55 The SFI and TRC 'equivalent cost' methodology (PDTMTLUR) is explained in the Detailed Attribution Methodologies. [365]

Cartesian's assessment

11.56 Cartesian found that the SFI and TRC 'equivalent cost' **(**PDTMTLUR**)** methodology description in the DAM is incorrect.

11.57 The DAM states that "this base apportions current account costs for Main Distribution Frames to" but should be Maintenance of end-user customer's internal wiring and network termination equipment (NTE)."

11.58 Although the description in the documentation was incorrect, Cartesian considered that the apportionment used in the system itself is correct according to further information received from BT.

Our analysis and view

11.59 We have considered the further information from BT and agree with Cartesian that the cost apportionment itself was correct. We also consider that the PDTMTLUR methodology was incorrectly explained in the 2014 DAM. We expect BT to address our concerns in the Accounting Methodology Documents due to be published in July 2015. In the event that BT has not adequately addressed our concerns we will consider whether more prescriptive action may be appropriate.

[363] We address Cartesian's accuracy concern in Section 10 of this consultation concerning 'Review of supporting evidence'.
[364] Fixed access market reviews: wholesale local access, wholesale fixed analogue exchange lines, ISDN2 and ISDN30. Statement on market definition, market power determinations and remedies. 26 June 2014. http://stakeholders.ofcom.org.uk/telecoms/ga-scheme/specific-conditions-entitlement/market-power/fixed-access-market-reviews-2014/statement/summary/
[365] BT's 2014 DAM, page 97

Profit Weighted Net Replacement Costs (attribution of Cumulo rates costs)

Background

11.60 As set out in Section 9, Cumulo rates are attributed using the profit weighted net replacement costs (PWNRC) methodology.

Cartesian's assessment

11.61 As part of the attribution BT identifies rates payable on NGA assets and attributes these to NGA network components. Cartesian found that the approach used to identify NGA assets is not transparent and that "the methodology description can be further improved to expand the explanation on how BT identifies the NGA assets from the overall set".[366]

Our assessment

11.62 We do not consider that the attribution of Cumulo rates costs was clearly explained in the 2014 DAM. In particular, it was not clear how BT had identified NGA assets, nor to which NGA components these rating liabilities had been attributed.

11.63 We have already noted in Section 9 that we have directed BT to change the way it attributes its Cumulo non domestic rate costs. The 2015 Regulatory Reporting Directions Statement directed BT to "attribute the NGA related Cumulo costs to the NGA network components."[367] We also decided that for the purposes of preparing the Regulatory Financial Statements for the Fixed Access markets all non NGA related costs should be allocated on the same profit weighted net replacement cost basis.[368] We propose to require BT to make the same adjustment in the BC markets.

11.64 BT will therefore have to update its Accounting Methodology Documents to address the requirement in the direction and, in addition, to address the issue regarding the NGA identification we set out in 1.13. We expect BT to address our concerns in the Accounting Methodology Documents due to be published in July 2015. In the event that BT has not adequately addressed our concerns we will consider whether more prescriptive action may be appropriate.

Fixed Access Market Usage Factors

Background

11.65 Components costs are attributed to services using route and usage factors. The way BT calculates each usage factor varies and depends on the type of service.[369]

11.66 Some components have a 1-to-1 mapping to a service, so 100% of that component costs are directly allocated to one service.

[366] Cartesian, Cost Attribution Review, section 6.2.3.4
[367] 2015 Regulatory Reporting Directions Statement, page 105, Annex 2
[368] 2015 Regulatory Reporting Directions Statement, paragraphs 4.63 to 4.67
[369] Cartesian, Cost Attribution Review, Section 5.11.2

Cartesian's assessment

11.67 As part of the review BT provided additional explanations for components and usage factors.

11.68 Cartesian found that for the D-side Copper Current Component (CL174) "there are issues with transparency. Some usage factors are the product of more than one input, and there is little information on the source of the data".[370]

Our assessment

11.69 We do not consider that the calculation of each usage factor is clearly explained in the 2014 DAM. In particular, only details of how the apportionment of relevant components to Wholesale Broadband access services is included.

11.70 We expect BT to address our concerns in the Accounting Methodology Documents due to be published in July 2015. In the event that BT has not adequately addressed our concerns we will consider whether more prescriptive action may be appropriate.

Question 11.1: Do you have any comments on our provisional assessment of BT's supporting documentation, as described in Section 11?

[370] Cartesian, Cost Attribution Review, section 6.4.1.1

Section 12

Future developments

Introduction

12.1 In this section we stand back from the review of the detailed attribution methodologies and instead consider the structure of cost attribution system and whether there may be scope for changes that might bring benefits for all stakeholders.

12.2 At this stage we are not making any formal proposals in this section or committing to conduct further analysis. However, we are currently considering whether there may be benefits in BT simplifying the way the cost attribution system works and changing how BT presents some of its costs. To inform our assessment of if and how we take this analysis forward we therefore seek stakeholders' views on the scope for such improvements.

Background

12.3 As noted in Section 4 of this document, BT is responsible for its Regulatory Financial Statements and its cost accounting and accounting separation system.

12.4 In our September 2012 consultation on BT's regulatory financial reporting, we explained that the design and specification of BT's regulatory financial reporting systems is ultimately a matter for BT to decide. In its response, BT stated that its cost accounting systems were its own "responsibility provided they are appropriate to meet its Regulatory Financial Reporting and other SMP obligations."[371]

Development of BT's cost accounting system to date

12.5 BT's regulatory accounting system has evolved and grown organically over several years.

12.6 In the early 1990s BT produced accounts for various retail businesses on a fully allocated basis in what were called its Financial Results by Services. In the mid-1990s accounting separation was introduced which split BT's businesses between wholesale and retail activities; public reporting of costs on a CCA basis was also introduced.

