Business Connectivity Market Review

TalkTalk submission

January 2019

NON-CONFIDENTIAL

1 Summary

1.1 TalkTalk believes that Ofcom's proposals for weak BCMR regulation – with prices above cost and very limited dark fibre access – are based on a fiction, which is often promoted by incumbents and their investors, that high prices will stimulate investment and benefit consumers. It is not grounded in practical reality and will not deliver the network investment that Ofcom desires and the country needs. Further, if Ofcom persists with this approach it will not only harm the case for network investment and consumers of BCMR services. It will also undermine market confidence nurtured over the last decade that Ofcom is a predictable and evidence-based regulator, committed to delivering investment and customer benefits through competition on a level playing field throughout the value chain.

1.2 This section summarises the key points of our response to Ofcom's proposed BCMR regulation. In these proposals, Ofcom has made a number of significant errors and mistakes.

1.3 TalkTalk strongly supports Ofcom's strategy to stimulate and accelerate investment in FTTP networks. FTTP networks will in time deliver meaningful benefits to many consumers through significantly faster and more reliable broadband services, and TalkTalk is playing its part in this through its FibreNation initiative. However, when Ofcom changes its regulation with the objective of creating a more pro-investment climate it must – in line with its duties – be sure that the changes will in fact promote investment, and be mindful of and protect customers' interests.

1.4 Ofcom's BCMR proposals are for a radical weakening of regulation:

- the CPI-CPI charge controls on CI / Ethernet services will allow Openreach's prices to be more than £250m or about 20% above its costs in FY20/FY21 – this is a significant departure from Ofcom's well established policy of setting prices based on Openreach's costs;
- Dark fibre access (DFA) is restricted to just 5% of circuits. This is despite Ofcom's conclusion that DFA is a superior downstream remedy to Ethernet, since DFA exposes more of the value chain to competition and delivers customers greater innovation, more effective competition, better quality and lower prices. On Ofcom's own evidence, DFA should be the default downstream regulation where there is SMP.

1.5 These proposals will significantly harm consumers by raising prices, weakening competition and increasing uncertainty. There may also be substantial knock-on effects to the wider economy.

1.6 Ofcom's proposed change in approach for future regulation lacks any meaningful analysis of its adverse effects or of potentially better alternative approaches. For instance, Ofcom's analysis does not include any assessment of the extent to which weak regulation will stimulate additional investment, if at all. Neither does it assess whether there will be any actual customer benefits from putative additional investment and whether these would outweigh the certain and significant harm from prices above cost. Furthermore, Ofcom has not assessed to what extent higher prices will weaken competition, so diminishing the prospects for rival investment. As we demonstrate in this document, there is a significant risk that Ofcom's proposals in fact act to reduce investment. Even if Ofcom can demonstrate that investment will be increased, Ofcom must ensure that it is mindful of its primary duty to

serve consumers' interests and should treat network investment as a means to deliver benefits to customers, and not as an end in itself.

1.7 Ofcom has explained that the rationale underlying its proposals is driven by two key motives: to stimulate network investment; and to promote price stability and certainty by aligning BCMR regulation with the regulation it expects to set in the upcoming Access Review. Neither of these reasons provides a sound economic or legal justification for Ofcom's BCMR proposals.

1.8 As we highlighted above, we agree that Ofcom's strategy should be to stimulate network investment wherever this leads to net benefits to consumers. As long as this condition is satisfied, we agree with Ofcom that stimulating investment can be, in certain circumstances, a sound reason to depart from its policy of setting prices at cost – as Ofcom says in its consultation: "*Typically, we set charge controls based on BT's costs, unless there is a strong argument to use an alternative approach, such as stimulating competitive investment*" (§4.13).

1.9 However, in this case and on Ofcom's own evidence, higher prices will not stimulate additional investment during this review period, even with the restrictions on the Physical Infrastructure Access (PIA) remedy removed to allow unrestricted access to BT's network of ducts and poles. For example, Ofcom says: "*market developments are relatively limited and will not affect the level of competition in the BT Only and BT+1 [CI Access] markets over this review period*" (§6.71). Furthermore, higher prices in this market review period cannot stimulate investment after 2021 since higher prices before 2021 will not increase returns on investments made after 2021.

1.10 Ofcom is also wrong to propose to restrict the scope of DFA to just 5% of circuits. While it is possible that imposing more widespread DFA may marginally reduce leased-line network investment in the medium term, the impact of this will be slight, and the benefits to consumers of wider DFA would be substantial. Wider DFA would ensure customers quickly enjoy significant benefits from innovation and productive efficiency. Limiting DFA will deliver consumers fewer benefits from innovation, reduce productive efficiency, and will create significant inefficiency due to duplication of physical network assets. Before imposing such a limited DFA remedy, Ofcom should conduct an appropriately detailed impact assessment of the alternative options, which it has not done.

1.11 Ofcom's approach of setting weak regulation is based on several other omissions and errors:

- Ofcom has ignored that weak regulation will reduce FTTP network investment incentives for BT's rivals since it will erode the base of non-BT customers which are critical to making competitive network investments viable. Consequently, the impact on investment is at best ambiguous. Ofcom has not assessed the magnitude of this effect;
- even if weak regulation did stimulate material additional investment in leased line networks (which according to Ofcom it will not) this investment would have limited consumer benefit since (unlike FTTP) businesses already have access to Openreach's nationwide leased line network through Ethernet (or in the future DFA). Thus, stimulating leased line network build will not improve quality or product differentiation;

- unlike FTTP the potential to stimulate rival leased line network investment is limited since the most profitable build areas are already served by alternative operators;
- though we welcome the lifting of restrictions on DPA use, Ofcom has exaggerated the impact this will have on stimulating additional network investment particularly in the next 2 years.

