ENSURING BT'S RFS IS FIT FOR PURPOSE

A report for Vodafone

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EXECUTIVE SUMMARY

Context

Ofcom is consulting on its approach to regulation for the period 2021-2026, designed to stimulate investment in 'Full-fibre' networks. In parallel, Ofcom is consulting on changes to BT's Regulatory Financial Statements to support regulation. This paper reviews the future needs for regulatory financial information from BT and the degree to which Ofcom's current proposals meet these needs.

Ofcom's strategy

During the next five years Ofcom still expects that BT will be determined to have significant market power (SMP) across most of the UK for 'active' services and the whole of the UK for passive access to duct and fibre. An SMP determination means that the Openreach division of BT will be able to act independently of competitors to a significant degree in these markets. This ability to act without effective competitive constraint could result in poor outcomes for consumers through three mechanisms:

- Openreach increasing prices above a competitive level;
- Openreach distorting competition by discriminating in favour of other BT divisions (or itself where Openreach used inputs also supplied to potential competitors to Openreach); and
- BT foreclosing rivals by setting the margin between wholesale inputs bought by competitors and downstream prices which does not allow rivals to profitably compete.

The regulatory framework within which Ofcom operates allows the imposition of remedies in the relevant markets to constrain the ability of BT and Openreach to increase prices and act anti-competitively, in line with these theories of harm.

Ofcom's latest proposals for remedies are designed to be consistent with its strategy to stimulate investment in new 'full-fibre' networks by providing regulated access to Openreach's ducts and poles and a greater degree of regulatory forbearance for 'active' services in geographic markets where Ofcom expects competition may develop.

The role of regulatory financial statements

Financial information is a key input to the remedies that aim to constrain Openreach's ability to act to the detriment of consumers. Ofcom recognises that stakeholders require accurate information on regulated markets in order to engage fully in the regulatory process: from setting overall strategy to implementation and monitoring of the resulting regulation. For this reason, Ofcom requires BT to produce and publish Regulatory Financial Statements (RFS) and supporting methodology.

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In the past, the availability of clear information on BT's costs and revenues have been critical in giving stakeholders the ability to identify where regulation did not appear to be functioning effectively, for example:

- Showing where the approach to setting price regulation had enabled BT to make profits above the level targeted by Ofcom, without any consequent benefit in terms of increased investment, leading to Ofcom imposing one off price-cuts in the starting level of regulated prices;
- Allowing operators to identify where they had been over-charged by BT, resulting in a refund from BT; and
- Allowing stakeholders to identify issues in BT's methodology which had resulted in overstatement of the costs of regulated services which, when corrected, resulted in regulated prices being set at a lower level.

Without the means for stakeholders and Ofcom to monitor BT's compliance with SMP conditions and ensure regulation effectively addresses underlying competition issues, issues such as those described above could go undetected. Given the significant change in Ofcom's strategy, there is a greater risk of such negative outcomes due to forecast errors. As a result, there is considerable scope for consumer harm if the information in the RFS is inadequate for the purposes of monitoring BT's conduct and the effectiveness of interventions.

In the past setting of cost-based regulation has provided stakeholders, including Ofcom, with strong incentives to review the RFS and methodology to ensure that regulated prices adequately reflect BT's costs. A move to a five-year market review cycle and a move away from cost-based charge controls for some services will remove some of the direct incentives for stakeholders to engage with the RFS. However, there will be strong interest in this market review period in assessing the effectiveness of Ofcom's strategy in meeting the Government's objectives in terms of full-fibre roll out. Understanding whether the potential costs of Ofcom's strategy, in terms of higher prices or reduced retail competition, are justified by the resulting benefits will require continued transparency.

Indeed, the longer period of time between reviews means fewer opportunities to correct the approach if competition in the market does not develop as expected following the significant change in Ofcom's strategy or there is significant consumer harm. Having access to detailed, accurate and transparent information from the RFS in the years leading up to the next review which can provide critical information on the functioning of the market and the effectiveness of regulation to date. This will be important to allow for effective monitoring of BT's compliance in the intervening period and in minimising risks for the next review period.

Conversely, there appears to be no evidence that the publication of the RFS has adversely affected the ability of BT to effectively compete either at a wholesale or retail level. Despite publication of the RFS, BT has maintained profitability at the wholesale level and is the largest provider at a retail level in broadband markets.

Ofcom's proposals for the RFS

Ofcom is proposing to continue to require BT to produce and publish the RFS in a similar format to the current requirements, with some relatively minor adjustments to the RFS which aim to reflect changes in regulation in two ways:

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- Removing redundant information, where the remedies that the information were designed to support are no longer being imposed; and
- Reporting on services resulting from the new remedies that have been introduced as part of the new strategy.

While the intent of the proposed changes in the RFS is in line with the need for the RFS to evolve over time, the resulting proposals are not fit for purpose given Ofcom's proposed approach to regulation going forwards. Furthermore, the proposals will not provide sufficient detail, in particular:

- Sufficient information on the costs and usage, both internal and external, of passive infrastructure (ducts and poles);
- Clarity on the attribution of costs between legacy copper based services, new mass market 'full-fibre' services and on-going high quality Ethernet 'business connectivity' services;
- More detailed and accurate attribution of costs between different geographies given the ability and incentive of BT to allocate costs to the detriment of consumers and competitors;
- For services and geographies where Ofcom is proposing to move away from cost-based charge controls, information to show that Openreach and BT are not discriminating between internal use and competitors, or attempting to foreclose competitors.

Below we detail the requirements for additional information in the RFS for each of these areas.

Information requirements for passive services

Passive Infrastructure access (PIA) is a critical element in Ofcom's overall strategy. Openreach is expected to have market power in the provision of passive access due to its control of the underlying infrastructure. This market power is expected to persist, even where Ofcom has the expectation that Openreach may face increased competition in active downstream markets in future market review periods, due to competitors rolling out fibre networks using PIA.

This key role in Ofcom's future strategy means there is a need for additional information on PIA to be provided in the RFS. The need for close monitoring of BT's behaviour is further highlighted by the fact that BT's internal usage of passive infrastructure is within Openreach, unlike other Openreach services where BT's internal use results in transactions between Openreach and structurally separate downstream divisions, with equivalence of inputs requirements. The role of PIA as an input to active products including those delivered by competitors to Openreach, and the current opacity in relation to internal and external charges for use of passive infrastructure, gives significant scope for BT to engage in discrimination and/or anti-competitive behaviour at different levels of the value chain. Given the weight placed on full-fibre competition by Ofcom this risks significant detriment to competition and ultimately consumers.

The information that Ofcom proposes BT provide on PIA does not appear to meet the requirements to inform and monitor remedies with respect to cost-based pricing

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and non-discrimination. In particular it appears to provide little information on whether:

- Openreach's regulated charges reflect costs;
- whether Openreach is discriminating in favour of its own downstream fibre business; and
- whether Openreach is engaged in margin squeeze between PIA charges and the active products it supplies.

Without suitable information on PIA being collected and published, a decade after the introduction of PIA in 2010, it is unclear how stakeholders can be reassured that the PIA remedies are effective.

Transparency in the transition from copper to full-fibre networks

Ofcom's strategy is designed to encourage operators to roll out full-fibre networks to replace existing copper networks used to deliver mass market services. At the same time Ofcom expects 'business connectivity' services delivered over existing full-fibre networks to move to infrastructure which is shared with the mass market full-fibre networks being rolled out.

This raises a number of challenges for BT's service costing:

- Where full-fibre networks are rolled out, either by Openreach or by competitors, demand on the legacy copper network is likely to fall, potentially leading to stranded assets in these areas while in other areas where fibre has not been rolled out, demand and costs are likely to be stable;
- Full-fibre networks will have relatively low demand initially as customers migrate across from copper networks and high capital charges due to the use of straight line depreciation in the RFS ; and
- Economies of scope for operators serving both mass-market and other users over common access networks, including Openreach and competitors such as Virgin Media and City Fibre, would suggest that users of existing high quality 'business connectivity' services should, if anything, see reductions in unit costs from any supply-side convergence with mass-market services.

This complexity means that there is more scope for mis-attribution of costs between services and groups of customers. The annex to this report shows an example of the value of the published information, in this case identifying an issue in the attribution of costs to business connectivity fibre which appear to be driven by the unrelated roll-out of full-fibre broadband networks.

Ensuring accurate and transparent cost data across these groups of services and customers will be essential for ensuring that remedies implemented in the period 2021-2026 are adequately monitored and also to assess, ex-post, the costs and benefits of Ofcom's strategy for input to the next market review.

Requirements for a geographically separated approach

To date, geographic differentiation in regulation has been limited to small areas, such as Central London. As such there has been little need to accurately 'de-average' unit costs across the UK. However, Ofcom's proposed approach involves

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a further shift away from cost-based charge controls to weaker forms of active price regulation for some geographies (Area 2), potentially including complete de-regulation in areas where BT is determined no longer to have SMP (Area 1), while other geographies are moving closer to utility-style rate of return regulation (Area 3).

As competition develops, the three categories of geographic market may have broadly similar scale in terms of numbers of premises, but differ significantly in both cost per unit and the regulatory approach. Unless carefully monitored, geographic differentiation could provide BT with both the incentive and the ability to allocate costs between markets in a way which increases costs for consumers while distorting competition in downstream markets.

In terms of incentive, if active services in some geographies are regulated closely to cost, i.e. under a RAB approach as proposed, BT will have a clear incentive to allocate as much cost to these services and geographies as possible. Similarly BT will have an incentive to allocate costs from downstream services to infrastructure and hence PIA. Allocating costs away from downstream activities where BT faces competition, such as the provision of fibre services in Area 2, could also reduce any apparent margin squeeze, giving BT greater pricing freedom in these areas.

BT has significant ability to allocate costs between activities which are regulated and those which are not. In contrast to other utilities regulated using a RAB, BT is a vertically-integrated UK-wide business where only a small proportion of its output will be regulated at cost.

This incentive and ability risks that costs will be allocated across geographies in a way which increases end user prices, particularly in those geographies where Openreach is not expected to face competition, and distorts competition in those geographies where Openreach does face competition. These risks increase the need for transparency and comparability across geographies, particularly given the need for geographic level data is new.

Strictly different information requirements are needed within each geographic category, to reflect different regulation. However, broadly similar *levels* of detailed information are likely to be required across geographic areas either to determine regulated prices (PIA across all geographies and active services in Area 3) or to monitor potential distortions in downstream markets (active services in Area 2 – see below).

As such the appropriate approach would be to require comparable information across Area 2 and Area 3 to allow for monitoring within geography and comparison between geographies.

Information requirements for active services in ‘Area 2’

For active services, in the past the close alignment of wholesale charge controls to actual or expected cost provided a relatively high degree of protection from potential abuses by BT. For example, cost-based prices meant both the ability and incentive of BT to engage in margin squeeze was significantly reduced. However, Ofcom is proposing to (further) de-couple Openreach’s charges from reported costs in geographies considered prospectively competitive (Area 2), in the expectation that this will lead to greater investment by BT and rivals.

This clearly increases the ability of BT to price in a way which exploits its SMP, to the detriment of consumers. Ofcom accepts the possibility of wholesale prices being set at a higher level but considers that this is offset by the potential gains through greater investment in full-fibre networks. However, there remain risks of anti-competitive behaviour by BT. This flexibility on pricing gives scope for anti-competitive conduct across different levels of the value chain. This means there is potential for BT to materially impact the incentives of potential competitors to invest in areas that Ofcom considers competitive or prospectively competitive. In addition it is important that stakeholders can assess whether the balance between costs and benefits differs from that predicted by Ofcom, for example if 'excess' profits generated by BT are simply a transfer from consumers to BT's investors rather than being reflected in investment leading to increased choice and quality of services.

Effectively monitoring BT's behaviour, and assessing whether the costs and benefits of Ofcom's strategy are balanced, requires a greater scope of information than when prices were closely aligned with costs. While Ofcom's approach reduces the need in some markets for detailed financial information for a subset of services for the narrow purpose of setting and monitoring charge controls, effective implementation of Ofcom's strategy requires a greater scope of information than previously.