12.7 Since then, there have been further changes to reporting requirements. For example results are now published for various wholesale broadband and business connectivity market whereas reporting of costs and revenues in various retail markets is no longer required. Technical progress has meant the system has also had to cover new network platforms and services and consequently BT has had to develop new and revised attribution methodologies.

[371] Ofcom's Regulatory financial reporting: a review Submission by BT 2 November 2012 http://stakeholders.ofcom.org.uk/binaries/consultations/reg-financial-report/responses/BT.pdf

12.8 For the past 15-20 years BT has used a single system, ASPIRE, to produce its Regulatory Financial Statements. Changes to ASPIRE have been made though an incremental approach rather than by making fundamental changes to the structure of the attribution system. This year BT is introducing a new system, REFINE, to produce its Regulatory Financial Statements. The new system has been tested by replicating the results that had been produced under ASPIRE[372] to give confidence to ourselves and other stakeholders.

12.9 Recent activity has concentrated on checking and refining the system as it currently operates. However, we understand that REFINE is a more flexible tool which means that in the future changes should be easier to implement. It therefore seems an appropriate point to stand back and take a more holistic view about BT's regulatory accounting and reporting systems

Scope for future development of BT's cost accounting system

12.10 The size of BT's DAM (and Cartesian's report) reflects the detail to which BT's costs are analysed within the system.

12.11 This level of detail may have some benefits but the detailed nature of the attribution methodologies coupled with the current structure of the cost attribution system makes the system complex and this has some downsides. For example, it makes the system difficult for us (and other stakeholders) to understand and for BT to maintain and develop. The complexity also increases the likelihood of errors.

12.12 In the remainder of this section we present various high level observations on the way BT's attribution system currently operates and consider whether there may be scope to make the system more simple and transparent.

Structure of cost attribution system

12.13 As explained in Section 3 of this report BT uses different levels of cost processing within its cost attribution system whereby at each level a particular category of costs will be fully attributed to other cost categories. This creates a cascade model of costs being fully attributed to cost categories at each stage of the system. Ultimately this leads to all costs, revenues, assets and liabilities being fully attributed to Services and Markets.

12.14 BT calls this process of 'emptying' costs into different cost categories through a cascade the 'exhaustion' process. Figure 3.1 in Section 3 provides a simplified representation of BT's cost attribution system. Cartesian provides some further details in Section 2 of its report.

12.15 There are five stages within the process[373]:

- Stage 1 - Cost Grouping: costs from the general ledger are grouped together into a number of homogeneous F8/OUC combinations.
- Stage 2 - Base Attributions: these F8/OUC cost combinations are attributed to Plant Groups (PGs), Activity Groups (AGs) and the Retail Residual business.

[372] See Section 3.
[373] BT's overview description of its system is given in pages 9-12 of its 2014 DAM. This describes 10 different levels. We have used Cartesian's description here as it is simpler.

- Stage 3 - AG to PG Attributions: Activity Groups' costs are "exhausted" (attributed) to Plant Groups and the Retail Residual business.
- Stage 4 – Plant Group to Component Attributions: Plant Groups' costs are attributed to network components (and costs are also grouped into super-components)
- Stage 5 – Network Component Attribution to Services: component costs are attributed to standard network services.

Stages 1 and 2

12.16 Stage 1 covers data capture and cost grouping and would be required in any system.

12.17 Stage 2 covers initial attributions the most important of which have been reviewed by Cartesian: those that haven't are in the main direct allocations to particular plant or Activity Groups.

Stage 3

12.18 There are at least five different levels within Stage 3 in which Activity Groups' costs are exhausted to Plant Groups. In general costs within these Activity Groups are common to many Plant Groups and so many of these attribution bases depend on the way costs have been previously attributed.

12.19 Table 12.1 shows the level at which Activity Groups were exhausted within BT's cost accounting system in 2013/14[374]:

Table 12.1: Attribution of Activity Groups within BT's Regulatory Financial Statements

Level	Activity Group	Activity Group Description
Level 201	AG101	Motor Transport
	AG102	TSO Operational Costs
	AG103	TSO Support Functions
	AG106	Group Property and Facilities Management
	AG401	OR Pay driver
	AG402	TSO Pay driver
	AG403	OR Stores driver
	AG404	TSO Stores driver
	AG405	Retail Stores driver
	AG406	WS Pay driver
	AG407	OR Ops Pay driver
	AG408	OR Fixed Asset driver
	AG409	WS Pay plus % FA driver
	AG410	OR Pay plus % FA driver
	AG412	Property Asset Driver
	AG414	Property Provision Driver

[374] This is from information received from BT to support the CAR project. We note that some of attributions within these levels appear different to those described on page 12 of BT's 2014 DAM.

	AG415	Fleet Fuel Driver
Level 301	**AG112**	Corporate Costs
Level 401	**AG113**	Liquid Funds and Interest
Level 501	**AG114**	Non-Core Suspense
Level 701	**AG135**	Duct used by Access Cables
	AG148	Duct used by Backhaul Cables
	AG149	Duct used by Core Cables
	AG161	Specialised Accommodation Equipment - Maintenance
	AG162	Specialised Accommodation Equipment - Non Maintenance
	AG163	Back-up Power Equipment – Maintenance
	AG164	Back-up Power Equipment - Non Maintenance

Source: BT

12.20 Most Activity Groups are therefore exhausted at level 201. The attribution of Corporate Overhead costs is at level 301 and therefore occurs after most other costs. That leaves the costs that are exhausted at Levels 401, 501 and 701.

12.21 At level 401, liquid Funds and Interest (AG113), is allocated using total cash costs, one of the potential drivers for some elements of Corporate Costs, currently AG112.