1.12 Therefore weakening regulation will, even at best, neither stimulate productive investment nor benefit consumers. At worst it could actually reduce investment by rivals. Consumers will not gain and could be worse off in both the current and future market review periods.

1.13 For different reasons, we do not consider Ofcom's claimed desire for stability, certainty and to affect the transition to future regulation provide any objective justification for Ofcom's proposals.

1.14 Ofcom has indicated that its BCMR proposals are designed to 'bridge' or 'align with' the regulation that it expects to impose in the 2021 Access Review. For instance, Ofcom indicated that it does not wish to impose DFA in the CI Access BT+0 market since it might decide in the Access Review that DFA is not appropriate in some parts of that market; and Ofcom does not want to reduce price caps in the BCMR since prices in some areas may rise in the Access Review.

1.15 If Ofcom were to set any aspect of regulation in the BCMR based on its current view of the regulation it expects to set in its Access Review in 2021 (which it has yet to explain, justify, consult on or finalise) then it is prejudging the outcome of its Access Review consultation process. This would effectively impose BCMR regulation without consultation.

1.16 Such an approach would breach Ofcom's public law duty to consult when the proposals are *inter alia* at a formative stage. It would also disregard Ofcom's own regulatory principles such as: to "*strive to ensure our interventions will be evidence-based, proportionate, consistent, accountable and transparent in both deliberation and outcome*"; and, to "*consult widely with all relevant stakeholders and assess the impact of regulatory action before imposing regulation on a market*".

1.17 Thus Ofcom must base regulation in this BCMR on evidence available today and in light of its strategy to stimulate network investment that benefits consumers. In the forthcoming Access Review it can then revise regulation if relevant evidence and analysis supports it. Notably, Ofcom's decision in this BCMR cannot 'fetter' its future discretion – in other words its decisions in the BCMR do not limit its flexibility to set different Access Review regulation. Thus, it is not necessary for Ofcom to set particular regulation in the BCMR in order to allow it to set the regulation that is appropriate in the Access Review.

1.18 Ofcom has explained that the CPI-CPI charge controls were "*for stability*" to avoid reducing nominal prices and then increasing them in some areas in the next review. This reasoning has several flaws:

- such an argument is prejudiced since it relies on pre-judging the outcome of its future Access Review consultation;
- a CPI-CPI cap will not result in stability of individual nominal prices since the cap applies to a wide basket and individual prices can rise at up to CPI+5%;

- in any case, Ofcom has not explained what consumer harm would result from wholesale prices falling (to cost) and possibly in some cases rising in 2021. What is important to businesses is price predictability not nominal price stability;
- a CPI-CPI price cap imposes unnecessary inflation risk on Openreach and its customers.

1.19 We agree that regulatory certainty is important to support investment – however, Ofcom's proposals undermine such certainty. By focussing on nominal price stability, which is unimportant, at the expense of policy consistency, which is important, Ofcom is increasing uncertainty. Certainty is engendered by maintaining consistent policies and principles over time and only changing them after evidence-based consultation. Ofcom's regulation in the BCMR departs from this concept – its BCMR proposals deviate, without justification, and without assessment of the likely impact, from its well-established and sound policy of setting cost-based price caps.

1.20 Therefore, stability and certainty do not provide justification for Ofcom's weak regulation proposals and nor does stimulating network investment. Both investment incentives and customers' interests will be best served by setting cost-based charge controls and imposing DFA widely in this BCMR.

1.21 As well as these errors in remedies we consider that Ofcom has – on the basis of its own evidence – made a number of other errors in its market definition and SMP assessment. In particular:

- Ofcom should properly test whether CI Access and CI Inter-exchange markets are in the same economic market;
- Ofcom's assumptions to conduct its geographic market definition (a buffer distance of 50m, and a network coverage threshold of 65%) are unfounded and exaggerate the competitive impact of rival networks. Ofcom effectively assumes that a rival can constrain Openreach prices and prevent a SNIPP in a postcode sector even if that rival can only viably serve less than 5% of premises – this is inappropriate. To address this error the buffer distance should be reduced to 10m (or below) and the network coverage threshold increased above 70%;
- Ofcom's proposed no SMP finding for CI Access in the Central London Area (CLA) is flawed. Openreach's market share of 61% to 70% is well above the 50% threshold which establishes a presumption of SMP. The high point of Ofcom's justification to overcome this presumption is that CLA is *more* competitive and has *more* rival networks than other areas of UK. This obviously does nothing to evidence that Openreach does not hold SMP in the CLA as well as in the rest of the UK;
- The geographic and SMP analysis of the CI Inter-exchange market should be based around routes. Ofcom's analysis is based on the number of rivals at each exchange, and therefore effectively assumes that if a different rival is present at each end of a route there will be a competitor on that route (which is not the case).

1.22 It is critical that Ofcom addresses these errors to ensure that its market definition and SMP analysis is robust; otherwise there is the danger, as happened with BCMR16, that the whole regulatory structure could be undermined as a result of a successful appeal, creating uncertainty and delay.