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1 INTRODUCTION

1.1 RFS within the regulatory framework

Ofcom's statutory duties and powers are set out in the 2003 Communications Act which in turn implements the EU Common Regulatory Framework (CRF)[1]. The RFS is designed to support economic regulation within the CRF:

- The identification of 'relevant markets' which are susceptible to ex-ante regulation;
- Market definition and market analysis to identify any markets where one or more operators have Significant Market Power; and
- Application of remedies for operators with SMP.

The CRF sets out two cases where accounting information can be required from SMP operators[2]:

1. Accounting separation data can be required from SMP operators to support non-discrimination remedies; and
2. Cost-accounting obligations can be imposed on SMP operators to support price regulation remedies, including measures to prevent excessive prices and margin squeeze.

As such, cost-accounting requirements can be imposed on BT as part of the remedies where BT is found to have SMP in a defined market. These requirements are designed to support three potential theories of harm in the absence of regulation:

- That BT will discriminate against competitors by setting wholesale prices at a higher level than the equivalent internal usage of network services;
- That BT will set wholesale prices at an excessive level; and
- That BT will engage in 'margin squeeze', setting the margin between wholesale and retail prices such that an efficient rival could not deliver services profitably.

The CRF also sets out some minimum requirements for the degree of transparency in cost-accounting with stakeholders, other than BT and Ofcom, having visibility of both the RFS methodology and results.

1.2 Development of the RFS over time

1.2.1 Pre-1998

BT's RFS pre-date the EU Common Regulatory Framework and its predecessor the Open Network Provision (ONP) directives, but were introduced to reflect similar theories of harm to those set out in the CRF:

[1] The CRF has been updated by the new European Electronic Communications Code (EECC) which is due to be implemented in to UK law by 20th December 2020. The provisions of the EECC related to regulatory financial information are largely unchanged from those in the CRF.

[2] Separated accounts can be also required from operators who have special and exclusive rights without hem having SMP. This is not applicable to BT as it has no special and exclusive rights.

- Accounting separation was implemented to ensure BT did not use its control of the access network (which was considered non-contestable) to discriminate against BT's competitors for call services delivered across the contestable 'core network'; and
- The RFS was used to set interconnection rates directly according to the costs reported in the RFS with a component based cost approach to ensure that interconnection charges were calculated on the same basis[3].

1.2.2 1998-2005

Over the period 1998 to 2005 a number of changes in approach were implemented reflecting changes to the market, the regulatory framework and Ofcom's strategy including:

- A move to regulating interconnection rates through a charge-control based on forward-looking costs rather than setting individual rates (retrospectively) based on historic costs;
- A shift in importance from voice calls to Internet services delivered over broadband connections;
- The introduction of the CRF and the resulting market-based regulation; and
- A move to a focus on access-based regulation and the 'functional separation' of the Openreach division of BT controlling the access network.

This resulted in a number of changes to the RFS:

- Cost being reported on a "current cost accounting" basis rather than a "historic cost accounting basis";
- Aggregate results based on defined markets where BT has SMP, rather than accounting separation 'businesses';
- Service costs being reported for regulated access services such as 'local loop unbundling' in addition to interconnection services; and
- LRIC information being produced to show 'floors' and 'ceilings' for individual charges, where 'cost orientation' was imposed in addition to or instead of a charge control.

The market, in particular for broadband services, has evolved over the period of Ofcom's existence and there is an expectation of further developments in the medium to long-term. Initially, mass-market broadband was delivered by BT and access seekers relying largely on BT's legacy copper network, with access seekers using local loop unbundling (LLU). High quality leased lines based on 'full-fibre' were typically only required by larger businesses and enterprises.

Given the demands for faster speeds and higher quality broadband connections, BT's copper network was upgraded to fibre to the cabinet (FTTC) allowing BT and access seekers to offer 'superfast broadband'.

[3] Given the RFS were only available sometime after the end of the financial year this required 'interim' interconnection rates to be set until the final costs were available to determine the actual interconnection payments.

1.2.3 Development of the current governance structure for the RFS

After 2005 there was an increasing level of divergence between the cost-base used for the charge control and that used by BT for production of the RFS, including:

- The regulatory asset value (RAV) of access network assets used for charge control being different from the CCA valuation used in the RFS;
- BT introducing changes to asset valuation methodologies which resulted in one-off holding gains, which if used for future charge controls would result in an unearned 'windfall gain' for BT's investors;
- Some historic decisions made by BT on cost attribution approaches were found to be inappropriate when reviewed in the context of regulatory decisions; and
- BT made changes to methodology over time, at times clearly reflecting new information or operational changes but at times appearing to shift costs to particular regulated services.

These developments meant that the RFS became increasingly of limited value for both Ofcom and other stakeholders, with Ofcom having to make a large number of adjustments to the outputs of the RFS in order to set the appropriate level of costs for the 'base year' of charge control forecast models. This meant that the RFS had reduced utility for both Ofcom and other stakeholders.

Ofcom identified these issues and issued a new set of Regulatory Accounting Principles in 2014 requiring the RFS to align more closely to the cost-base used for price regulation and requiring BT to seek approval for, and show the impact of, any changes to methodology. This was followed by a review of the cost allocation methodologies in 2015 which resulted in Ofcom requiring a number of changes to the methodology.

Following the 2014 review Ofcom set out the process through which BT must produce the RFS in a series of 8 directions under the SMP framework, as summarised in the table below.

Figure 1 Ofcom directions on the RFS

Direction	Purpose
Regulatory Accounting Principles	A common set of principles that BT must comply with when making decisions on the RFS in the absence of more explicit guidance
Consistency with Regulatory Decisions and Regulatory Asset Value	To the degree practical, the costing methodologies used in the RFS should be consistent with the cost-approach used for cost-based regulation such as charge controls
Transparency	A requirement that the supporting material provided should provide clarity to stakeholders
Audit of the RFS	Sets out the standard of audit to be applied to the RFS
Reconciliation Report	A requirement to publish information showing the methodological changes/errors identified since the previous year
Adjusted Financial Performance	Additional information estimating the impact of regulatory decisions not reflected in the RFS
Preparation, Delivery, Publication, Form and Content of the RFS	Specifies the required contents of the RFS, including which data should be published
Network Components	Sets out the network components which are used in the ultimate step of service-costing under an element based costing approach

Source: Adapted from Statement: Regulatory reporting directions covering the wholesale local access, narrowband and wholesale broadband access markets for 2018/19 and following years

1.3 The RFS will need to evolve in line with changes in the market and Ofcom's strategy

There is an expectation of future needs for 'ultrafast' broadband delivered using 'full-fibre' networks. In order to facilitate the transition to 'full-fibre', Ofcom's strategy is evolving, with more emphasis on infrastructure based-competition and a move away from cost-based access charge controls in areas where there is a realistic prospect of competition. This has a number of impacts:

- Regulated physical infrastructure access (PIA) is expected to play a greater role;
- Ofcom considers that there may be increasing convergence between corporate and mass market products, with a single market review process;
- Ofcom proposes to introduce increased geographic differentiation in regulation of markets for active products depending on competitive conditions;

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- In prospectively competitive areas, Ofcom foresees a move away from charge controls on wholesale access services that closely reflect costs as reported in the RFS, to price caps designed to provide 'back stop' consumer protection in the transition to competition, while providing appropriate investment incentives.

The implementation of Ofcom's strategy is still under consultation as part of ongoing market review processes. However, whatever Ofcom's final approach, the RFS will need to evolve to reflect the changes in regulation and the associated risks and to continue to allow stakeholders to effectively engage in the regulatory process. In particular, the RFS will need to:

- provide consistent information on the cost of infrastructure used by Openreach internally and provided to others through PIA;
- provide robust costing information on active services during the transition to fibre;
- show cost information for the different geographic markets used for regulation; and
- provide robust information to allow Ofcom to conduct an ex-post impact assessment to understand whether the costs and benefits implicitly assumed when determining the appropriate remedies were plausible.

In addition, Ofcom recognises that BT may have the incentive and the ability to engage in behaviour which distorts competition during the period where it has market power. There will be a greater need for Ofcom to ensure the BT does not engage in potentially exclusionary behaviour in both upstream infrastructure markets and downstream retail markets.

1.4 Purpose of this report

In this report we set out a number of challenges which will require the RFS to evolve in order to reflect the changes in Ofcom's strategy and in the market. We set out the information requirements necessary to allow Ofcom and stakeholders to monitor the compliance with and effectiveness of SMP conditions and participate in the regulatory decision making process.

Section 2 provides an overview of the forward looking challenges for the RFS to support Ofcom's strategy and **Section 3** provides a review of the current RFS, and Ofcom's existing proposals for future RFS developments; and sets out our views on the changes that will be necessary in the future to ensure the RFS remains fit for purpose.

We also include an **Annex** detailing an issue we have identified in the reporting on BCMR profitability in the 2019 RFS which highlights both the benefits of stakeholder transparency and also the risks of failing to adapt the RFS in the transition to 'full-fibre' networks.

1.5 Recommendations presented in this report

Based on the review of the current RFS, and Ofcom's existing proposals, we have developed a number of recommendations for changes to the RFS that will be

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necessary to ensure the RFS remains fit-for-purpose. These recommendations are set out below:

- Given the critical importance of PIA, a greater level of detail and clarity on BT's PIA costs, revenues and profitability is required, for both external and internal (e.g. by Openreach and other BT divisions) usage. In addition, continued reporting of downstream active product cost and revenues is required to not only measure the effectiveness of regulation in encouraging use of PIA for the delivery of full-fibre networks, but also to monitor potential anticompetitive behaviour resulting from BT's continue control of infrastructure.
- A transparent approach is necessary for the separation of costs and revenues between different categories of services during the expected transition to converged fibre networks. Three broad categories of services can be defined: legacy copper-based mass-market services that are expected to become obsolete, new full-fibre based mass-market services replacing copper services and high quality 'business connectivity' services, which will be largely unchanged during the transition. Given the uncertainty regarding the extent and rate to which converged networks will materialise (and the differences in the degree of convergence geographically), it is important that the RFS allows for the assessment of costs and outcomes for both mass-market and high quality services separately. This will also need to take account of differences across geographies, both in a scenario where converged networks materialise, as anticipated by Ofcom, and a scenario where this happens to a significantly lesser degree. This approach should take into account the requirements for this data to assess impacts on different customer groups and of Ofcom's specific regulatory policies for particular markets and/or products.
- Given different regulatory approaches across different geographies served by a single integrated operator, BT could have both the ability and incentive to distort cost allocation in the RFS, in order to increase regulated prices and distort competition. Provision for and clarity on the approach and methodology to be applied for the separation of costs and revenues by geographic markets within the RFS is required, including the treatment of geographically focussed subsidies such as BDUK funding, and any funding associated with the Universal Service Obligation. The RFS should include sufficient information across products for all geographic markets, both to ensure allocation of costs across geographic markets and to monitor regulation within geographic markets. Information on both active and passive costs will be required not only for geographic areas without competition (Area 3) for the assessment and setting of charge controls, but also in areas that are prospectively competitive (Area 2) for the monitoring of compliance with 'no undue discrimination' requirements and for the detection of anti-competitive behaviour.
- The content of the RFS must be considered and refined to ensure that sufficient information is provided across markets and levels of the value chain to allow any potential anti-competitive behaviour (and the effectiveness of ex-ante regulation), to be monitored even when regulation for some services is moving away from a strict cost-based approach (i.e. in Area 2).

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2 CHALLENGES FOR THE RFS GOING FORWARDS

In this section we first consider how the RFS have supported regulation of BT in the past and then set out some of the changes to Ofcom's strategy which will have implications for the requirements for the RFS going forwards. We then highlight why there is a need for a greater degree of information to be provided in the RFS going forwards, in light of these regulatory changes.

2.1 The RFS has been focussed on cost-based charge controls in the past

In the past, given the nature of Ofcom's regulation, the requirements for the RFS to enable monitoring of compliance and effectiveness of regulation were narrow and mapped closely to specific aspects of Ofcom's regulation of BT. Ofcom's strategy was focused on requiring BT to provide wholesale access to its network at cost and on non-discriminatory terms (compared to BT's own use), to allow competitors to offer retail services in competition with BT.

In markets where BT had SMP, Ofcom set requirements for access and set charge controls on the access products, typically attempting to align prices closely to BT's costs. Ofcom also required BT to meet certain non-discrimination conditions. This gave alternative providers access to BT's network, enabling them to offer products to retail customers and businesses. It also limited BT's ability to engage in anti-competitive behaviour by charging excessive or discriminatory access prices to rivals in order to foreclose entry.