12.22 At level 501, non-core suspense (AG114) is allocated all to the Retail Residual Business[375].

12.23 The Activity Groups attributed at Level 701 are different. Cartesian notes that "*the duct related costs cost categories are unusual Activity Groups*" and that "*the reason for having duct costs in AGs is due to the cascade model of BT's apportionment system and the constraint that PGs cannot exhaust into other PGs*"[376].

12.24 Activity Groups AG161, AG162, AG163 and AG164 capture costs associated with BT's Network Operational Buildings.[377]

Stages Four and Five

12.25 Stages 4 and 5 involve the attribution of Plant Group costs through to services via network components. Costs for many Plant Groups are attributed to just one network component[378] and similarly there are many network components that map one to one onto services.

Observations on structure of cost attribution system

Stages 1 and 2

12.26 We do not have any observations on stages 1 and 2 at this stage.

[375] BT's 2014 DAM, page 125-126
[376] Cartesian, Cost Attribution Review, section 6.3.2.4
[377] BT's 2014 DAM, page 127 and 128
[378] Cartesian, Cost Attribution Review, "*Approximately one third of Plant Groups have a direct allocation to Network Components*",

Stage 3

12.27 We consider that it may be possible reduce some of the complexity in the system and make it easier to maintain by having fewer exhaustion levels can be reduced. For example, based on our current understanding of stage 3, it is not clear to us why:

- Non-core suspense costs need to be separate level and/or why it could not be attributed as part of level 201. Any costs attributed to this Activity Group (AG114) from the costs covered by what is currently in AG112, Corporate Costs, could instead be allocated to Retail Residual.

- Liquid Funds and Interest are not allocated at the same level as Corporate Costs (i.e. level 301).

- Costs associated with BT's Network Operational Buildings are attributed once Corporate Overhead costs have been exhausted. Other property costs, such as Group Property and Facilities Management Costs, BT Property Fixed Assets and Property Provision are exhausted at level 201.

Stage 4

12.28 As some Plant Groups are attributed to just one network component while many network components map onto one service, there may be scope to simplify the system by attributing Plant Group costs straight to services with the possible benefit of reducing the complexity of the system and improving transparency.

12.29 BT's 2014 DAM includes the following comments on Plant Group or network component:

- *"PGs are attributed to Network Components on a one to one or one to many basis. A PG could contribute costs to many Network Components, and a Network Component could receive costs from many PGs"*[379].

- *"Network Components collect costs from the PGs and constitute discrete parts of the network"*[380]

- *"Network components represent the collection of various different cost types. One of the distinguishing features of a component is that it would usually have a single cost driver"*[381]

12.30 Cartesian describe Plant Groups and components thus:

- *Plant Groups (PG): Includes costs and asset values of activities, equipment and infrastructure for the purposes of running and selling network services (e.g. Provision and maintenance activities, MSAN equipment, Copper infrastructure)*

- *Network Components: Includes costs and asset values representing discrete parts of BT's Network (e.g. MDF Equipment, Access Fibre Spine and ISDN30*

[379] BT's 2014 DAM, page 11
[380] BT's 2014 DAM, page11
[381] BT's 2014 DAM, page 206

Connections). Costs within these network components are attributed to various Services.[382]

12.31 BT and Cartesian suggest that a component is a "discrete part of BT's network". However in many cases Plant Groups represent discrete parts of BT's network better than many components. One of Cartesian's examples of a network component, Access Fibre Spine, is in fact a Plant Group. Indeed there are several other fibre Plant Groups that are not network components – for example access distribution fibre, backhaul fibre, GEA access fibre and GEA distribution fibre. These would appear to be closer to being "discrete parts of BT's network" than say "PC rental 34 mbit/s link local end", a component used to provide TI services.

12.32 The last point illustrates the fact that many components have explicit links to a service, which again questions whether components are generally "discrete parts of BT's network". For example many components used to provide AI and TI Leased lines refer to a specific service or groups of services within their description.[383]

12.33 Cartesian's definition of a Plant Group above suggests Plant Groups "*relate to activities … for the purposes of running and selling network services.*"[384] However there are several network components that have similar coverage: for example - sales and product management, routeing and records, SG&A wholesale.

12.34 It appears then that there is considerable overlap between Plant Groups and network components. That is also borne out by further analysis we have undertaken:

- [✂ 50% to 60%] of all Plant Groups are attributed to a single component. These Plant Groups account for [✂ 70% to 80%] of total costs in 2013/14.
- [✂ 50% to 60%] of components receive attributions from just one Plant Group. These components account for [✂ 50% to 60%] of total costs.
- Of those components that receive attributions from more than one Plant Group there is several that are then attributed to just one service. These services account for a further [✂ 0% to 5%] of costs.
- [✂ 30% to 40%] of components are attributed to one service. These account for just [✂ 20% to 30%] of total costs.
- [✂ 10% to 20%] of services receive attributions from one component. These account for [✂ 0% to 5%] of total costs.

12.35 In practice there appears to be little distinction between the way Plant Groups and Network components are used. Both are aggregations of costs that form the basic building blocks used to construct service costs. There is nothing unique about a network component that means it has to be used to define service costs.

12.36 It may instead be possible to attribute Plant Group costs directly to services. Many Plant Groups' costs could be attributed directly to services because at present their costs map directly to a single component plus there are several components that

[382] Cartesian, Cost Attribution Review, section 2.2
[383] See for example Annex 10 of the 2015 Regulatory Directions Statement that gives the list of super-components that will be used in BT's 2015 Regulatory Financial Statements.
[384] Cartesian, Cost Attribution Review, section 2.2

map to a single service. That does not however mean that such a rationalisation is easy or could be undertaken with little development. There are some Plant Groups that are currently attributed to many components and those in turn are attributed to several services.