1.23 We are also concerned that the delays to Ofcom's consultation, combined with the need to properly consider responses and (possibly) amend its approach will make it impossible for Ofcom to finalise its statement before April 2019 which will create a lacuna where all regulation falls away. Despite repeated requests Ofcom has provided no cogent explanation of how it would ensure that consumer interests will be protected during such a lacuna and we understand that no such explanation will be provided prior to the end of the consultation period. Creating such uncertainty is not only contrary to Ofcom's regulatory principles but also deters investment. It is surprising that Ofcom emphasises the need for certainty but appears willing to allow a lacuna to occur without any timely consideration of how its effects can be mitigated. Lacunae are amongst the most harmful scenarios for market certainty.

1.24 In summary, we think that Ofcom's proposed weak BCMR regulation will significantly harm consumers yet, on Ofcom's own evidence, deliver no material benefit through stimulating network investment. Indeed, by undermining the ability of altnets to undertake future investment, it may be detrimental to network investment, particularly in FTTP products. Ofcom should strengthen its proposals to ensure they work for consumers' interests and also deliver the certainty that is critical for investment.

1.25 Our submission is structured as follows:

- In section 2 we provide our view on Ofcom's market definition and SMP assessment
- Section 3 outlines our view on the appropriate approach to remedies
- Section 4 describes our analysis of the appropriate extent of DFA obligations and regulation of DFA
- Section 5 explains the appropriate basis for Ethernet charge control
- In section 6, we provide our views on Ofcom's quality related obligations
- In section 7 we comment on other aspects of Ofcom's proposals and consultation

2 Market assessment

2.1 In this section we discuss Ofcom's proposed market assessment and in particular: the adoption of separate access and inter-exchange markets; market definition and SMP findings for CI Access; and, market definition and SMP findings for CI inter-exchange markets (IEMs).

2.1 Separate access and inter-exchange markets

2.2 Ofcom has not included any evidence or reasoning supporting its proposals that there are separate product markets for access and inter-exchange CI services. This is a clear and significant omission.

2.3 This is particularly important given that Ofcom largely defines product markets within the BCMR on the basis of supply-side constraints, rather than demand-side constraints. In such a supply-side defined market, it is entirely plausible that products with very different uses, and different customer bases, fall within the same relevant market as suppliers are easily able to switch capacity between them. If CI access services and CI inter-exchange services were in

the same product market, then this might necessitate significant changes to the remedies which Ofcom proposes for these products.

2.4 While on the demand side, there can be no substitution between CI access and CI inter-exchange (as the circuits are on different routes) the same is not necessarily true on the supply side. For example, it is conceivable that a provider which is solely active in the CI inter-exchange market might dig out to business premises which are a short distance (under 10m) from an exchange or break-out point at which it is present and which are seeking an access product. Similarly, a provider of CI access services may be able to easily supply CI inter-exchange services.

2.5 The question of whether or not operators would be willing to do so is an empirical one, and will depend upon the business strategies of operators, network architectures and reach, and whether there are any specific assets, skills or resources which differ in offering CI access and CI inter-exchange.

2.6 Ofcom should have assessed whether CI Access and CI Inter-exchange are in the same market(s) in its consultation through modelling and statistical analysis. Furthermore, it should have undertaken this assessment starting with each of CI Access and CI inter-exchange as a focal market, since there is potential for the market definition to be asymmetric – whereby, for example, CI access providers impose a competitive constraint on a hypothetical monopolist in the CI inter-exchange market (or vice versa) but there is no constraint in the other direction.

2.2 Market definition – CI Access

2.7 Section 4 of Ofcom's consultation paper considers market definition in the CI Access market. Below we comment on Ofcom's proposals.

2.2.1 *Methodological approach*

2.8 Ofcom has used the SSNIP test as its conceptual framework for defining relevant markets. The SSNIP test is the standard approach, adopted across a wide range of industries and jurisdictions, for conducting market definition exercises. Ofcom is correct to adopt it, and should continue to do so.

2.9 Similarly, Ofcom's adoption of the modified Greenfield approach (whereby markets are assessed in the hypothetical absence of *ex ante* regulation in that market) is appropriate and consistent with previous regulatory decisions. Ofcom should continue to adopt this approach in the current and future reviews.

2.10 Ofcom is also correct to conclude that it should consider both demand-side substitution and supply-side substitution when determining whether a SSNIP would be profitable for a hypothetical monopolist since either demand-side substitution or supply-side substitution can make a SSNIP unprofitable. In the markets for CI products in the UK, both of these forms of substitution are likely to be important. In particular, supply-side substitution should be taken into account and is likely to be more important than in many markets which are considered by competition authorities, due to the low ability to engage in demand-side

substitution in these markets arising from their geographically specific nature and the high costs of moving business premises.

2.2.2 *Product market definition*

2.11 Ofcom proposes

> *… that there is a single market for CI Access services at all bandwidths, which includes all wholesale fibre-based and WDM services used to connect end customers to fibre networks. This market includes dark fibre used to self-supply or supply CI Access services but excludes business grade connectivity services provided over EFM, as well as symmetric and asymmetric broadband.*[1]

2.12 TalkTalk considers that the product market definition adopted by Ofcom for CI access is broadly correct other than the issue described above that it is unclear whether CI access is a separate economic market from CI inter-exchange.