In order to monitor compliance and the effectiveness of regulation, it was necessary for the RFS to include detailed cost information on those products that were under charge control. Ofcom and stakeholders could observe BT's cost base for charge controlled products through the RFS, and assess:

- whether proposals on price caps were aligned with the starting level of costs;
- whether BT were complying with SMP conditions including non-discrimination; and
- whether price caps were effective in ensuring BT did not make excessive returns.

The effectiveness of the RFS in supporting Ofcom's objectives, and allowing stakeholders to participate in the regulatory decision making process was shown in the past. Ofcom and stakeholders were able to identify potential issues including where BT was making excessive returns, allowing for these to be addressed in subsequent reviews. For example, in response to Ofcom's 2015 consultation on the BCMR, Vodafone engaged Frontier economics to use the RFS to identify that BT was making excessive profits for some products[4]. The information in the RFS was also key for analysis undertaken as part of the Ethernet overcharge dispute[5].

[4] https://www.ofcom.org.uk/__data/assets/pdf_file/0033/38499/vodafone.pdf

[5] https://www.ofcom.org.uk/__data/assets/pdf_file/0022/101596/Ethernet-final-determinations.pdf

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There is a need for wider stakeholder participation to hold BT to account for its compliance and to ensure that Ofcom is fulfilling its objectives. Stakeholders, such as access seekers reliant on BT's network for the provision of services, have a clear incentive to identify issues or gaps in the regulatory process, either in its design or execution. By having access to the necessary information to review relevant market information, stakeholders can therefore play a key role in ensuring regulation in these markets is effective.

As an example of this, on behalf of Vodafone, we have reviewed the most recent RFS prepared by BT (the 2019 RFS). A more detailed explanation of our analysis is provided in the Annex to this report. These latest statements appeared to indicate that the profitability of its Business Connectivity Market (BCMR) segment – as measured by the return on Mean Capital Employed (MCE) – has fallen, down from 13% in 2017 to 3.5% in 2019. This would suggest that the prices set by BT are below cost (including the cost of capital) and that the forecasts underlying the previous charge control set by Ofcom had not been accurate. However, through a more detailed examination of the RFS and its underlying methodologies, we have found that the RFS is materially overstating costs for BCMR services due to the attribution methodology being used. As a result, the profitability in the BCMR market is being systematically understated.

These examples highlight the important need for the RFS and supporting documentation to allow for stakeholders and Ofcom to review the performance of BT and the outcomes in SMP markets. This may have significant implications for compliance with ex-ante and ex-post regulation in these markets, and the future regulatory strategy. It further highlights the importance of transparency in how the RFS is compiled, including cost allocation methodologies, to allow such methodological issues to be identified.

Whilst the RFS was effective in the past, in order for the RFS to continue to be an effective tool for monitoring compliance and regulatory effectiveness, the requirements for reporting will need to change as regulation (and hence the risk associated with regulation) changes. Ofcom has recently introduced proposals and begun implementing significant changes to the regulation of BT. This therefore means that there is a clear need at this point in time to assess the extent to which the requirements of the RFS have changed and how it will need to be adapted going forwards.

2.2 Ofcom's strategy may result in significant changes to regulation in the future

The UK Government has set out targets for 'full-fibre' (fibre to the premises or 'FTTP') deployment across the UK by 2033[6], with an interim target of connecting 15 million premises by 2025. These targets were set with the aim of achieving a "truly high speed economy" and in order to keep up with other countries also pushing to migrate to full-fibre networks. The UK currently lags far behind leading

[6] Full-fibre target set out by the Chancellor, 22 May 2018 https://www.gov.uk/government/speeches/chancellor-speech-cbi-annual-dinner-2018

countries such as South Korea and Japan[7] in terms of full-fibre coverage with only around 4% of UK premises connected in 2018, but also lags behind other European countries such as Spain, Portugal and France[8] which have higher levels of fibre coverage than the UK.

Ofcom have set out a strategy with the intention of incentivising investment into full-fibre networks by reducing the costs of rolling out networks and increasing the returns from this investment. Ofcom is now implementing this strategy through a number of changes to regulation:

- Ofcom has facilitated access for rivals to BT's ducts and poles to build networks for both residential and small-business connections (Passive Infrastructure Access, or 'PIA') and has extended access to firms serving large businesses, as well as companies laying high-speed lines that support mobile and broadband networks, without restrictions. [9]
- Ofcom is proposing a significant change from its previous approach for both mass market (Wholesale Local Access or 'WLA') and business connectivity markets (BCM) with a converged approach for both markets, as set out in Ofcom's Strategic Policy Position in July 2018.[10]

Critically, in some geographies, Ofcom's new approach moves away from charge controls on a cost basis for baskets of services and towards a model with 'anchor pricing' for specific products only and pricing flexibility in prospectively competitive areas in order to encourage investment. These developments were partially implemented in Ofcom's approach in the 2018 WLA market review and in the 2019 BCMR decisions.

The move towards encouraging passive access in order to promote infrastructure-based competition represents a significant change in the nature of the regulation of BT. This means that for the RFS to continue to be fit-for-purpose, and allow Ofcom and stakeholders to monitor compliance and competition issues, significant changes will also be required for the RFS and BT's reporting in the future.

Where Ofcom moves away from cost-based charge controls, the rationale for the RFS changes. Where previously there was a clear link between reporting detailed cost data in the RFS for charged controlled products (and high level data for the rest of the SMP markets), if some charge controls are no longer cost-based, this function becomes less relevant as a measure of monitoring compliance and effectiveness of regulation. Conversely, the increased pricing freedom offered to BT leads to increased risks of anti-competitive behaviour, which is the other principle reason for publication of the RFS in the regulatory framework. We consider Ofcom's proposals in more detail below and the implications of this shift in emphasis.

7 South Korea c.99% and Japan c.97% according to https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/732496/Future_Telecoms_Infrastructure_Review.pdf

8 *"Countries that have relied on infrastructure competition have generally seen higher levels of fibre coverage, particularly in Spain (c.71%), Portugal (c.89%), and France (c.28% and increasing quickly)."* https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/732496/Future_Telecoms_Infrastructure_Review.pdf

9 https://www.ofcom.org.uk/__data/assets/pdf_file/0027/154593/volume-1-pimr-final-statement.pdf

10 https://www.ofcom.org.uk/__data/assets/pdf_file/0025/116539/investment-full-fibre-broadband.pdf

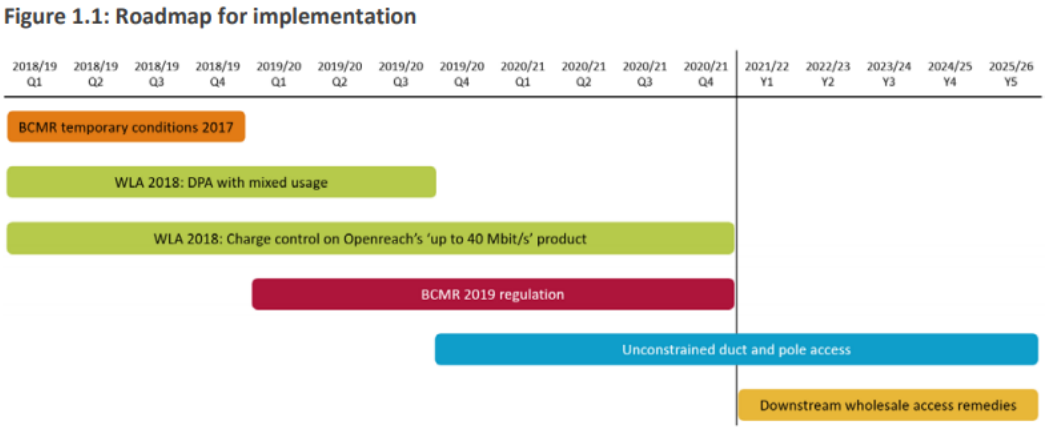
2.2.1 Ofcom's proposals for regulation of WLA and Business Connectivity markets

In the July 2018 Strategic Policy Position, Ofcom set out its intention for regulation going forwards. Ofcom has undertaken a series of reviews so far and set out a plan for the regulatory approach in the future:

- The 2018 WLA market review set out regulation for a 3 year period for the provision of mass-market broadband (homes and SMEs).
- Ofcom published the Physical Infrastructure Market Review in June 2019 (PIMR) which set out the requirement for BT to provide regulated access to its underlying passive infrastructure of ducts and poles to rivals wishing to provide leased lines (PIA). Whilst this obligation existed prior to this date, it was previously the case that BT only had to provide access where the purpose of rival networks to be deployed using the PIA was primarily for the provision of mass-market broadband (homes and SMEs) rather than leased lines.
- The 2019 BCMR focuses on leased lines which are used for business end-to-end connectivity, business access to VPNs, the internet and cloud computing, mobile backhaul and fixed broadband backhaul. In the 2019 BCMR Ofcom sets out product and geographic market definitions and proposed regulation for this market, acting as a stop-gap until 2021.

From 2021 Ofcom's intention is for the 2018 WLA and 2019 BCMR to be replaced with converged downstream access regulation, which will cover a longer time period of 5 years rather than the current 3 years. The converged approach is assumed to be appropriate as a move to FTTP would allow for mass market and leased line business products to be delivered relying on the same fibre infrastructure.

Figure 2 Ofcom's regulation roadmap



Source: https://www.ofcom.org.uk/__data/assets/pdf_file/0025/116539/investment-full-fibre-broadband.pdf

Ofcom is proposing to reduce the scope of downstream wholesale regulation in geographic areas where it views the market to be competitive or prospectively competitive, focusing only on 'anchor' prices (i.e. for low bandwidth products) and to allow the remaining regulated prices to be set by BT (implicitly above cost),

assuming the anchor prices act as a partial constraint on BT's pricing. This proposed shift is intended to improve the business case for fibre roll-out (to provide higher bandwidth products) by ultimately increasing the prices paid by customers.

In implementing this new approach, Ofcom is proposing to vary its regulation depending on the expected level of competition in a geographic area, based on the expected number of competing networks. This involves:

- continuing with cost-based regulation of PIA across the UK;
- using a common framework for market analysis for both mass market and business services, in the expectation of future convergence in the networks, and hence, competitive conditions for these different customers segments;
- introducing utility style 'RAB' regulation for areas where there is no expectation of entry of new fibre networks to compete with Openreach, allowing Openreach to pass through the cost of FTTP rollout in higher wholesale prices; and
- limiting regulation to the existing access services in 'prospectively competitive' areas, and implementing a 'price freeze' instead of the requirement for prices to move in line with unit costs for these services (and with efficiency increased over time leading to these prices generally declining in real terms)

2.2.2 Ofcom's expected outcomes

Underpinning all these proposals and changes is the desire to increase investment incentives into full-fibre networks, with the assumption that this will lead to positive outcomes for consumers in the medium to long term. As a result, there is an expectation of a range of outcomes as a result of these changes:

- Easier access to PIA combined with the use of 'anchor' pricing are expected by Ofcom to result in a significant growth in the external (non-BT) use of PIA and through this, an increase in the roll-out of FTTP networks by alternative providers. These mechanisms are intended to lower the costs of investment and by allowing BT prices and hence market prices to be higher than under a cost based charge control, increase the returns to investment into FTTP networks. As a result there is an expectation of a shift towards FTTP technology (as it becomes relatively more attractive). This is also expected to lead to a greater convergence in product markets, which will justify the converged framework for WLA and business connectivity markets in the future.
- By varying regulation geographically, the expectation is to move towards de-regulation for all but those areas where competition is not feasible. The framework for considering geographically differentiated markets is based on the number of existing alternative networks in each area and estimated roll-out cost for entrants. As a consequence of this change, Ofcom will give greater flexibility to BT in price setting and behaviour in all but the areas where competition is assumed to be infeasible.

The implementation of Ofcom's strategy is still under consideration as part of the ongoing market review and consultation processes. The extent to which the desired outcomes of increasing investment into FTTP in the medium to long term will materialise will not be apparent for a number of years. Regardless of this, any

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regulatory changes will lead to new requirements for the information made available to Ofcom and other stakeholders through the RFS.