Scope for changes to regulatory financial reporting

12.37 In May 2014, the Regulatory Financial Reporting Decision set out our decisions on changes to BT's regulatory reporting requirements. As noted in Section 2, we explained that BT's Regulatory Financial Reporting should provide us with the information that we need to make informed regulatory decisions, monitor BT's compliance with regulatory obligations, ensure that obligations address underlying competition issues and investigate potential breaches of obligations. It should also provide reasonable confidence to stakeholders that BT has complied with its SMP conditions while adding credibility to the regulatory financial reporting regime.

12.38 We made changes to BT's Regulatory Financial Reporting requirements in the Regulatory Financial Reporting Decision that are intended to give us a greater role in the way that BT prepares its Regulatory Financial Statements; improve the presentation of the published Regulatory Financial Statements and supporting documentation; and ensure that we and other stakeholders have the information that they need.

12.39 However, our work on BT's cost attribution basis has identified another potential question about stakeholders' access to the information they need; whether they are able to understand the make-up of the costs for the services that they purchase.

12.40 Reporting of costs for services is currently done on a network component (or super component) basis. We consider above whether the attribution of Plant Group costs to services needs to be done via network components and whether aggregation to super-components is necessary but also consider that there is a related issue relating to whether the current list of network components provide an appropriate basis to help stakeholders understand service costs.

12.41 We also make the following observations about the way components are used within BT's Regulatory Financial Statements:

- Currently BT reports results within its Regulatory Financial Statements for super-components not components. Super-components are formed by combining costs for several components. Components within a super-component may not all have the same cost driver. For example until 2013/14 components within the Wholesale and LAN Extension Services super-component had different cost drivers, though that anomaly should be removed in 2014/15[385]. There may be grounds to remove this level of aggregation. It appears to add complexity for no benefit and it reduces transparency.

- Components have been defined in different ways in different markets. For example there are 15 network super-components that cover network activities[386]

[385] Annex 10 of the 2015 Regulatory Directions Statement shows how what was within the previous Wholesale & LAN Extension Services super-component will be reported in 20141/5.
[386] This includes all network components that contain "PC" within its title. It excludes E-side and D-side copper components as well as SG& A partial private circuits. See for example BT's 2014 DAM pages 61, 65 and 69.

within the three main TI markets[387] with most being specific to a particular TI market. In contrast within the three AI and MI markets[388] there are six[389] analogous super-components, all of which are common across these markets.

12.42 The current component list has evolved since the mid-1990s, when the published list of network components covered those required to construct what we now refer to as narrowband call services. Since then this list has grown to cover many more markets. This raises the question of whether the current reporting of component costs remains relevant.

12.43 Component costs are the result of combining Activity Group costs with Plant Group costs. As duct costs are an Activity Group costs this means that the contribution that duct costs makes to a service's costs are never separately identified. There are, however, separate Activity Groups for access duct, backhaul duct and core duct and we consider that these may be more appropriate network components.

12.44 As duct costs are always combined with costs for copper and fibre assets, the contribution that copper and fibre costs make to a service's costs is never identified. There are however separate Plant Groups for access distribution and access spine fibre.

12.45 Some components, for example, 21CN Backhaul Link and Length, include cost for both passive assets – for example duct and fibre - but also active assets such as electronic equipment. We consider that it might be more transparent if these elements were identified separately.

12.46 A further example of where transparency might be improved is in the tables in Section 6.1 and 6.2 of BT's Regulatory Financial Statements[390]. These include breakdowns of depreciation and mean capital employed by asset type. Table 6.2 includes a breakdown of mean capital employed by access duct, fibre and copper but there is no such breakdown for depreciation. Further it is not clear how access is defined nor what is included within Switch, Transmission and Other assets. The latter must presumably include core and backhaul duct and core fibre. Further the reporting of operating costs is inconsistent with other reporting: for example it is not clear what activities are included within Network Support, General Support, General Management and Other Costs.

Next steps

12.47 In the September 2012 consultation, we noted, amongst other things, that, we have the powers to require BT to make changes to its reporting systems, [391]but, in the context of the transition to BT's new cost attribution system, we considered that a more collaborative approach to making such improvements would be the most effective.

[387] TISBO (up to and including 8Mbits), TISBO (above 8 mbit/s up to and including 45 Mbit/s), TISBO (above 45 Mbit/s up to and including 155 Mbit/s).
[388] AISBO Non-WECLA, AISBO WECLA and MISBO WECLA
[389] Backhaul Extension Services Fibre, 21 CN Backhaul Link and Length, Wholesale & LAN Extension Services Fibre etc, Ethernet Main Links, Ethernet Electronics and Access Cards. See BT's 2014 Regulatory Financial Statements pages 78, 84 and 89.
[390] See for example page 27 and 30 of BT's 2014 Regulatory Financial Statements.
[391] Regulatory financial reporting: a review. Consultation, September 2012. http://stakeholders.ofcom.org.uk/binaries/consultations/reg-financial-report/summary/condoc.pdf

12.48 We consider that a similar approach may be most effective if we were to decide that changes to the way that BT's cost attribution system works would be helpful to stakeholders.

Question 12.1: Do you consider it would be helpful to stakeholders if BT reduced the number of attribution levels in BT's cost attribution system? Please provide your reasons for or against such a change.

Question 12.2: Do you think the current list of components or Plant Groups is appropriate? For example, do you agree that BT should report results for components, rather than super-components?

Question 12.3: Does reporting of costs by network component provide a sufficiently transparent way of breaking down costs for services? For example, do you think that costs for different network elements of duct, fibre and copper should be reported separately?

Section 13

Implementation of proposed changes

Introduction

13.1 The purpose of this section is to explain how our proposals and decisions that we will make in this review will be reflected in BT's Regulatory Financial Reporting, including its Regulatory Financial Statements and Accounting Methodology Documents.

13.2 We also explain how any changes that will follow from this review will be reflected in the 2015 LLCC Consultation which we are publishing at the same time as this consultation, and ultimately in any decisions which we make in the 2016 BCMR and LLCC Statement.