2.13 Below we comment on two aspects of product market definition: whether there is a single market that covers all bandwidths; and, the inclusion (or not) of other technologies such as asymmetric broadband.

2.2.2.1 *Different bandwidths*

2.14 In assessing whether different bandwidths are in the same market Ofcom has used a SSNIP test based approach. However, Ofcom's approach to demand-side substitution, as set out at §§4.26-4.37, is fundamentally flawed. In particular, Ofcom appears to have fallen into a form of 'cellophane fallacy', the well-known error in market definition that occurs when product market definition, in the presence of a firm with pre-existing market power, is assessed on the basis of the existing (distorted) market prices, rather than competitive price levels.

2.15 The presence of this error can be seen on the basis of Ofcom's own analysis. As Ofcom states at §4.23 of the Consultation:

> *As noted in Section 6 and Annex 14 on VHB, the evidence indicates that BT would have market power on VHB services considered on a standalone basis, so prices on these services may be distorted. This is supported by the high profit margin BT earns on VHB services, for which we estimate BT currently charges above fully allocated cost.*

2.16 It is also important to note that Ofcom has access to reasonably accurate estimates of the competitive price for 10G services. In order to determine that BT charges above FAC, Ofcom must have estimated FAC. Moreover, BT's regulatory financial statements, and the analysis which Ofcom has taken on the costs of dark fibre (which contains all of the passive elements of the cost stack) provide further detailed evidence on the competitive price level.

2.17 Despite this, when conducting its analysis of the SSNIP test (at §4.27 and Table 4.1 of the Consultation) Ofcom uses the current price level, rather than amending BT's prices to the competitive level. This means that the price of 10G circuits is inappropriately inflated compared to 1G circuits, which in turn implies:

[1] Consultation, §4.77

- that the competitive constraint imposed by 10G circuits on 1G (and lower) circuits will be underestimated, because the price gap between 1G and 10G circuits will higher than in an appropriately conducted SSNIP test. This is likely to lead to the market being defined too narrowly when 1G circuits are the focal product.
- the competitive constraint imposed by 1G circuits on 10G circuits will be overestimated, because of the inflated margin on 10G circuits and the lower critical loss thresholds this implies. This is likely to lead to the market being defined too widely when 10G circuits are the focal product.

2.18 Because of these errors, Ofcom's demand-side analysis of substitution between different bandwidths of CI Access products is unreliable. TalkTalk considers that it is likely that, at competitive price levels, 10G Ethernet circuits would act as an effective competitive constraint on 1G Ethernet circuit pricing due to the limited price difference between them. Furthermore, over the next two years, as the costs of 10G and 1G electronics converge, the scope for a competitive constraint between 1G and 10G circuits will increase. However, Ofcom's error in its demand side analysis is of limited importance, because Ofcom has rightly primarily based its market definition on supply-side substitution factors.

2.19 TalkTalk considers that there will be supply-side substitution between different bandwidth speeds—and, in particular, between 1Gbps and 10Gbps Ethernet circuits. There are no material barriers to an operator who provides 10G Ethernet supplying 1G Ethernet (and vice-versa), since both services use the same underlying passive infrastructure , the same systems and the same processes. The only potential difference is in the active electronics which is placed on the ends of the dark fibre. However, these costs are marginal to demand, rather than fixed, so do not act as a barrier to entry. Furthermore, as Ofcom correctly notes (§4.45), the same electronics are used for all circuit speeds below 1Gbps, and so 10Mbps, 100Mbps and 1Gbps speeds will necessarily form part of the same economic market on supply-side considerations.

2.20 Finally, Ofcom should not assume that the difference in market shares for BT between 1Gbps and 10Gbps circuits in some way implies that they are in different markets. Rather, the different market shares reflect BT's relative commercial strategy towards the two products—reducing 1Gbps prices towards costs as prices are regulated; but maintaining excessive prices for unregulated 10Gbps circuits in order to raise rivals' costs, even if this means a loss of market share.[2] Once more, in order to avoid the Cellophane fallacy it is important for Ofcom's assessment to reflect competitive prices rather than prevailing, distorted price levels and the consequentially distorted market shares.

2.2.2.2 *Other products*

2.21 TalkTalk agrees with Ofcom's exclusion of other products from the relevant product market based on demand-side and supply-side factors. Each potential product is discussed below.

[2] The majority of 10Gbps circuits are currently used for backhaul by ISPs such as Sky, TalkTalk and Vodafone, and by MNOs in mobile backhaul. This reflects, firstly, that few enterprises have a need for 10Gbps capacity at a single site; and that even when an end consumer has a need for a 10Gbps circuit, that will generate a requirement for at least one additional 10Gbps to backhaul from the local exchange of that end consumer. As such, the majority of consumers of 10Gbps circuits are large ISPs, rather than their customers, and BT can benefit from increasing their backhaul costs.

Asymmetric broadband

2.22 Asymmetric broadband (such as ADSL and VDSL/FTTC) should not be considered a competitive constraint for Ethernet products. On the demand-side, it has starkly inferior features, including:

- much lower download and upload speeds (download 80Mbps maximum, upload 20Mbps) versus the prevailing 100Mbps and 1Gbps Ethernet products;
- less speed certainty;
- increased jitter; and,
- contention at peak times.