2.3 Ofcom's strategy leads to a need for increased information in the medium term

As noted in section 2.1, the RFS is an important tool for assessing BT's compliance with conditions in markets where it has SMP. In particular, in the past, this tool has proved valuable where Ofcom had set charge controls to reflect costs and the RFS was closely aligned with the cost-base used to set the charge control. In these cases it was possible to assess the effectiveness of charge controls and stakeholders were able to identify potential issues through observing this data on BT's costs, revenues and profitability. Although Ofcom's proposals have moved away from cost-based charge controls in some geographies, this does not remove the need for the RFS as a tool for considering BT's compliance with both SMP regulation and ex-post competition law. However, in the absence of a clear link between remedies and BT's costs, it is less straightforward to establish the details of the reporting requirements for the RFS in terms of service detail.

Although in the absence of cost-based charge controls there will be less of a need to undertake detailed comparisons of BT's expected and actual costs for regulated products, this does not mean the overall information requirements have decreased. While Ofcom's strategy aims for de-regulation in much of the country in the long term, there is a continued need for information to ensure the effectiveness of regulatory changes, and in light of some of these changes, there is an **increased** need for information for Ofcom and other stakeholders in the medium term:

- To provide information during market review periods to monitor BT's compliance with (ex-ante) SMP conditions and (ex-post) competition law;
- To provide more transparency on cost attribution during a time of rapid change; and
- To assess the potential trade-offs between consumer protection and investment incentives and the success of Ofcom's approach to date, as set out in Frontier's paper on impact assessment[11], when determining future remedies.

2.3.1 Additional information will be required to monitor BT's behaviour and compliance given greater freedom

The ability of BT as an operator with SMP to generate supra-normal profits, even under regulation, provides a strong incentive to deter competitive entry, even at the expense of foregone profits in the short run. In the absence of robust RFS information, there is a possibility that Ofcom's strategy will not adequately meet its stated objectives, if Openreach is able to frustrate the intention to increase infrastructure based competition.

The proposed changes in the approach to regulating BT mean that there increased scope for BT to act to deter competitive entry, for example through anti-competitive

[11] https://www.ofcom.org.uk/__data/assets/pdf_file/0014/160610/vodafone-proposed-remedies-2021-26-annex.pdf

practices such as margin squeeze[12]. In light of this, there is a clear need for information requirements to provide a sufficient level of detail to allow anti-competitive behaviour to be detected, particularly given charge controls are no longer strictly required to be linked to BT's costs where competition is feasible.

It is clear that BT may have the ability to impede entry due to a number of inherent advantages:

- As the only national provider of wholesale services, access seekers who want to provide service on a national basis have no choice but to use Openreach for a significant proportion of their demand meaning it is an essential facility for these retailers;
- With BT Retail as a "tied" retailer, Openreach may be able to leverage its dominance into downstream retail markets through BT, hindering the ability of independent retailers to grow and migrate to new networks; and
- Openreach may have a number of advantages as the incumbent when customers choose to migrate to fibre services leading to higher barriers to entry.

In addition, with the boundary for separation between Openreach and the rest of BT being based on legacy wholesale access products such as local loop unbundling rather than infrastructure access, there is scope for price and non-price discrimination between internal Openreach use of infrastructure and external PIA users.

In view of the risks of exclusionary behaviour by BT in the next five years there is clearly an increased need for on-going regulatory information to monitor the development of the market.

2.3.2 Additional data will be required on a geographic basis

Ofcom plans to use geographic market definitions more widely in regulation of downstream markets (WLA and BCMR) going forwards, as set out in its Strategic Policy Position.

The number of rivals now and prospectively in the future would largely determine the extent of regulation, with competitive areas being unregulated and Ofcom moving away from cost-based charge controls for prospectively competitive areas. In 'non-competitive' areas, Ofcom plans to introduce utility style 'RAB' regulation allowing Openreach to pass through the cost of FTTP roll-out in higher wholesale prices.

In order to set this RAB regulation, there will be a need for detailed cost information for non-competitive areas, which must be separated from prospectively and competitive areas. As such the granularity requirements of data (on a geographic basis) will be greater and different to the current regulation, where geographical differentiation is limited.

The analysis for classifying the extent of competition in each area is largely based on the assumption that the presence of networks acts as a competitive constraint for BT. Ofcom will however need to assess competitive outcomes in these separate

[12] Where wholesale and retail prices of a vertically integrated operator are set such that a rival cannot earn a positive margin when relying on wholesale inputs – this can occur either through high wholesale prices or low retail prices.

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geographic areas to assess whether this approach has been appropriate, and to determine market definition in future market reviews. In order to do this, Ofcom will require more cost and revenue data from BT on a geographic basis than was previously necessary when (for the most part) national geographic markets were defined.

2.3.3 Additional data will be required to assess the effectiveness of the new regulatory approach

With the introduction of regulation that aims to manage a trade-off between short-term consumer protection and medium to long term investment incentives, there is a need for Ofcom (and a need for stakeholders) to assess the costs (borne both by customers and access seekers to some extent) and the payoffs (in the form of increased network investment) from this approach. This is necessary as Ofcom has an overarching mandate to secure the best outcome for end-users, which includes:

- Ensuring availability of services;
- Encouraging competition to increase the benefits of services through greater innovation and greater efficiency;
- Reducing the overall prices paid for services; and
- Ensuring that prices paid by all groups of users reflect a fair distribution of costs.

Ofcom needs to ensure it has the information necessary to assess whether its approach is effectively delivering on this front. The outcomes of this 'trade-off' approach must be closely monitored for reasonableness and effectiveness in order to pick up any unintended consequences for competitive conditions in the market. Ofcom must consider, on an on-going basis, costs and benefits of the regulatory approach, in order to assess the need for changes in any future market reviews. In particular, Ofcom should consider:

- the costs to different groups of consumers from any intended or unintended consequences of its strategy, including the expected higher retail prices and any reduction in access-based competition;
- the quantum of increased investment that arises from the new regulatory strategy; and
- the benefits that actually materialise from any additional investment and where these benefits arise.

At a minimum, the RFS should provide some of the necessary tools to allow these costs and benefits to be evaluated by Ofcom and stakeholders on an on-going basis.

3 THE EXTENT TO WHICH THE CURRENT PROPOSALS FOR RFS ARE FIT FOR PURPOSE

The previous section highlighted that there is a need for additional (and different) information to be provided for Ofcom and stakeholders to continue to effectively monitor the compliance of BT with SMP conditions and competition law and make informed decisions for future regulation.

Ofcom considers that effective reporting should have the following attributes[13]:

- Relevance – the information needs to answer the right questions, in the right way and at the right time.
- Reliability – the underlying data must be reliable, suitable rules for treatment of data must be chosen and those rules need to be followed.
- Transparency – the basis of preparation should be understood by the users of the reports and the presentation of the data should be clear.
- Proportionality – the reporting requirements should be proportionate to the benefits.

The new market review periods will last five years and will increase the level of deregulation and hence risk of adverse outcomes due to forecast error. This means it will be even more important to ensure that Ofcom (and other stakeholders) have access to the information needed, at the right level of granularity, to monitor that regulation is leading to intended outcomes. If not, there is a risk that when it comes to reviewing the market in five years' time, not only will consumers have been harmed in the run-up to the review, but also that Ofcom will not have the information needed to assess the extent of the harm and the best way to mitigate the harm.

There is therefore a clear need to ensure that the RFS is fit for purpose as Ofcom's regulatory approach evolves. Ofcom has recognised this to some degree, with some proposals for change to the format and content of the RFS having been presented to the industry and/or consulted on. In this section, we consider the extent to which Ofcom's proposals for the RFS are sufficient to meet the future needs and highlight the outstanding gaps in the information provided through the RFS, setting out a number of proposals that we believe would help ensure the RFS is fit for purpose going forwards.

We consider that in the absence of these proposed reporting requirements, there is a risk that the RFS will not enable the effective monitoring of BT's compliance with SMP conditions and this could result in harm to consumers. Therefore we consider that these proposals not only support Ofcom's aims of ensuring the reporting is relevant, reliable and transparent but are also proportionate to the benefits. It should also be noted that there may be wider benefits from the provision of this information beyond the narrow requirement to allow assessment of compliance with SMP conditions. For example, this information may be valuable as a means of providing cost benchmarking information necessary to give

[13] https://www.ofcom.org.uk/__data/assets/pdf_file/0025/190726/consultation-bt-regulatory-reporting.pdf

investors the confidence to invest in full-fibre networks (whilst also providing policymakers with accurate information to forecast investment) – this may be important if Ofcom's vision of increased network competition is to be achieved.

3.1 The scope of Ofcom's changes is insufficient

Ofcom has made a number of suggested changes to the form and content of the RFS going forwards. For example, Ofcom has proposed:

- The inclusion of some information on demand for external PIA;
- Changes to the attribution of wholesale current costs to allow a more "user friendly" cost split and a move to providing a breakdown of service costs by category rather than component;
- A quantification of the main attribution methods for operating costs; and
- The removal of the adjusted financial performance summary, given the move away from cost-based charge controls.

With the exception of the inclusion of information on external PIA usage, the suggested changes largely focus on presentational issues for the data currently provided in the RFS, 'tidying up' through changes to format and the removal of now redundant information. Whilst these changes are positive, the proposals so far have not fully addressed the challenges identified above. More fundamental restructuring will be necessary for the RFS to be fit for purpose given the changes in the market and regulatory strategy.

3.2 Enhancements are necessary to make the RFS fit for purpose

Significant market and regulatory changes are taking place that will require further changes to the content of the RFS to ensure it is fit for purpose:

- The expected growth in the use of PIA;
- The transition to full-fibre networks;
- Regulation varying by geographic markets; and
- A move away from cost-based charge controls and hence an increased risk of anti-competitive behaviour by BT.

Below we discuss each of these areas in turn, identifying omissions in the RFS at present (including proposed changes to the RFS presented by Ofcom to date) and set out recommendations for enhancements to the content of the RFS.

Whilst the WLA and BCMR markets are regulated separately, with distinct regulations in place in these markets, many of the areas discussed below are relevant for both markets. Since Ofcom intends for a converged approach to downstream regulation from 2021, it is clear that the RFS will need to adapt to fit the common approach across these two markets.

3.2.1 The use of PIA

The RFS in their current form do not include specific information on PIA. As regulation becomes more focussed around access to physical infrastructure and away from regulating access to active network products it is important that information relating to the use (both by BT and externally) and costs of infrastructure are included in the RFS. As discussed above, in recognition of this, Ofcom has already proposed the inclusion of some data on PIA in the RFS.

However, given the critical role that PIA is assumed to play in the future market and the fact that BT infrastructure is expected to be an enduring bottleneck even after alternative fibre networks have rolled out (using PIA), robust information on the costs and usage of PIA will be critical. This will enable both cost orientation of PIA prices and non-discrimination between external use of PIA and equivalent usage by BT.

Costing of PIA services

Ofcom has recognised that BT has an incentive to set PIA prices at an excessive level:

"Given our conclusion that BT has SMP in the WLA market, it is likely that BT would have the incentive and ability to set excessively high prices for PIA. In particular:

• There is a risk that BT sets excessive prices to maximise the profit it earns from providing access to its physical infrastructure.

• There is a risk that BT sets excessively high prices to increase the overall cost of building a network using PIA, with the intention of preventing or limiting the emergence of further network competition by undermining the investment case for network deployment based on PIA."[14]

Given the low volumes of PIA currently, the unit costs of PIA services are not shown in the current RFS. The pricing of PIA is based on cost information contained within a model published by Ofcom with the 2018 WLA decision. However, almost all of the cost inputs were redacted in the published non-confidential model, meaning that stakeholders have little visibility of the robustness of these calculations.

As PIA volumes increase, we would expect the prices to be based on the current regulatory asset value of the underlying assets as shown in the RFS. This would ensure that BT had certainty that PIA prices allowed full cost recovery, including a return on capital employed. It would also ensure that access seekers were not charged excessive prices which would be passed on to consumers through higher retail prices.