Impact of our review on BT's Regulatory Financial Reporting

Changes to BT's 2015/16 Regulatory Financial Statements, Regulatory Accounting Guidelines and Principle of Consistency with Regulatory Decisions

13.3 In the Regulatory Financial Reporting Decision we said that we would establish Regulatory Accounting Guidelines to provide high level guidelines and accounting rules together with the detail necessary to enable BT to comply with the Principle of Consistency with Regulatory Decisions. We also explained that ahead of publishing the Regulatory Accounting Guidelines, a review of BT's cost attribution system was needed to inform us in determining which areas the Regulatory Accounting Guidelines need to address, and to what level of detail they need to address those areas.[392]

13.4 We have now undertaken a review of BT's cost attribution methodologies. As we explain above, we provisionally determined that a number of the cost attribution methodologies which BT currently uses are inappropriate. Where we provisionally determined that a cost attribution methodology was clearly inappropriate, we considered which cost attribution rule should be implemented instead. In this consultation, we have therefore proposed alternative cost attribution methodologies were possible, although for certain attributions we need to consider this further.

13.5 Our views on BT's cost attribution rules and our proposals for alternative cost attribution methodologies are subject to consultation. As explained in Section 2 above, we may issue in autumn 2015 a further consultation in relation to cost attribution rules in respect of which we have not finished our assessment.

13.6 We expect to make decisions about the issues raised in this consultation and in any consultation which we may publish in autumn 2015 at the same time as we make decisions in the 2016 BCMR and LLCC Statement. We believe that it is important to consider issues concerning BT's cost attribution methodologies as part of our market review process because the reporting requirements must follow and reflect our regulatory decisions.

[392] Regulatory Financial Reporting Decision, paragraph 3.109

13.7 We will issue a direction specifying any changes which BT will be required to make to its cost attribution rules to ensure that the Regulatory Financial Statements reflect the decisions we make in this review and the 2016 BCMR and LLCC Statement.

13.8 We expect that such consistency requirements will initially be set out in a direction specifying requirements in relation to the Principle of Consistency with Regulatory Decisions and the RAV. This direction will be given under the regulatory accounting SMP conditions which we proposed to impose in the 2015 BCMR Consultation.[393] We expect such requirements to apply for the Regulatory Financial Statements to be published in July 2016.

13.9 We expect that such requirements will subsequently be reflected in the Regulatory Accounting Guidelines.

13.10 We note that the SMP conditions which we set out in our Regulatory Financial Reporting Decision already apply in the Fixed Access and WBA markets following conclusion of our reviews of these markets in 2014. In the 2015 BCMR Consultation we have proposed to impose those same SMP conditions. However, in line with what we said in the Regulatory Financial Reporting Decision, we consider that changes which we decided should apply to BT's regulatory accounting obligations, should be implemented across all regulated markets to preserve the integrity and consistency of BT's Regulatory Financial Reporting. We said in the Regulatory Financial Reporting Decision and continue to believe that there are significant advantages to BT and other stakeholders of applying one set of accounting rules across all regulated markets.

13.11 We expect that as a result of our review, and the requirements concerning compliance with the Regulatory Accounting Guidelines and the Regulatory Accounting Principles (including the requirement for consistency), there will be less need to make further adjustments to the Regulatory Financial Statements in our future market reviews and investigations. This is because we expect that over time the Regulatory Financial Statements will become more closely aligned to our regulatory decisions.

Changes to BT's 2014/15 Regulatory Financial Statements

13.12 As highlighted above, we expect that our decisions in relation to the cost attribution issues we are consulting on will be reflected in BT's 2015/16 Regulatory Financial Statements (through a direction). However, some of the concerns raised in this document will (or should) already be addressed in the 2014/15 Regulatory Financial Statements.

13.13 In Section 7, we identify errors in BT's 2013/14 Regulatory Financial Statements. BT has confirmed that the errors will be corrected in the 2014/15 Regulatory Financial Statements.

[393] "Business Connectivity Market Review – Review of competition in the provision of leased lines Consultation" published on 15 May 2015, Annex 6
http://stakeholders.ofcom.org.uk/consultations/bcmr-2015/

13.14 In Section 11, we note that some of BT's 2013/14 documentation which should how the cost attribution system works (including, for example, the Detailed Attribution Methodology) are unclear and not sufficiently transparent. We also consider that some of the explanatory documentation appears inaccurate or inconsistent.

13.15 In the Regulatory Financial Reporting Decision, we addressed BT's requirements around the transparency of its accounting documents. We explained that we would work with BT to ensure they are transparent and user friendly. We said in the Regulatory Financial Reporting Decision that we would assess how well the 2015 Accounting Methodology Documents meet the needs of stakeholders (including Ofcom's needs) and our expectations. We have highlighted specific concerns in this consultation, and expect BT to take the necessary steps to address these in the 2014/15 Regulatory Financial Statements. In the event that BT has not adequately addressed our concerns we will consider whether more prescriptive action may be appropriate.

13.16 In Section 9, we review some costs which we also considered as part of our 2014 Fixed Access and WBA market reviews (the attribution of the costs of 21CN services in the WBA markets[394] and the attribution of Cumulo costs in the Fixed Access markets.[395]). The 2015 Regulatory Financial Reporting Directions specified how BT should attribute those costs for the purposes of the Regulatory Financial Statements. These requirements will also need to be reflected in the 2014/15 Regulatory Financial Statements.

13.17 Finally, we have also identified issues and concerns relating to the supporting evidence on which BT's cost attribution methodologies rely, including some issues around the models which BT uses for some of its calculations. In some of those cases we have suggested an alternative source of data which could offer a better, more objective source of evidence. Additionally, where we consider there may be scope for BT to update its supporting calculations, we expect BT to take the necessary steps to address these concerns. In the event that BT has not adequately addressed our concerns, we will consider whether more prescriptive action may be appropriate. There are also some cases where we have not been able to identify a better alternative. We will therefore engage with BT to gain a better understanding of the available sources of information..