2.23 Therefore, it is unlikely that a meaningful proportion of businesses would be willing to downgrade their Ethernet service to asymmetric broadband, particularly since the market is rapidly migrating towards 1Gbps as the standard speed product for new Ethernet circuits.

2.24 From the supply-side perspective, there would be no substitution since a provider of asymmetric broadband would not be able, in response to a SSNIP, to provide Ethernet services without significant investment and delay due to the need for additional network equipment, new customer handling procedures and an upgraded service wrap.

Ethernet first mile (EFM)

2.25 Similarly to the situation for asymmetric broadband, EFM should not be considered to be a competitive constraint on ethernet products.

2.26 From a demand side perspective EFM has inferior features (download and upload speeds, speed certainty, jitter, contention), and therefore cannot effectively serve current business bandwidth requirements.

2.27 From the supply-side perspective, there would be no substitution since a provider of EFM would not be, in response to a SSNIP, able to provide Ethernet services without significant investment and delay.

FTTP/GPON

2.28 Ofcom does not consider in detail whether FTTP/GPON networks may impose a competitive constraint on a hypothetical monopolist of Ethernet products. We presume this is because Ofcom does not consider that FTTP/GPON networks will impose a competitive constraint on a SNIPP by a hypothetical monopolist. We agree with this implicit conclusion. We explain below our reasoning.

2.29 First, an FTTP/GPON network does not have the features businesses generally seek in an Ethernet product (uncontended access, guaranteed bandwidth, symmetric access speeds, and business grade repair times). Furthermore, for businesses with bandwidth requirements at or in excess of 1Gbps, the FTTP/GPON network may be unable to offer a sufficiently high speed service. Even if an FTTP/GPON network was able to offer all of the features wanted by businesses, it would be unlikely to act as an effective competitive constraint for a

considerable period of time, as businesses tend to be cautious in adopting untested telecoms technologies.

2.30 Second, most existing FTTP/GPON operators would not be able to supply-side substitute to operating in the Ethernet market. In many cases additional duct will be required since the existing network does not serve areas where business are located (e.g. business parks and CBDs). Furthermore, even where duct does pass close to business premises additional fibre would be required to serve businesses and additional duct may have to be laid[3] to accommodate the additional fibre required. This would involve substantial sunk costs, which represent a considerable barrier to entry and preclude supply-side substitution.

2.31 Third, and in any case, any constraint is likely to be weak since only a small proportion of the UK (and in particular of areas which have a high density of leased line demand) is covered by FTTP/GPON.

2.2.2.3 *Product market definition: summary*

2.32 Overall, therefore, Ofcom has correctly defined the relevant product market as being for Ethernet circuits of all speeds, but excluding EFM, asymmetric broadband, and FTTP/GPON networks, none of which will impose an effective competitive constraint on a hypothetical monopolist of Ethernet circuits.

2.2.3 *Geographic market definition*

2.33 The second element of market definition in the proposed CI Access market is the geographic market definition. Geographic market definition in telecoms access markets is unusual because there is no meaningful scope for any demand-side substitution between different geographic areas: businesses will not generally move premises in order to obtain a different set of potential leased line providers; fixed line providers (who purchase CI Inter-exchange) are unlikely to substantially change the areas they serve due to changes in 1G and 10G backhaul pricing; and mobile operators have coverage obligations which mean that they are effectively forced to have masts in certain closely defined geographic areas.

2.34 Equally, supply-side substitution in this market is likely to be limited, as Ofcom has correctly found. Digging additional duct for Ethernet circuits, beyond very short distances, is both time consuming and involves network providers incurring substantial sunk costs. These sunk costs mean that entry into a new geographic area should be treated as new entry rather than supply side substitution, and so is not taken account of in the market definition exercise. Instead this entry is properly considered at the market power stage.

2.35 This lack of both demand-side and supply-side substitution means that, contrary to most other industries, geographic market definition consists of grouping together areas with similar competitive conditions in order to make regulatory decisions more tractable. In the absence of such grouping there would be thousands or millions of geographic markets, each of which could in theory be subject to different regulatory remedies.

[3] Whether additional duct is required will depend on the nature of the existing duct e.g. space availability, location of break out points

2.36 However, the fact that the geographic market definition exercise in telecoms access markets is largely one of administrative convenience, rather than reflecting a strict application of economics, means that it is particularly open to errors. In particular, areas with somewhat different competitive conditions could be grouped together as if they were the same, in order to either reduce the workload on a regulator or to help reach prejudged policy outcomes. It is therefore important to ensure that areas which are treated as part of the same geographic market are genuinely facing identical or near-identical competitive conditions, rather than merely displaying some superficial similarities.

2.37 Ofcom's approach to geographic markets can be summarised as follows:

- it has selected postcode sectors as its geographic unit;
- postcode sectors are classified into three groups based on the number of operators 'present' – namely, BT+0, BT+1 and BT+2 (or more). This last category is referred to as high network reach (HNR);
- a rival network is considered to be 'present' in a postcode sector if that network is within 50m of 65% or more of business premises in that postcode sector. The 50m assumption is referred to as the buffer distance and the 65% the network coverage threshold. These assumptions are intended to reflect whether an operator acts as a competitive constraint;
- all rival networks are included in the count of operators.