Compliance with non-discrimination requirements

Whilst there remains a lack of clarity on PIA pricing, it is important to ensure that BT's compliance with Ofcom's PIA access requirements for "no undue

[14] 2018 Wholesale Local Access Market Review: Statement – Volume 3 Physical infrastructure access remedy Paragraph 5.8

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discrimination" can be monitored through the information provided in the RFS. In the 2018 WLA statement, Ofcom stated that there would be a requirement for:

*"**Access on equivalent terms to ensure a level playing field.** BT is subject to a 'no undue discrimination' condition, requiring strict equivalence in respect of all processes and sub-products that contribute to the supply and consumption of duct access, unless BT can demonstrate that a difference is justified. We will support these measures through ongoing monitoring to ensure that they are effective."*[15]

In this statement Ofcom recognised the risks that BT would be able to distort downstream competition in the absence of a non-discrimination requirement, as we described in section 2.3.1 above. Ofcom stated that a level playing field was necessary to ensure the PIA remedy is effective. In the absence of non-discrimination requirements for PIA, there is the possibility of foreclosure both in the market for the provision of active wholesale broadband products, and further downstream at the retail level, with margin squeeze possible if BT received favourable conditions. As such it is important that both internal and external PIA costs and revenues are shown and can be compared to downstream active products. In the same statement, Ofcom further highlighted the relevance of the RFS for monitoring compliance with these requirements, stating:

*"We are putting in place an ongoing monitoring programme, **supported by financial reporting requirements on BT,** to ensure these measures are effective, and create an environment in which competing providers have confidence to make very substantial capital investments relying on access to BT's duct and pole network."* [Emphasis added.]

While Ofcom has not decided to implement a strict EOI requirement on Openreach's internal use of PIA, an 'Equivalence in Pricing' obligation was imposed:

"Under this non-discrimination obligation, when Openreach charges itself internal transfer charges, it must do so in a manner that is consistent with the charging principles that it applies to determine charges faced by telecoms providers using PIA, to the extent that a different approach cannot be justified. These internal transfer charges would then be relevant to any subsequent assessment of whether Openreach's prices for the relevant downstream services are appropriate. Our decisions on cost reporting (set out in Annex 8) will support our ability to monitor whether Openreach is complying with this aspect of the non-discrimination obligation."[16]

In order for this analysis to take place, a greater level of detail on both external and internal PIA costs and revenues, and continued reporting of downstream active product cost and revenues would be required to not only measure the effectiveness of regulations to encourage use of PIA for the delivery of full-fibre networks, but also to ensure anticompetitive behaviour is not occurring through BT's activities at any point in the value chain.

It is necessary to estimate the 'internal' transfer charges 'incurred' by BT directly when using passive infrastructure, alongside the costs of delivering 'external' PIA,

[15] https://www.ofcom.org.uk/__data/assets/pdf_file/0023/112469/wla-statement-vol-3.pdf

[16] Ibid. Paragraph 3.55

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compared to external PIA charges (so that compliance with the 'no undue discrimination' condition can be assessed and to ensure PIA charges are set at an appropriate level).

In addition, some information on active services costs and revenues (including which passive costs feed into active services) will continue to be necessary, as this information will be important alongside information about PIA costs, in order to assess whether anti-competitive behaviour (in the form of margin squeeze for example) is taking place. For example, in a prospectively competitive area (Area 2 as described in Section 3.2.3 below), BT could engage in margin squeeze by charging a combination of a PIA price and active product price that mean a competitor cannot compete effectively by using PIA. This may push competitors to continue to rely on BT's active products rather than investing in their own infrastructure or make the competitor uncompetitive at the retail level. This can only be detected if BT's revenues and costs are known at each level of the value chain.

The principles of 'no undue discrimination' were again reiterated by Ofcom in the 2019 statement[17]. Whilst Ofcom recognised that the requirement for 'non-discrimination' might be very costly or disruptive for specific services, they nevertheless reiterated that the principle of 'equivalence of inputs' should be applied to the extent possible:

"We therefore have decided to impose a no undue discrimination SMP condition on BT in relation to network access. Although this falls short of the strict equivalence of EOI, we have decided that that in order to ensure a level playing field in downstream markets, this non-discrimination requirement should be as close to EOI as possible. Therefore, we have decided to interpret the no undue discrimination SMP condition in relation to network access as requiring strict equivalence in respect of all processes and sub-products that contribute to the supply and consumption of network access, with discrimination permitted only in cases where BT demonstrates that a difference in respect of a specific process step or sub-product is justified."

This was further reiterated to also translate to the costs/price paid by those purchasing PIA:

"an effective network access remedy requires that BT is prevented from discriminating, on both a price and non-price basis."

Ofcom highlighted in the 2019 statement that the RFS would be key in allowing evidence to be collected for any non-compliance:

"Furthermore, we will carefully consider, and where appropriate investigate, any evidence of non-compliance. This evidence could come from a range of sources, such as information submitted by our stakeholders, our regular review of BT's Regulatory Financial Statements, information gathered as part of our market reviews, and through use of our investigatory powers."

[17] https://www.ofcom.org.uk/__data/assets/pdf_file/0027/154593/volume-1-pimr-final-statement.pdf

Ofcom's current proposals for PIA in the RFS

Ofcom's current proposals for PIA information to be included in the RFS are not sufficient to cover the extent of the requirements we set out above which are necessary to make the RFS fit for purpose going forwards.

Firstly, the data to be provided appears insufficient. The proposals for 2019/20 will include only limited PIA data. This is justified on the assumption that volumes will be very low in this timeframe. The intention is for fuller data on volumes of external PIA to be available in the RFS from April 2021. However:

- The proposed information is only likely to provide information on the size of the external PIA market – there is no information on the costs of providing PIA nor on 'no undue discrimination' as internal and external demand are not shown on a consistent basis in terms of costs or volumes;
- It will be too late for this data to be used to inform decisions or regulation for the next access review setting regulation from 2021/22. This risks the regulatory approach being found to be ineffective in promoting use of PIA and roll-out of full-fibre networks. Since the review period will be extended to 5 years, the implications of the regulatory approach taken in the next access review will be long-lasting.

As a result, the information and structure of data provided on both internal and external PIA use needs to be considered and amended further in order for this analysis to be possible going forwards.

RECOMMENDATIONS

A greater level of detail and clarity on BT's external and internal PIA costs, revenues and profitability in the RFS is required. In addition, continued reporting of downstream active product cost and revenues and profitability is required to not only measure the effectiveness of regulations to encourage use of PIA for the delivery of full-fibre networks, but also to ensure anti-competitive behaviour is not occurring through BT's activities at any point in the value chain.

As a result, information on both active and passive costs and revenues will be required not only for geographic areas without competition (Area 3) for the assessment and setting of charge controls, but also in areas that are prospectively competitive (Area 2) for the monitoring of compliance with 'no undue discrimination' requirements and for the detection of anti-competitive behaviour.

3.2.2 Migration to full-fibre networks

Ofcom's regulatory approach is focussed on encouraging infrastructure competition by incentivising the roll-out of competing FTTH networks. As described in Section 2, there is an expectation of migration away from the legacy copper network to full-fibre networks in the medium term. Ofcom's incentive approach leads to a trade-off between short-run consumer outcomes, and medium to long run gains from FTTH. As a result, understanding the costs and revenues associated with FTTH roll out is essential for assessing the effectiveness of Ofcom's approach to incentivise this rollout.

It will therefore continue to be important for Ofcom and stakeholders to be able to distinguish between BT's costs and revenues for different customer groups, for example distinguishing between the costs of new full-fibre roll out to serve households and the ongoing costs of existing fibre networks that serve businesses/mobile operators.

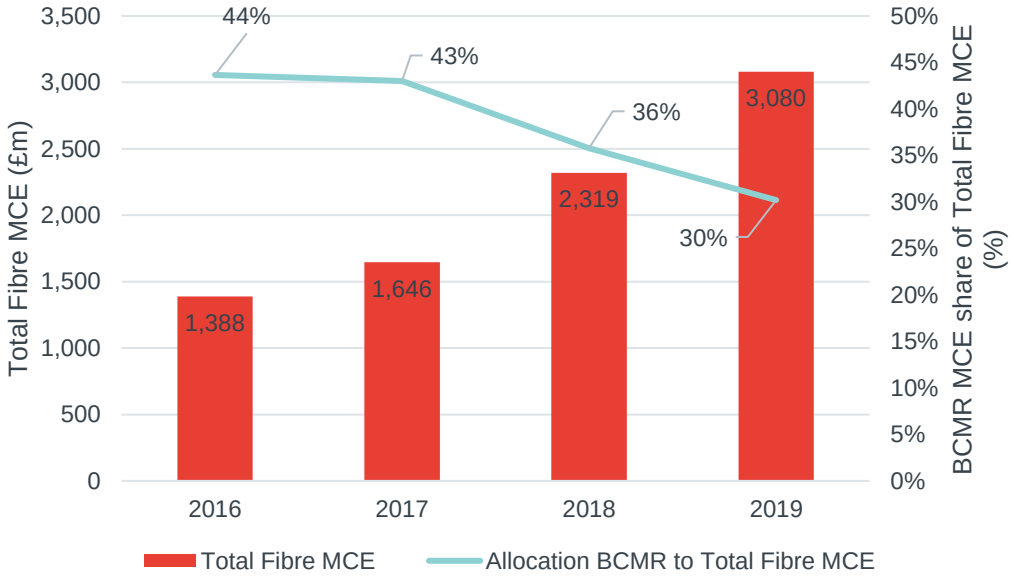
The expectation by Ofcom is that in the long run there will be convergence between WLA and Business Connectivity markets as FTTP networks can be used to serve both mass-market customers and offer business connectivity to enterprises, as well as backhaul services to mobile operators. It remains to be seen to what extent convergence will occur and how quickly this will take place. Some services (such as ethernet) are unlikely to be converged in the short term and the degree of convergence is expected to differ geographically, as recognised by Ofcom.

However, since different groups of consumers will face different benefits of mass-market FTTP rollout, it is important that the impact on these groups can be captured effectively by examining both costs and revenues for these different groups in a way which reflects underlying cost-causality. As a result it is important that the RFS allows for the assessment of costs outcomes for both households and businesses individually whilst also taking account of differences across geographies, both in a scenario where convergence materialises as anticipated by Ofcom and a scenario where this happens to a significantly lesser degree. This means that the allocation methodology for costs such as fibre access between households and business customers will remain important.

The analysis we have undertaken reviewing the most recent RFS (which is described in more detail in the Annex) already indicates that the increase in fibre access costs due to FTTH roll-out by Openreach/BT are not appropriately allocated between WLA and Business connectivity markets – as Business Connectivity fibre access costs have increased significantly due to the current methodology causing 'leakage' from FTTH roll-out into Business Connectivity services whose end customers derive no benefits from the FTTH roll out.

This is shown in the two charts below. Firstly, fibre MCE has grown significantly, which is largely driven by FTTH roll-out.

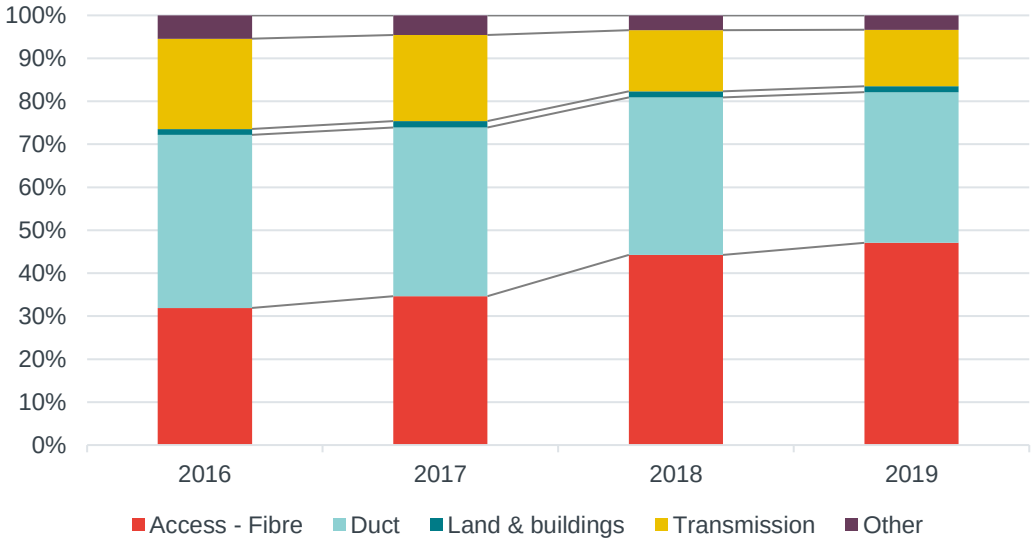
Figure 3 Total fibre MCE and BCMR allocation 2016-2019



Source: Frontier Economics calculations; BT RFS 2017-2019

However, as shown below the fibre access costs for BCMR have grown significantly as a proportion of asset costs, suggesting that some of these FTTH costs have 'leaked' into BCMR.