Impact of our review on our regulatory proposals and decisions in the LLCC

LLCC cost modelling

13.18 As we noted above, we believe that it is important to consider issues concerning BT's cost attribution methodologies as part of our market review process because the reporting requirements must follow and reflect our regulatory decisions.

[394] We imposed a requirement that BT must not attribute these costs in accordance with the future benefits principle.
[395] We imposed a requirement that BT must attribute all non NGA related Cumulo costs in the same way with the relevant profit weight being the relevant weighted average cost of capital for each market. We have proposed to adopt the same formula in the 2015 LLCC Consultation to modelling base year costs.

13.19 The proposals set out in this document are therefore made alongside our proposals for charge controls in the 2015 LLCC Consultation. Our review has an immediate impact on the cost modelling for the leased lines charge control.

13.20 In particular, we have made adjustments to the base year costs to reflect the following errors which we identified in this review:

- core and fibre backhaul attribution;
- access fibre attribution;
- backhaul and core access duct allocation; and
- BT Wholesale overheads.

13.21 We have not adjusted the base year costs to take account of the thirteen further errors which we identified as part of this review. As we explain in Section 7, we expect that all of the errors which we have identified will be corrected by BT in the 2014/15 Regulatory Financial Statements. They will therefore be taken into account in the 2014/15 base data for the 2016 BCMR and LLCC Statement.

13.22 In addition to the errors, we have proposed in the 2015 LLCC Consultation to adjust the base year costs to reflect the proposed attribution methodology for BT's General Overheads on the Previously Allocated Cost basis.

13.23 Our proposals to modelling base year costs are subject to consultation. We expect that any decisions which we make as part of this review will be reflected in the 2016 BCMR and LLCC Statement if such decisions have an impact on the wholesale leased lines markets.

Consistency with the 2016 BCMR and LLCC Statement

13.24 In the 2015 BCMR Consultation we set out our reasoning and proposal to impose cost accounting and accounting separation requirements on BT in each of the wholesale leased lines markets in which we propose BT has SMP. In doing so, we proposed to impose the regulatory accounting SMP conditions which implement the changes to BT's regulatory financial reporting requirements introduced in the Regulatory Financial Reporting Decision. We concluded in May 2014 that these changes should be applied to BT across all regulated markets.

13.25 The proposed SMP conditions for the wholesale leased lines markets include among others the requirement on BT to ensure that the Regulatory Financial Statements are in accordance with the Regulatory Accounting Guidelines and the Regulatory Accounting Principles, including the Principle of Consistency with Regulatory Decisions.

13.26 In light of the proposed adjustments to the base year costs, we have also included a proposed consistency direction at Annex 15 of the 2015 LLCC Consultation. This direction reflects among others the proposed requirements specifying how BT should correct the four errors which we have found as part of this review and the requirement reflecting our proposals concerning the cost attribution methodology for BT's General Overheads on the Previously Allocated Cost basis.

13.27 If we decide to adopt the proposed requirements[396] and any other requirements which reflect the adjustments which we ultimately decide to make in the 2016 BCMR and LLCC Statement, such requirements will become part of the Regulatory Accounting Guidelines.

[396] With the exception of the requirements in relation to the correction of the errors which will only be captured in the consistency direction in the event that these errors have not been corrected in 2014/15 Regulatory Financial Statements.

Annex 1

Responding to this consultation

How to respond

A1.1 Ofcom invites written views and comments on the issues raised in this document, to be made **by 5pm on 7 August 2015**.

A1.2 Ofcom strongly prefers to receive responses using the online web form at https://stakeholders.ofcom.org.uk/consultations/cost-attribution-review/howtorespond/form, as this helps us to process the responses quickly and efficiently. We would also be grateful if you could assist us by completing a response cover sheet (see Annex 3), to indicate whether or not there are confidentiality issues. This response coversheet is incorporated into the online web form questionnaire.

A1.3 For larger consultation responses - particularly those with supporting charts, tables or other data - please email hannah.timberlake@ofcom.org.uk attaching your response in Microsoft Word format, together with a consultation response coversheet.

A1.4 Responses may alternatively be posted or faxed to the address below, marked with the title of the consultation.

Hannah Timberlake
Riverside House
2A Southwark Bridge Road
London SE1 9HA

Fax: 020 7981 4103

A1.5 Note that we do not need a hard copy in addition to an electronic version. Ofcom will acknowledge receipt of responses if they are submitted using the online web form but not otherwise.

A1.6 It would be helpful if your response could include direct answers to the questions asked in this document, which are listed together at Annex 4. It would also help if you can explain why you hold your views and how Ofcom's proposals would impact on you.

Further information

A1.7 If you want to discuss the issues and questions raised in this consultation, or need advice on the appropriate form of response, please contact Hannah Timberlake on 020 7783 4697.

Confidentiality

A1.8 We believe it is important for everyone interested in an issue to see the views expressed by consultation respondents. We will therefore usually publish all responses on our website, www.ofcom.org.uk, ideally on receipt. If you think your response should be kept confidential, can you please specify what part or whether

all of your response should be kept confidential, and specify why. Please also place such parts in a separate annex.

A1.9 If someone asks us to keep part or all of a response confidential, we will treat this request seriously and will try to respect this. But sometimes we will need to publish all responses, including those that are marked as confidential, in order to meet legal obligations.

A1.10 Please also note that copyright and all other intellectual property in responses will be assumed to be licensed to Ofcom to use. Ofcom's approach on intellectual property rights is explained further on its website at http://www.ofcom.org.uk/terms-of-use/

Next steps

A1.11 Following the end of the consultation period, Ofcom intends to publish a statement in early 2016.