2.38 On the basis of the evidence set out in the BCMR, Ofcom has misdefined the geographic markets in the current BCMR in a number of respects. We discuss this below.

2.2.3.1 *Buffer distance*

2.39 Ofcom proposes that, for a network to be counted as being present it must be within 50m of a business location. This 50m assumption is referred to as the buffer distance.

2.40 Ofcom's approach for setting the buffer distance is based on selecting a dig distance from simple statistics about the notional actual distance dug by rivals. It is not appropriate to define geographic markets in this way.

2.41 Therefore, Ofcom's assumption is wrong. Below we describe:

- first, why Ofcom's approach is incorrect since it is divorced from the critical question of whether a rival network could act as a constraint; and,
- second, why 50m is an inappropriate assumption even on the basis of Ofcom's flawed approach.

Ofcom's assumption is based on the wrong question

2.42 The purpose of the geographic market definition exercise is to classify postcodes into differing levels of competition e.g. BT + 0 rivals, BT + 1 rival, BT + 2 or more rivals, so that these grouped postcodes can be considered separately. It is effectively an attempt to make geographic market definition tractable. The geographic market definition should be based on whether a particular rival network can act as a competitive constraint – as Ofcom points out itself:

in our geographic analysis we primarily focus on the competitive constraint arising from the potential for nearby rival networks to build a new connection to the customer. This means that the proximity of rival infrastructure is the key factor determining the competitive conditions in the provision of leased lines. Therefore, in identifying differences in competitive conditions across geographies, we focus on measuring the proximity of rival infrastructure (§5.7)

2.43 However, statistics on distance notionally dug by rivals in the past say little about how proximate a rival network needs to be to act as a constraint on BT at a particular premise.

2.44 Instead the buffer distance should be based on how close the rival network needs to be in order to be able to act as a competitive constraint. The particular test that should be applied is how close does the competitor need to be to be able to restrict a hypothetical monopolist from raising prices by more than 5-10% above the competitive level. This approach fits squarely within the standard SSNIP based approach to market definition.

2.45 Some such evidence on whether a competitor would be able to act as an effective competitive constraint is presented by Ofcom in Annex 10 of the consultation.

2.46 Assuming, for example, that Openreach currently charges the competitive level for EAD100 circuits, the competitive price level is £6,944 over a three year period.[4] This implies that the maximum additional dig cost a rival could incur while still constraining a hypothetical monopolist to price increases of no more than 5-10% of the competitive price level is £347-£694.[5] On the basis of Ofcom's own figures, as set out in Table A10.4 of its consultation, since even a 10m network extension costs £2,062 this implies that a rival would have to be within 10m of customer premises in order to be able to constrain the pricing of a hypothetical monopolist to broadly competitive levels. It therefore follows, on the basis of this evidence, that Ofcom should set the buffer distance for 100Mbps circuits at less than 10m.

2.47 A similar analysis can be undertaken for 1Gbps circuits, for which Openreach's current pricing (used as a proxy for the competitive price level) is £7,682 over a three year period. This again implies a maximum dig distance of less than 10m.

2.48 Even taking a (overly long) five year period for entrants' pay back periods, Ofcom's model indicates that operators whose networks are more than 10m away will not impose a competitive constraint on a hypothetical monopolist.[6] [7]

[4] The assumption that regulated prices are similar to the competitive level is reasonable because in its last review Ofcom explicitly targeted that prices would equal efficient costs in the final year of the charge control. It is also important to note that when defining markets, a **hypothetical** monopolist should be used, abstracting from Openreach's current vertical integration. It is therefore not the end to end costs of a circuit (including customer handling and so forth) which should be taken into account, but only the network costs which are incurred by Openreach.

[5] Assuming that all of the other costs of the hypothetical monopolist and the hypothetical efficient entrant are the same.

[6] A 1Gbps Ethernet circuit over five years will have revenue of £11,570 using Openreach's current pricing as a proxy for competitive price levels, implying that to keep prices within 10% of the competitive level the dig costs would need to be less than £1,157. Once more, this is less than the cost which Ofcom estimates for a 10m dig.

2.49 As such, Ofcom's own quantitative evidence indicates that it should set a buffer distance below 10m when defining geographic markets since it is only when the dig distance is below 10m that a rival can constrain a SSNIP by BT.

2.50 The dig distance at which an alternative can act as a competitive constraint should also reflect two other factors.

2.51 First, in a few cases (less than 9%[8]) Openreach will have to dig to reach the premises though this will generally be a shorter distance than the rival has to dig. This will slightly increase the appropriate buffer distance, since the competitive price will be higher as Openreach charges ECCs to cover its dig costs.

2.52 Second, the analysis should reflect the network coverage threshold since (using Ofcom's 65% figure) a rival will not be able to constrain BT's prices in 35% of cases since it is not present in the same area. With a uniform pricing obligation, this will increase the profit-maximising price set by Openreach, as it will be trading off the possibility of loss of demand in the competitive areas against the increased margins, with minimal loss of volumes, in uncompetitive areas. This factor will (potentially significantly) reduce the appropriate buffer distance since in over a third of cases a rival will not act as a competitive constraint.