Figure 4 Asset share of BCMR MCE 2016-2019



Source: Frontier Economics calculations; BT RFS 2017-2019

This example illustrates both that:

- The current methodology, while it may have been appropriate in the past, no longer accurately captures causality, with the significant increases in total fibre costs driven to a large extent by FTTH roll-out. Both the costs and revenues associated with this must be appropriately allocated between different

customer groups so that the effectiveness of Ofcom's regulatory approach can be assessed.

- It is necessary that sufficient information on how the RFS is compiled is also provided in order to allow for issues, such as the one identified above, to be detected and to ensure that allocation methodologies are reasonable in practice, particularly in light of how this information will be used.

As a result, Ofcom and BT need to have a forward looking-strategy for addressing changes in cost structures, rather than making reactive incremental changes to existing processes and data.

RECOMMENDATIONS

A clear approach is necessary for the allocation of costs and revenues between different services during a transition to converged networks (for example distinguishing between FTTP and full-fibre for business connectivity and mobile backhaul). Given the uncertainty regarding the extent to which converged networks will materialise (and the differences in the degree of convergence geographically), it is important that the RFS allows for the assessment of costs and outcomes for both households and businesses individually whilst also taking account of differences across geographies, both in a scenario where convergence materialises as anticipated by Ofcom and a scenario where this happens to a significantly lesser degree. This approach should take into account the requirements for this data to assess impacts on different customer groups and of Ofcom's specific regulatory policies for particular markets and/or products.

3.2.3 A move away from cost-based price controls for some geographies

Ofcom is proposing to differentiate geographic markets for wholesale access services into three groupings:

- Area 1. Areas which are deemed competitive due to a number of competing infrastructure based operators, where no regulation will be imposed;
- Area 2. Areas which are prospectively competitive due to an existing infrastructure based rival to BT and/or conditions which make entry by infrastructure based operators likely, where BT will have increased pricing flexibility; and
- Area 3. Areas where there are no current infrastructure based operators and entry is unlikely due to barriers to entry such as low population density, where cost-based charge controls will be imposed and some rollout will be subsidised.

Underlying this differentiation is an implicit assumption that network unit costs (e.g. per home passed or connected) differ significantly between geographies.

Geographic differentiation

To date, geographic differentiation in regulation has been limited to small areas, for example areas of the country where there were no LLU based operators for the

C2 General

Wholesale Broadband Access review or the Central London Area for the Business Connectivity Market Review.

The RFS has shown detail for only those markets that are regulated but the approach to taking account of cost differences between different geographic markets appears to be relatively simple, for example usage factors are used to allocate fibre costs between the CLA and other markets for Ethernet Services. As the regulated market for the BCMR is most of the country, any inaccuracy due to this approach is likely to have a relatively small impact on the costs in the regulated market.

As competition develops, the three categories of geographic market may have broadly similar scale in terms of numbers of premises, but differ significantly in both cost per unit and the regulatory approach. This is likely to require a more sophisticated approach to cost attribution between geographies to ensure that regulation is appropriate, for example that cost-based charge controls in Category 3 areas reflect actual costs and that where Ofcom partially de-regulates (Category 3), the impact of this on downstream markets can be assessed (as mentioned above).

Whilst it may be expected that different information requirements are needed depending on the geographic category, in reality, similar information is likely to be required across geographic areas, albeit for different purposes.

In the different geographic markets it will be necessary to:

1. Continue to understand costs, revenues and profitability for active products, including which passive costs feed into active services (so that costs, prices and competitive constraints can be evaluated); and
2. Observe the internal transfer charges 'incurred' by BT directly, alongside the costs of delivering PIA, and external PIA charges/revenues (so that compliance with the 'no undue discrimination' condition can be assessed and to ensure PIA charges are set at an appropriate level).

The combination of the information in 1 and 2 allows for the detection of anti-competitive behaviour, such as margin squeeze, at different levels of the value chain. Whilst the information in 1 above will be necessary in geographic areas where no competition is anticipated (Area 3) to inform and assess the appropriate level for charge controls, this information will also be necessary in prospectively competitive areas (Area 2), where the use of PIA is expected, as this information in combination with 2 can be used to evaluate BT's compliance with no-undue discrimination conditions and to detect any anti-competitive behaviour. In areas deemed competitive (Area 1) this information regarding profitability can also inform whether the competitive constraint provided by alternative networks is effective.

Product detail

In areas determined by Ofcom to be prospectively competitive (Area 2), which are expected to cover the majority of households, anchor pricing is intended to increase incentives for investment into own networks by allowing prices for other services to increase above cost. However, in order to assess whether the anchor pricing mechanism is effective, it is necessary to observe data for a wide range of products, not just those directly charge controlled.

C2 General

However, the RFS in its current form does not allow an assessment of whether these regulatory choices have been or will be effective. More specifically, the costs and profitability of most individual services within the WLA market are not generally shown, but are combined with other services and there is limited detail on geographic markets.

In the RFS to date, detailed cost and revenue information has only been provided on those products directly under charge control e.g. the 40/10 GEA product and MPF in the WLA market. As shown in the figure below, an excerpt from the 2019 RFS, in contrast to the level of detail on the charge controlled GEA 40/10 product, only one line is provided for "GEA Other Bandwidth Rentals" which collectively captures all other FTTC and FTTP products. This means that costs and revenues for FTTP and FTTC cannot be considered separately. The importance of some of the services in this composite category is demonstrated by the fact that this forms a significant proportion of internal revenues (57%) and costs (54%).

Similarly, whilst significant detail is provided on the charge-controlled MPF product at a detailed service level, a single composite category is provided capturing 1) MPF variants which bundle premium services, such as enhanced care; 2) Shared Metallic Path facility (SMPF), a service where a copper line is shared by two CPs; and 3) GEA services – primarily connection fees for GEA services of higher bandwidth than the 40/10 charge controlled service. This category again forms a significant proportion of internal and external costs and revenues.

Figure 5 WLA summary – BT's RFS 2019

In contrast to the level of detail on the GEA 40/10 services, only one line is provided for "GEA Other Bandwidth Rentals" which collectively captures all other FTTC and FTTP products and forms a significant proportion of internal revenues and costs.

The "Other WLA" category includes MPF variants, SMPF and primary connection fees for GEA services of a higher bandwidth than the 40/10 GEA product. This again forms a significant proportion of revenues and costs.

WLA Summary

For the year ended 31 March 2019

Detailed service analysis	Internal Revenue £m	External Revenue £m	Total Revenue £m	Internal Volume	External Volume	Measure	Average Internal Price £	Average External Price £	Internal FAC £m	External FAC £m	Total FAC £m
Service											
GEA FTTC 40/10 Rentals	86.4	217.4	303.8	1,251,369	3,492,445	lines	69.06	62.24	62.1	174.6	236.7
GEA Other 40/10 Rentals	3.6	0.0	3.6	25,401	77	lines	142.54	126.54	10.5	0.0	10.5
GEA Other Bandwidth Rentals	492.3	86.4	578.7	5,173,077	1,037,874	lines	95.17	83.29	414.6	52.3	466.9
GEA FTTC 40/10 PCP Only Install	22.0	67.6	89.6	469,480	1,454,209	conns	46.96	46.48	28.6	92.3	120.9
GEA FTTC 40/10 PCP Start of Stopped Line	0.2	0.6	0.8	49,649	144,851	conns	4.63	4.14	0.3	0.9	1.2
GEA FTTP 40/10 Connections Voice and Data	1.5	-	1.5	16,829	-	conns	92.00	-	0.1	-	0.1
GEA FTTP 40/10 Connections Transitions	0.9	-	0.9	9,540	-	conns	92.00	-	2.2	-	2.2
GEA Cablelink 1 Gbps Connections	1.6	2.4	4.0	3,062	4,587	conns	521.00	521.00	1.8	2.9	4.7
GEA Cablelink 10 Gbps Connections	3.8	1.9	5.7	3,625	1,851	conns	1,042.00	1,042.00	3.2	1.8	5.0
GEA Bandwidth Modify to 40/10	0.9	0.3	1.2	129,882	46,810	amendments	7.26	7.26	0.2	0.1	0.3
GEA VLAN Moves Applied to Cablelink	21.5	1.0	22.5	2,957,246	144,519	amendments	7.26	7.26	3.8	0.2	4.0
GEA 40/10 Cancel/Amend/Modify – CRD	2.2	1.8	4.0	299,698	247,662	amendments	7.26	7.26	0.4	0.3	0.7
GEA 40/10 Cancel/Amend/Modify – Regrades	2.2	0.1	2.3	304,564	15,567	amendments	7.26	7.26	0.4	0.0	0.4
GEA CP to CP Migrations	1.5	2.2	3.7	332,268	475,690	amendments	4.63	4.63	1.9	2.9	4.8
GEA Superfast Visit Assure	16.8	17.1	33.9	129,263	131,213	amendments	130.00	130.00	18.2	18.4	36.6
MPF Rentals (SML1)	0.2	694.1	694.3	2,492	8,118,587	lines	85.51	85.49	0.2	725.0	725.2
MPF New Provides	0.5	53.4	53.9	12,365	1,584,574	conns	39.81	33.73	0.3	46.5	46.8
MPF Single Migrations	-	16.6	16.6	-	622,668	conns	-	26.73	-	16.6	16.6
MPF Bulk Migrations	-	3.0	3.0	-	146,751	conns	-	20.15	-	3.7	3.7
MPF Cancellation of Orders	0.1	2.1	2.2	14,597	292,257	cancellations	7.26	7.26	0.0	0.5	0.5
MPF Amend Orders	-	0.6	0.6	-	88,331	amendments	-	7.26	-	0.1	0.1
MPF Standard Line Test	-	0.0	0.0	-	436	tests	-	4.05	-	0.0	0.0
Co-mingling New Provide and Rentals	-	51.1	51.1	(ux)	(ux)	(ux)	(sx)	(sx)	-	56.9	56.9
Tie Cables	13.0	5.1	18.1	(ux)	(ux)	(ux)	(sx)	(sx)	5.5	3.6	9.1
Hard Ceases	6.7	16.0	22.7	371,702	991,646	ceases	17.93	16.09	5.2	13.6	18.8
Other MPF Ancillaries	3.6	8.1	11.7	102,332	271,716	ancillaries	35.42	29.98	0.4	1.4	1.8
Special Fault Investigations	12.8	10.8	23.6	(ux)	(ux)	(ux)	(sx)	(sx)	22.6	18.7	41.3
Time Related Charges	6.3	22.6	28.9	(ux)	(ux)	(ux)	(sx)	(sx)	7.5	27.1	34.6
Abortive Visit Charges	3.8	6.9	10.7	44,117	78,713	visits	85.80	87.30	2.2	3.9	6.1
Other WLA	166.9	224.0	390.9	(ux)	(ux)	(ux)	(sx)	(sx)	192.2	215.9	408.1
WLA IFRS 15	(3.2)	1.8	(1.4)	(ux)	(ux)	(ux)	(sx)	(sx)	(0.4)	(0.3)	(0.7)
WLA SLG	(10.3)	(20.3)	(30.6)	(ux)	(ux)	(ux)	(sx)	(sx)	(10.3)	(20.4)	(30.7)
Rounding	0.2	0.2	0.4						(0.1)	(0.3)	(0.4)
Total WLA	**858.0**	**1,494.9**	**2,352.9**						**773.6**	**1,459.2**	**2,232.8**

Source: BT's RFS 2019

The lack of information on the costs and profitability of products which are not directly charge controlled means that:

- There will be no transparency on the degree to which the 'fair bet' principle has been effective. For example, at the time of the introduction of charge control on VULA, Ofcom estimated that Openreach's actual return on its superfast investments would be around 15%. However, it is not possible for external stakeholders to assess if this has been the case, due to lack of information on VULA returns over time and the treatment of costs such as BDUK subsidies;

- There is no clarity in whether charge controlling only the 40/10 GEA product is effective in constraining Openreach, or the degree to which increased pricing flexibility will impact on consumers. In particular, the costs and returns on the other GEA-FTTC products cannot be clearly identified as they are included with other services, including FTTP services;
- There is no information on volumes including the relative importance of external and internal demand for FTTC and FTTP services, which could provide be an indicator of the degree to which non-discrimination between BT downstream divisions and access seekers is effective, other than for the 40/10 services.