A1.12 Please note that you can register to receive free mail Updates alerting you to the publications of relevant Ofcom documents. For more details please see: http://www.ofcom.org.uk/email-updates/

Ofcom's consultation processes

A1.13 Ofcom seeks to ensure that responding to a consultation is easy as possible. For more information please see our consultation principles in Annex 2.

A1.14 If you have any comments or suggestions on how Ofcom conducts its consultations, please call our consultation helpdesk on 020 7981 3003 or e-mail us at consult@ofcom.org.uk . We would particularly welcome thoughts on how Ofcom could more effectively seek the views of those groups or individuals, such as small businesses or particular types of residential consumers, who are less likely to give their opinions through a formal consultation.

A1.15 If you would like to discuss these issues or Ofcom's consultation processes more generally you can alternatively contact Graham Howell, Secretary to the Corporation, who is Ofcom's consultation champion:

Graham Howell
Ofcom
Riverside House
2a Southwark Bridge Road
London SE1 9HA

Tel: 020 7981 3601

Email Graham.Howell@ofcom.org.uk

Annex 2

Ofcom's consultation principles

A2.1 Ofcom has published the following seven principles that it will follow for each public written consultation:

Before the consultation

A2.2 Where possible, we will hold informal talks with people and organisations before announcing a big consultation to find out whether we are thinking in the right direction. If we do not have enough time to do this, we will hold an open meeting to explain our proposals shortly after announcing the consultation.

During the consultation

A2.3 We will be clear about who we are consulting, why, on what questions and for how long.

A2.4 We will make the consultation document as short and simple as possible with a summary of no more than two pages. We will try to make it as easy as possible to give us a written response. If the consultation is complicated, we may provide a shortened Plain English Guide for smaller organisations or individuals who would otherwise not be able to spare the time to share their views.

A2.5 We will consult for up to 10 weeks depending on the potential impact of our proposals.

A2.6 A person within Ofcom will be in charge of making sure we follow our own guidelines and reach out to the largest number of people and organisations interested in the outcome of our decisions. Ofcom's 'Consultation Champion' will also be the main person to contact with views on the way we run our consultations.

A2.7 If we are not able to follow one of these principles, we will explain why.

After the consultation

A2.8 We think it is important for everyone interested in an issue to see the views of others during a consultation. We would usually publish all the responses we have received on our website. In our statement, we will give reasons for our decisions and will give an account of how the views of those concerned helped shape those decisions.

Annex 3

Consultation response cover sheet

A3.1 In the interests of transparency and good regulatory practice, we will publish all consultation responses in full on our website, www.ofcom.org.uk.

A3.2 We have produced a coversheet for responses (see below) and would be very grateful if you could send one with your response (this is incorporated into the online web form if you respond in this way). This will speed up our processing of responses, and help to maintain confidentiality where appropriate.

A3.3 The quality of consultation can be enhanced by publishing responses before the consultation period closes. In particular, this can help those individuals and organisations with limited resources or familiarity with the issues to respond in a more informed way. Therefore Ofcom would encourage respondents to complete their coversheet in a way that allows Ofcom to publish their responses upon receipt, rather than waiting until the consultation period has ended.

A3.4 We strongly prefer to receive responses via the online web form which incorporates the coversheet. If you are responding via email, post or fax you can download an electronic copy of this coversheet in Word or RTF format from the 'Consultations' section of our website at http://stakeholders.ofcom.org.uk/consultations/consultation-response-coversheet/.

A3.5 Please put any parts of your response you consider should be kept confidential in a separate annex to your response and include your reasons why this part of your response should not be published. This can include information such as your personal background and experience. If you want your name, address, other contact details, or job title to remain confidential, please provide them in your cover sheet only, so that we don't have to edit your response.

Cover sheet for response to an Ofcom consultation

BASIC DETAILS

Consultation title:

To (Ofcom contact):

Name of respondent:

Representing (self or organisation/s):

Address (if not received by email):

CONFIDENTIALITY

Please tick below what part of your response you consider is confidential, giving your reasons why

Nothing ☐

Whole response ☐

Part of the response ☐

Name/contact details/job title ☐

Organisation ☐

If there is no separate annex, which parts?

If you want part of your response, your name or your organisation not to be published, can Ofcom still publish a reference to the contents of your response (including, for any confidential parts, a general summary that does not disclose the specific information or enable you to be identified)?

DECLARATION

I confirm that the correspondence supplied with this cover sheet is a formal consultation response that Ofcom can publish. However, in supplying this response, I understand that Ofcom may need to publish all responses, including those which are marked as confidential, in order to meet legal obligations. If I have sent my response by email, Ofcom can disregard any standard e-mail text about not disclosing email contents and attachments.

Ofcom seeks to publish responses on receipt. If your response is non-confidential (in whole or in part), and you would prefer us to publish your response only once the consultation has ended, please tick here. ☐

Name

Signed (if hard copy)

Annex 4

Consultation questions

A4.1 Questions requiring responses by 5pm on 7 August 2015.

Question 4.1: Do you have any comments on the scope and approach to this review? Specifically, do you agree with our decision to determine whether BT's attribution methodologies were clearly inappropriate by reference to the Regulatory Accounting Principles?

Question 6.1: Are there any specific issues that we do not identify in Section 6 that you consider should be reviewed further? If so, please identify those methodologies and explain why you consider the current methodology might not be appropriate.

Question 7.1: Do you have any comments on the errors we have identified in Section 7 and how we have addressed them?

Question 8.1: Do you agree with our assessment that BT's use of attribution methodologies based on pay and return on assets for general overheads is clearly inappropriate? Please provide your reasons.

Question 8.2: Where we have proposed alternative methodologies to attribute general overheads in Section 8, do you agree that they provide an appropriate and practicable basis? Please provide reasons to support your answer.