2.53 Together these factors will further lower the buffer distance which Ofcom should use.

2.54 In using a 50m buffer distance, Ofcom has therefore considerably overestimated the appropriate buffer distance to use in its network reach analysis. Its geographic market definition is therefore wrong. At a 50m dig distance, a rival will only be able to constrain a SSNIP by BT in very few circumstances e.g. where the dig is unusually low cost per metre or where Openreach also have to dig a similar distance. The proportion of cases where a rival could constrain BT where the radial dig distance is 50m is probably less than 5%. Ofcom has the data to derive this figure.

Ofcom selected the wrong buffer distance from its dig distance data

2.55 Ofcom's actual approach is based on assessing the dig distances that Ofcom estimates that alternative operators have historically been willing to build in order to serve a customer. There is a distribution of distances with a median dig distance of 14m. Ofcom has selected a buffer distance assumption of 50m (§5.20), but has not presented any evidence of why it would be inappropriate to use the median dig distance.

2.56 As Ofcom notes, 78% of digs were less than this 50m distance. It is unclear why Ofcom thinks that 78% is the appropriate threshold for a market definition threshold, rather than using the median, mean, or some other justified number. Rather, Ofcom appears to have assumed that 50m is the correct distance for its network reach analysis, and then adopted it more-or-less irrespective of the actual proportion of circuits built over this distance. We understand that there is uncertainty in Ofcom's approach since postcode sectors lack the granularity to model precise distances to premises, but this noise in the data will lead to both under- and over-estimates of distance built, and so should not lead to a change in Ofcom's choice of

[7] TalkTalk has not calculated the maximum dig distance for a 10Gbps circuit since Openreach's current prices are at supra-competitive levels, meaning that there is no competitive benchmark.

[8] Table 6.9 shows that Openreach has existing duct in 91% to 100% of cases

threshold. Ofcom's approach in this regard therefore appears to be arbitrary and without reference to actual data, and as such is prejudiced.

2.57 Ofcom itself states that "*the evidence could suggest that a shorter distance of about 25m is appropriate: the evidence on actual digging behaviour suggests that telecoms providers are proportionately more likely to extend their network when they are within 25m of a customer site … A buffer distance lower than 50m would also be consistent with our cost calculations over a typical three-year contract term for the vast majority of CI Access circuits*" (§5.21). As such, Ofcom's own analysis appears to conflict with its arbitrary assumption of a 50m buffer distance, and to point towards its model systematically having over-estimated actual build distances.

2.58 Table A10.6 provides further support for the proposition that 50m is an excessive dig distance. As shown in that table, a 50m dig will not be a profitable proposition for the supply of a 100Mbps circuit over either a 3-year or 5-year payback period. 100Mbps circuits continue to represent the majority of new connections, with Openreach connecting around 2.5 100Mbps circuits in 2017/18 for every 1Gbps circuit that it installed.[9] As such, Ofcom's own evidence suggests that it has assumed a dig distance which is uneconomic for the vast majority of the market, notwithstanding that Ofcom's modelling is wrong due to its failure to consider the hypothetical nature of the SSNIP test and abstract from vertical integration.[10]

2.59 Moreover, Ofcom's evidence suggests that over a '*typical three-year contract term'* it would also be uneconomic to dig 50m to install a new 1Gbps circuit. This can be seen from Table A10.6, which shows the economic dig distance as 43m for such circuits. TalkTalk considers that a three-year customer lifetime [✂] is the appropriate measure for Ofcom to use, and that as such the dig distance adopted by Ofcom is too long for either 100Mbps or 1Gbps circuits.

2.60 It is also worth noting that the data for the distance dug is likely to be significantly biased upwards for several reasons.

2.61 First, there is observation bias in these results. That 22% of dig distances are over 50m does not say that competing operators can compete for 22% of contracts of 50m. Ofcom has adduced no information on the number of potential contracts at each distance; it may be that there is a very large number of potential contracts with a 50m+ dig distance, and a competing operator can compete for less than 5% of these contracts. The risk of this is enhanced by the mathematics of distance. The area of a circle is defined as πr^2. Consequently, if potential contracts are randomly distributed, it would be expected that there would be an *increasing* proportion of customers with longer dig distances.

2.62 This can be seen from the following data, taken directly from Ofcom's own analysis. Ofcom has set out that the median dig distance (that is, the dig distance below which 50% of contracts are won) is 27m, and that 78% of contracts are within 50m. That is, 28% of contracts are won between 27m and 50m dig distance. A 27m radius covers 2,290m^2, and a 50m radius covers 7,854m^2.

[9] BT Regulatory Financial Statements 2017/18, Table 8.1.1. There were 11,593 1Gbps connections during 2017/18, across both standard and LA variants, compared to 28,726 100Mbps connections

[10] See footnote 4 above.

2.63 Over such short distances (27m will be the equivalent of around 4 or 5 small shops along a high street) potential contracts are likely to be effectively randomly distributed.[11] That implies that there should be around 2.5 times as many contracts won between 27m and 50m as between 0m and 27m.[12] However, Ofcom's data demonstrates that there is only 0.56 contracts won between 27m and 50m for every contract won between 0m and 27m. Effectively, for each available contract, a competing operator was only 23% as likely to win a contract between 27m and 50m as it would be to win a contract between 0m and 27m. Its effective competitive constraint is reduced by over three quarters.

2.64 This is a problem of observation bias. Ofcom has only considered contracts which were won, not those which were not won. The observation bias is severe, and has led to a substantial upwards bias in the dig distance estimated by Ofcom. It is unclear how Ofcom can adjust for this bias within its modelling without fundamental changes.