Going forwards, price freezing charge controls on some products means that there will no longer be an on-going requirement for prices to be reduced in line with cost efficiencies. There is an implicit assumption that current levels are appropriate for maximising consumer interests. In order to consider the appropriateness of this on an on-going basis, it will be necessary to observe data about usage and costs of these products. This will not be possible if detailed data is not provided for a wide range of products.

RECOMMENDATIONS

Provision for and clarity on the approach and methodology to be applied for the separation of costs and revenues by geographic markets within the RFS is required.

More transparency is also necessary on how costs should be attributed by geography, and the treatment of geographically-focussed subsidies such as BDUK funding, and any funding associated with the Universal Service Obligation.

It is necessary to include in the RFS sufficient information across products for all geographic markets to allow stakeholders transparency in how costs have been allocated across markets.

3.2.4 Monitoring of BT for anti-competitive behaviour

Given the trade-off between incentivising investment and protecting consumer interests in the short run, it is critically important that sufficient information is provided to measure the effectiveness of this approach.

As highlighted in Section 2.3.1, BT may have the incentive and some increased flexibility to foreclose potential competition at different levels of the value chain. The content of the RFS must therefore be considered to ensure that sufficient information is provided across markets to allow this to be monitored. At present, the RFS in its current form does not provide sufficient detail for assessment of anti-competitive conduct (ex-post).

The gaps in information are clear across different markets, for example:

- **PIA:** As highlighted in Section **Error! Reference source not found.**, it is necessary to have information made available in the RFS about BT's own margins if it were to use PIA as an input to deliver FTTP services to detect any anti-competitive practices such as margin squeeze – for this, information on downstream services is also necessary. At present only volume data on PIA is proposed to be included in the RFS which will be insufficient for this purpose.

- **BCMR:** In the BCMR, following Ofcom's 2016 decision and the subsequent appeal, BT was not required to include information on the profitability of higher bandwidth CI access products, as BT was determined not to have (or not been proven to have) SMP in these markets. However, in 2019 BT was found to have SMP for these products. As a result:
  - Information was only included for lower margin services, meaning that the published data does not give a clear view of overall profitability for BCMR services.
  - There is no information to review whether there was evidence of anti-competitive behaviour in markets where BT was not found to have SMP, and in downstream markets, such as mobile backhaul.
- **WLA:** Similarly in the WLA market, as highlighted in section 3.2.3, the current form of the RFS only covers the 40/10 GEA product and information about remaining products is only provided at a very high level. It is therefore not possible to observe details about other specific products and detect patterns of usage costs or revenues that would allow the observation of any anti-competitive behaviour in pricing of these products. For FTTH for example, it should be possible to observe the effective price paid by access seekers and by BT's own retail arm to ensure no undue discrimination or anti-competitive behaviour is taking place. This is not possible at present as FTTH is combined with some FTTC (non 40/10 bandwidth) products.

RECOMMENDATIONS

The content of the RFS must be considered and refined to ensure that sufficient information is provided across markets and levels of the value chain to allow any potential anti-competitive behaviour (and the effectiveness of ex-ante regulation), to be monitored.

ANNEX A BCMR ATTRIBUTION ISSUES

This annex summarises issues we have identified with BT's current Regulatory Financial Statements (RFS). We have found that BT is overstating costs for BCMR services due to the attribution methodology being used. As a result, the profitability in this market is being understated. This has implications for the future regulation of the market, and lessons for the future structure and transparency of the RFS.

A.1 Introduction

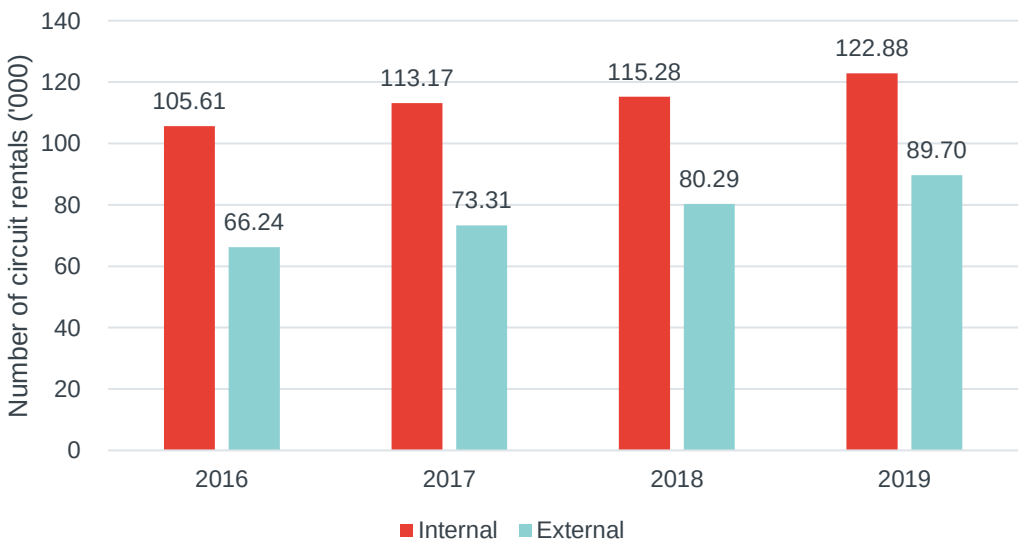
In recent years, BT's RFS have indicated that the profitability of its Business Connectivity Market (BCMR) segment – as measured by the return on Mean Capital Employed (MCE) – has fallen, down from 13% in 2017 to 3.5% return on MCE in 2019.[18] This would suggest that the prices set by BT are below cost (including the cost of capital) and that the previous charge control was, if anything, overly constraining on BT.

However, a more detailed examination of the RFS and its underlying methodologies reveals that the profitability of the BCMR segment is understated. The rest of this annex details our findings in this area.

A.2 Changes in volumes and costs

Both volumes and unit costs have increased. Volumes are shown in Figure 6, below.

Figure 6 BCMR circuit rental volumes ('000) 2016-2019



Source: Frontier Economics calculations; BT RFS 2017-2019

Note: Products considered include: EAD 1Gbps Rentals, EAD LA 1Gbps Rentals, EAD 10Mbps Rentals, EAD 100Mbps Rentals, EAD LA 10Mbps Rentals, EAD LA 100Mbps Rentals, EBD 1Gbps Rentals, WES 10Mbps Rentals, WES 100Mbps Rentals, WES 1Gbps Rentals and BES 1Gbps Rentals.

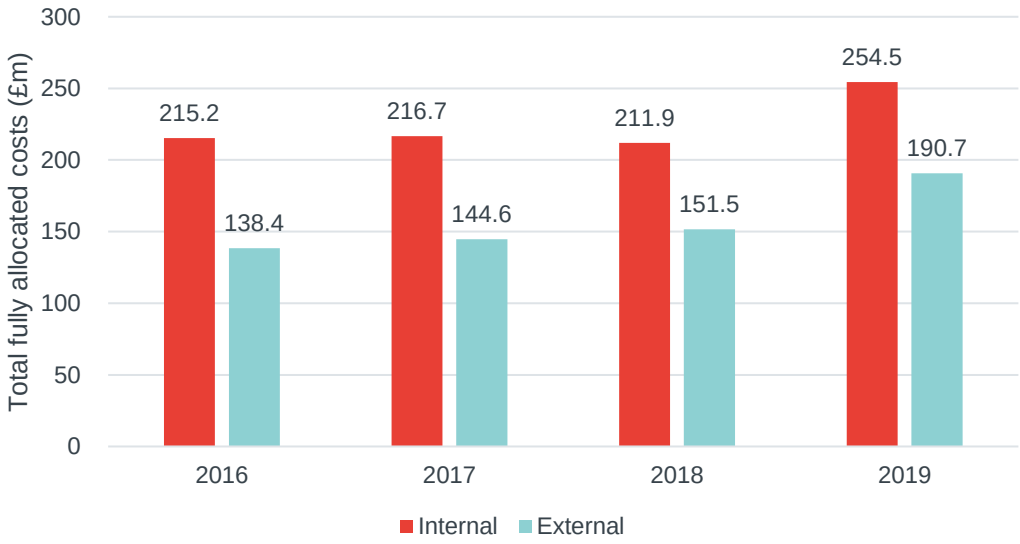
[18] Although the RFS is reported in financial years, for the purposes of this document we label financial years as if they were full calendar years for simplicity. In other words, 2015/16 is labelled as 2016, 2016/17 is 2017 and so on.

Given this significant growth in volumes we would expect unit costs to fall over the period reflecting a combination of:

- Economies of scale, as a high proportion of the costs of the fibre access network, such as ducts, is fixed;
- Technological developments, such as reductions in the unit cost of the active equipment used to 'light' the fibre used to provide services; and
- Ongoing efficiency improvements in BT's operations, which have generally more than offset any increases in input pricing.

An analysis of costs indicates that the downward trend in unit costs has been interrupted. Figure 7 below shows the costs corresponding to the demand in Figure 6. At an aggregate level, overall costs slowly increased over time from 2016 to 2018 with the rate of growth being less than the growth in demand, indicating the expected reduction in unit costs. However between 2018 and 2019 costs significantly increased, at a faster rate than overall demand, indicating an increase in unit costs.

Figure 7 BCMR fully allocated rentals costs 2016-2019



Source: Frontier Economics calculations; BT RFS 2017-2019

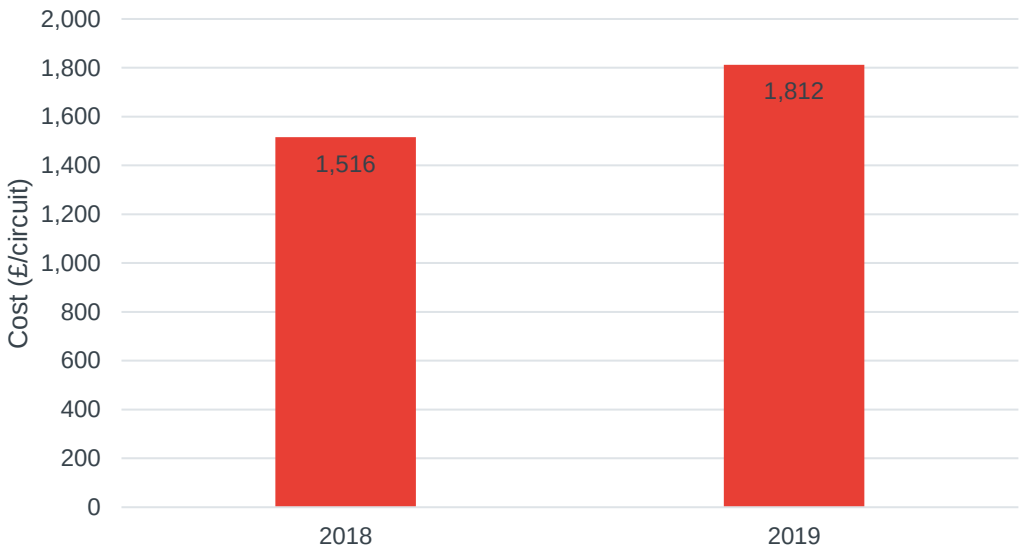
Note: Products considered include: EAD 1Gbps Rentals, EAD LA 1Gbps Rentals, EAD 10Mbps Rentals, EAD 100Mbps Rentals, EAD LA 10Mbps Rentals, EAD LA 100Mbps Rentals, EBD 1Gbps Rentals, WES 10Mbps Rentals, WES 100Mbps Rentals, WES 1Gbps Rentals, BES 1Gbps Rentals.

We therefore turn to understanding what is driving this cost increase by looking at individual unit cost stacks.

A.3 Drivers of unit costs

It appears that much of the increase in unit costs is being driven by an increase in the unit cost of the fibre and duct component. For example, between 2018 and 2019, the unit cost of the Ethernet Access Direct Fibre component (in £/circuit) increased by 20%, as illustrated in Figure 8.