Question 9.1: Do you agree that the way BT attributes profits and losses on disposal of land and buildings is clearly inappropriate and, if so, do you agree that it should instead attribute them in the way we propose in Section 9?

Question 9.2: Do you agree that the way BT attributes non-chargeable vacant space to be clearly inappropriate and, if so, do you agree that it should instead attribute them in the way we propose in Section 9?

Question 9.3: Do you have any comments on our assessment of the other attribution methodologies considered in Section 9? Specifically, do you have any information that you consider to be relevant to our assessment of whether the methodologies are appropriate and of any alternative attribution methodologies that might replace them?

Question 10.1: Do you have any comments on our assessment of the supporting evidence used by BT to inform its cost attribution decisions, as described in Section 10? Specifically, do you have any suggestions for alternative data sources?

Question 11.1: Do you have any comments on our findings relating to BT's supporting documentation, as described in Section 11?

Question 12.1: Do you consider it would be helpful to stakeholders if BT reduced the number of attribution levels in BT's cost attribution system? Please provide your reasons for or against such a change.

Question 12.2: Do you think the current list of components or Plant Groups is appropriate? For example, do you agree that BT should report results for components, rather than super-components?

Question 12.3: Does reporting of costs by network component provide a sufficiently transparent way of breaking down costs for services? For example, do you think that costs for different network elements of duct, fibre and copper should be reported separately?

Annex 5

Estimate of market level impact

Introduction

A5.1 In Section 8, we explain why we consider that the way BT attributes some of its corporate overheads is clearly inappropriate. We propose alternative attribution methodologies and estimate the possible impact on the costs attributed to regulated activities if BT was to change the way it attributes costs in line with those proposals.

A5.2 In this annex, we provide a more detailed breakdown of these estimates (at market level) and explain the basis of these estimates and note their limitations.

Background

A5.3 Given the need to estimate the impact of our proposals in a timely manner we asked Cartesian to develop a model to simulate BT's cost attribution system.

Overview of Cartesian's estimation approach

A5.4 The accuracy of the estimates Cartesian's model produces is subject to the reasonableness of the simplifying assumptions made in the model and the accuracy of the input data provided by BT. Cartesian identified various limitations to their modelling, as follows:

- Cartesian is unable to fully replicate the complexity of ASPIRE when conducting cost attribution; the scenario modelling conducted by Cartesian may not capture some of the subtleties in BT's system
- Previously Allocated Costs (PAC) methodologies used by BT to attribute costs are based on a combination of factors such as OUC, CoW and different cost drivers to attribute cost. This is different to Ofcom's definition of PAC used for the purposes of this exercise.
- Cartesian has used the 'total sum' of CCA from the destination cost categories (excluding the cost category being exhausted) as a metric of 'Previously Allocated Cost' (as agreed with Ofcom)
- AG103, AG409 and AG410 are exhausted at Level 2 in BT's cost attribution process; for simplicity, the approach to modelling does not capture any dependencies between these cost categories, e.g. whether costs exhausted from AG103 are treated as previously allocated when exhausting costs from AG409.
- To determine the cost attribution percentages for cost categories within level 2, Cartesian has used the baseline numbers at Level 1. Cartesian believes that pay costs at Level 1 are a good proxy of how pay costs are distributed across all AGs and PGs prior to exhaustion of AG103, AG409 and AG410–Cartesian recognises that this may not accurate, however in the interest of effort vs. value and in the absence of detailed guidance from BT, Cartesian strongly believes that this trade-off results in minimal accuracy concerns

A5.5 Possibly the most significant of these limitations is that, to model the approximate impact of the proposed changes (which included proposals to replace the two similar attribution methodologies used at present with several different attribution bases) Cartesian modelled the impact of attributing all of these costs using a single attribution methodology (based on previously allocated costs).

A5.6 However, Cartesian has explained that it considers that the impacts and outputs from their model are representative of the cumulative impact of our proposals in Section 8 will have on BT's costs.

A5.7 To the extent that we decide that any of the proposed changes should be reflected in BT's financial data, we expect to require BT to run those changes through its cost attribution system to derive more accurate calculations to be included in the base year data for the LLCC.

Estimated impact of proposed changes

A5.8 Subject to the caveats set out above, Table A5.1 sets out Cartesian's estimates of the impact of moving to the attribution methodologies set out in Section 8.

Table A5.1

Estimated impact of proposed changes to the way BT attributes corporate overheads

	Market	Base case (£'m)	Adjusted base (£'m)	Delta (£m)	Delta (%)
Fixed Access Markets	Wholesale Line Rentals	1,346	1,255	(91)	(7%)
	Wholesale ISDN2	58	54	(3)	(6%)
	Wholesale ISDN30	71	66	(5)	(7%)
	Local Loop Unbundling	862	806	(56)	(6%)
Business Connectivity Markets	TISBO (<8 Mbps)	224	213	(11)	(5%)
	TISBO (8 - 45 Mbps)	13	12	(1)	(5%)
	TISBO (45 - 155 Mbps)	14	13	(1)	(5%)
	Wholesale Regional Trunk Segments	9	9	(1)	(6%)
	Point of Handover	4	4	-	(6%)
	AISBO Non-WECLA	354	317	(36)	(10%)
	AISBO WECLA	32	30	(3)	(8%)
	MISBO Non-WECLA	36	34	(3)	(7%)
Narrowband Markets	Calls: Call Origination	110	107	(3)	(3%)
	Calls: Call Termination	93	90	(2)	(3%)
	Interconnect Circuits	25	24	(1)	(4%)
Wholesale Broadband Access	WBA - Market 1	310	304	(7)	(2%)
	WBA - Market 2	119	116	(3)	(2%)
	Total Regulated	**3,680**	**3,454**	**(226)**	(6%)
	Total Unregulated	11,459	11,685	226	2%
	Grand Total	**15,138**	**15,138**	**£0**	0%

Source: Cartesian