Figure 8 Ethernet Access Direct Fibre (£/circuit)



Source: Frontier Economics calculations; BT RFS 2019

This is not a CCA valuation effect, as both duct and fibre cable, which make up the majority of the capital costs of this component are indexed by CPI (and general inflation remained subdued in this period). Neither can the increase be explained by increased capital expenditure to deliver these services nor a sudden increase in operational expenditure as these are mature services. As such, this increase appears to be an allocation issue.

As the fibre and duct component is largely driven by capital costs, to understand allocation effects, we look at the total MCE and its allocation between markets. Table 1 below presents the changes in allocation of MCE between 2018 and 2019. As shown, the attribution of wholesale current cost MCE for "Access – Fibre" to the BCMR markets increased by 15.1%, compared to for example "Duct" increasing by 2.2%.

Table 1 Change in BCMR MCE allocation

	2018 (£m)	2019 (£m)	2018-2019 Difference (£m)	2018-2019 Difference (%)
Access – Fibre	808	930	122	15.1%
Duct	678	693	15	2.2%
Land & Buildings	26	27	1	3.8%
Transmission	268	260	-8	-3.0%
Other	63	66	3	4.8%
Total MCE	1838	1980	142	7.7%

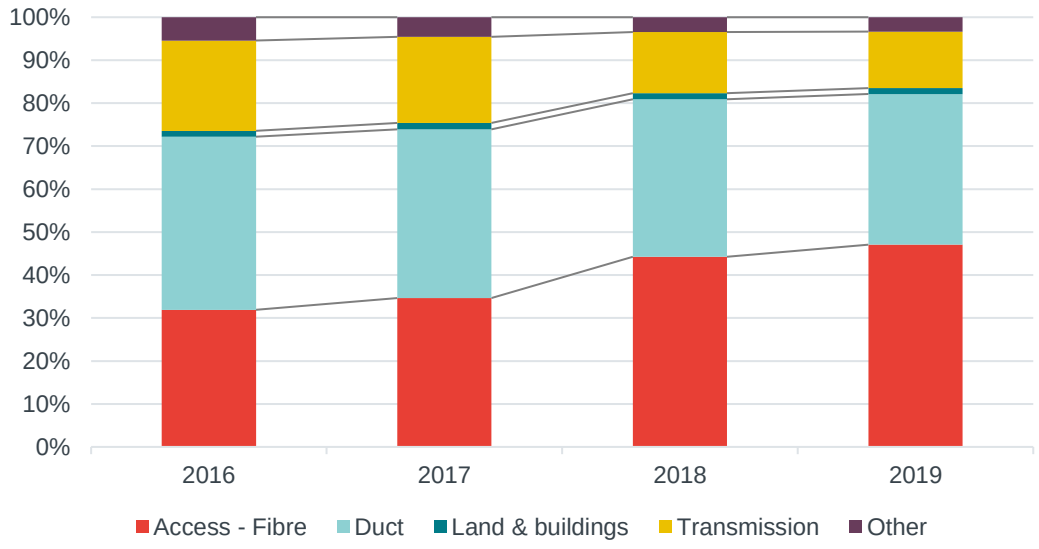
Source: Frontier Economics calculations; BT RFS 2019

It is clear that the allocation of access fibre to BCMR services has been driving the cost increase.

Figure 9 below illustrates the share of MCE by asset type for the BCMR markets. Fibre's share increases from 32% of MCE in 2016 to 47% in 2019, while duct's share falls from 41% to 35%. There are no obvious technical or economic

developments which would lead to such a rapid change in the cost structure for the provision of BCMR services over this period.

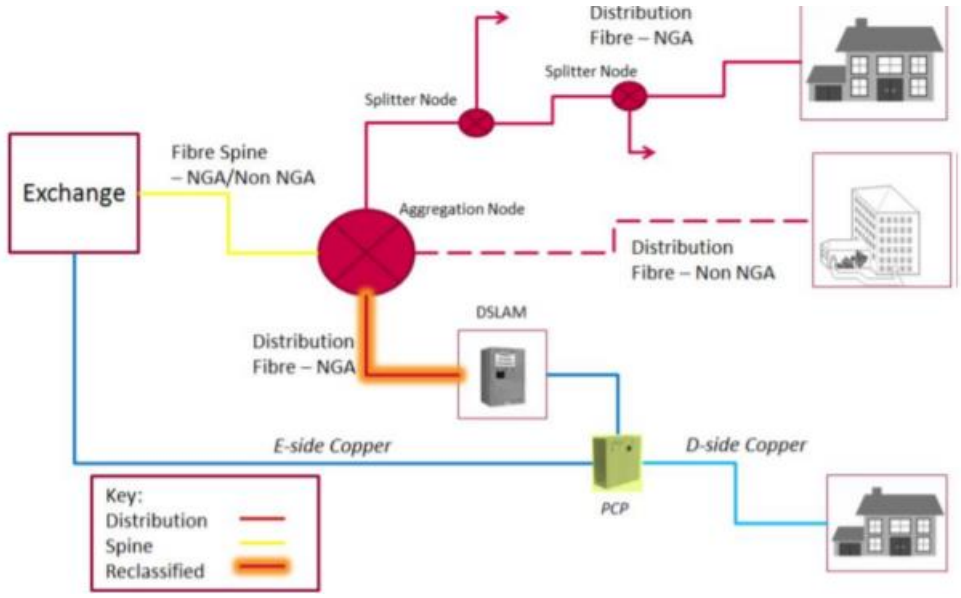
Figure 9 Asset share of BCMR MCE 2016-2019



Source: Frontier Economics calculations; BT RFS 2017-2019

One development in a related market during this period has been a significant increase in the roll out of fibre in the access network to support consumer FTTP. BT's AMD shows that BCMR services and consumer FTTC and FTTH services share common spine fibre cable.

Figure 10 BT Spine and distribution cable



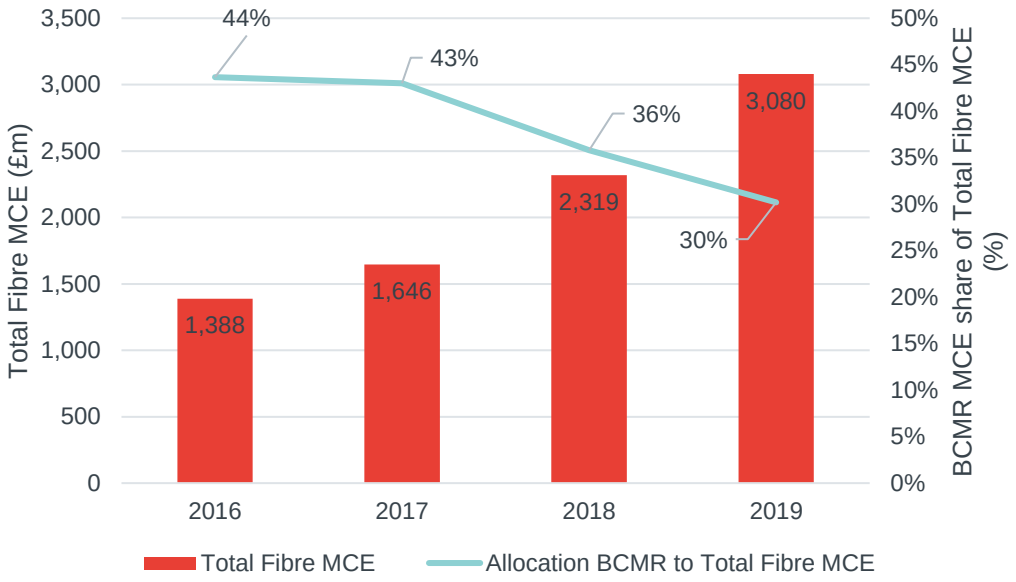
Source: BT AMD 2019

Note:

The increase in fibre for mass market services is shown by the increase in Fibre MCE which has increased rapidly in the last two years. However this should, if anything, reduce absolute fibre costs attributed to the BCMR due to economies of

scope where both mass market and consumer products can be delivered over common fibre.

Figure 11 Total fibre MCE and BCMR allocation 2016-2019



Source: Frontier Economics calculations; BT RFS 2017-2019

We turn to look at the allocation of BCMR as a share of total fibre MCE. While overall fibre costs – as measured by total fibre MCE – have increased, as Figure 8 shows, BCMR's fibre costs as a share of total fibre costs has decreased from 44% in 2016 to 30% in 2019. However, this decrease has not been as rapid as would be expected given growth in fibre MCE is predominantly driven by investment in non-BCMR residential FTTP.

This evidence leads us to conclude that some of the increased access fibre cost driven by WLA (FTTP) investment has 'leaked' into BCMR services, artificially driving up MCE and hence driving down the latter's returns to MCE. To understand why this may be the case, we now look at how the cost allocation of fibre between markets works.

A.4 Cost allocation

The cost allocation of access fibre has evolved over recent years following Cartesian's BT Cost Attribution Review prepared for Ofcom.[19] This report reviewed the overall cost allocation methodology used for BT.

Section 6.2.8 of the Cartesian report covers the methodology used to allocate services between business services and residential ('NGA') service. The underlying issue is that NGA does not have its own class of work ('CoW') which would allow the cost for consumer FTTP to be separated from BCMR. The section details the fibre Gross Replacement Cost (GRC) method used. Cartesian finds that

[19] https://www.ofcom.org.uk/__data/assets/pdf_file/0025/83482/ofcom_bt_cost_attribution_review_final_report.pdf

"*[t]he [GRC] methodology is not consistent with other approaches used by BT to apportion fibre-related costs*". Moreover, Cartesian notes "*concerns regarding accuracy due to large, unexplained changes in input parameters*" and in the accuracy of the model logic. Finally, the report indicates that "*[t]he base for apportioning operational costs does not appear causal*".

BT modified its allocation methodology in 2018 following the Cartesian review. This resulted in changes to both the allocations and the attribution methodology used.

For 'distribution fibre' two changes were made:

- Separate attribution methods were introduced for different types of cost, i.e.. balance sheet items (MCE) and operating costs;
- The cost allocations were refined with using allocation drivers that better reflected causality, e.g. NRC rather than GRC for balance sheet items.

This approach appears to better reflect causality, as using GRC to allocation balance sheet items which are dominated by NRC, could lead to a biased allocation if the average age of cable and hence NRC:GRC ratio differed between different groups of customers, which is likely to be the case for NGA and BCMR cables.

For 'spine fibre' there was no similar separation of different types of cost types with a single methodology being used for both balance sheet items and operating costs, despite the issues identified in the Cartesian report.

However, the methodology was changed. In an apparently retrograde step, the allocation method was simplified. Rather than as previously being based on an estimate of GRC, which will reflect differences such as cable length and size between in the fibres/cables used by different services, the new allocation was simply based on a count of fibre pairs used across the network, which will take no account of factors such as line length.

As a result the new allocation of spine cable suffers from the issues identified in the Cartesian report with respect to a lack of causality, particularly with respect to NRC, which will vary by fibre cables depending on when each cable was brought into service. In addition the allocation takes no account of cable length or the differences in the utilisation of cables.

The over-simplified allocation of spine cable may explain much of the 'leakage' of NGA access fibre MCE into the BCMR services as BT will have started heavily rolling out spine fibre to support its FTTH roll out. Some of the resulting MCE will be allocated erroneously to BCMR which could reflect a number of factors:

- No account of the fact that BCMR cable may be heavily depreciated, meaning the NRC of cables used for BCMR will be significantly less than equivalent cables recently installed for FTTP;
- The utilisation of spine cable installed for FTTH may be low relative to that used for BCMR as FTTH roll out is still in the initial phases with additional capacity being installed for future demand;
- BCMR services are concentrated in central business districts where the line length is likely to be significantly shorter the FTTP roll out in residential areas.

To the degree that other cost attributions are dependent on this allocation, this may inflate other BCMR costs in addition to MCE.

A.5 Conclusion

Inappropriate allocations are likely to have artificially increased BCMR MCE consistently since NGA roll out began around 2010. However, the effect has been more marked in the last year due to the large growth in FTTP roll out, with the effect being more noticeable given the last charge controls have been effective in bringing BCMR prices more in line with costs.

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