2.65 Second, this problem is compounded by bias introduced by Ofcom's use of mapping software, which does not have sufficiently accuracy and granularity to fulfil the role which Ofcom has used it for.

2.66 Ofcom has explained to TalkTalk that the mapping software used has an error of around 20m, due to the use of postcodes to locate businesses. That is, we understand that when calculating dig distances, Ofcom knows the exact location of the break out point of the network operator, but allocates customers on the basis of a 6-digit postcode. All businesses within a postcode are placed at the central point of that postcode and the distance from the break-out point to the centre of the postcode is calculated.

2.67 That is, the distances presented by Ofcom in its analysis are not *actual* distances, but notional distances to a postcode centre.

2.68 This process is likely to create a significant upwards bias in calculated dig distances. For Ofcom's analysis to be correct, there have to be an equal number of digs which are further than the notional distance to those shorter than the notional distance. This is very unlikely to be true. Consider a break-out point 25m from the centre of a postcode. For Ofcom's analysis to be correct, it must be equally likely that an alternative operator would be willing to bid for and win a contract involving a 45m dig in that postcode area as a contract involving a 5m dig in that postcode area. This is patently wrong. There will be a substantial bias towards actual digs being shorter than the calculated distances, as it will be more profitable to take on a 5m dig than a 45m dig.[13]

2.69 This bias is inherent in the analytical approach Ofcom has adopted, and therefore cannot be removed without a fundamental change of approach. Although this bias seems highly likely to be severe, Ofcom's methodology does not allow the precise size of this bias to be

[11] The Kensington & Chelsea Retail Commission defines a small shop as being 80m^2 or less in size. Assuming that a shop is on average around twice as deep as it is wide, that makes a small shop around 6m x 13m in size. RB Kensington & Chelsea (2007), *Response to Report from Retail Commission: A Balance of Trade*, 27th September 2007.

[12] 7,854 / 2,290 = 3.43. There will therefore be 2.43 contracts available between 27m and 50m for every contract available between 0m and 27m.

[13] Or, if the operator seeks to equalise the profitability by setting the same gross margins on the two hypothetical contracts, it would be much less likely to win the contract involving the 45m dig.

calculated. It therefore cannot be adjusted for in a justifiable manner. Once more, this supports the proposition that Ofcom should fundamentally change its approach.

2.70 Therefore, based on the evidence Ofcom has presented a buffer distance of much less than 50m would be appropriate.

Summary on buffer distance

2.71 Taking all of the evidence together, Ofcom should adopt a dig distance of no more than 10m, reflecting the need to ground its analysis in a SSNIP-type test to assess how close a rival has to be to be able to constrain Openreach's prices.

2.72 Furthermore, Ofcom's claim at §5.25 that it has presented sensitivity analysis at Annex 13 is disingenuous. It is usual in sensitivity analysis to choose sensitivities both below and above the variable in question—for example, in this case where 50m is the base assumption, to have sensitivities at 25m and 100m. Instead, Ofcom only presented a sensitivity analysis above the base value chosen, despite its admission that the data points towards a lower distance (see §2.57 above). Ofcom does not appear to have given any serious consideration to dig distances below 50m; it should do so, given that the preponderance of evidence supports such distances.

Network coverage threshold

2.73 Ofcom's network coverage threshold is used to assess whether a network counts as being present in a particular postcode sector. Ofcom have assumed that if a network is within 50m—the (incorrect) buffer distance— of 65% of premises then the network is counted as being present.

2.74 This 65% assumption is poorly supported by evidence, and is therefore in all likelihood incorrect. Ofcom states in the Consultation that:

> *As in our review of the Wholesale Broadband Access market, we consider that if rival networks are able to supply more than 65% of large business sites in an area, the area can be considered covered by rival networks.*[14]

2.75 This paragraph relies in turn on §4.68 of the 2018 WBA Statement, which reads as follows:

> *In the 2008, 2010 and 2014 WBA Statements, we concluded that Virgin Media should be counted as having a presence in an exchange area if its network was able to supply more than 65% of the premises in that exchange area. In our 2008 statement, we considered that in order to provide a competitive constraint in an exchange area, Virgin Media must be able to supply above 50% of premises but not necessarily as many as 90%. We checked a range of sensitivities between these levels (including our chosen 65% threshold) and found that the choice of threshold did not make a significant difference to the market sizes. A 65% coverage threshold also means that Virgin Media is able to serve a clear majority of premises in that exchange area.*

2.76 That is, the 65% threshold is not a new evidenced decision of the 2018 WBA Statement, but rather is a repetition of a decision of the 2008 WBA Review. However, even that 2008 WBA

[14] §5.24

review did not provide a detailed justification for the choice of a 65% threshold, but rather selected it from a broader range partly on the basis that the precise choice of threshold made little difference to the market definition, and partly on the basis that there should be competition at a 'clear majority' of premises. Ofcom does not appear to have conducted a similar analysis which would demonstrate that there is little difference in BCMR outcomes between a 60% threshold (the lowest proportion which could realistically be taken to represent a 'clear majority') and a 90% majority (the top end of Ofcom's range in the 2008 WBA review).

2.77 Moreover, even if Ofcom was able to conduct an analysis that demonstrated that outcomes were the same or at least strikingly similar for all thresholds between 60% and 90%, it does not hold that the correct proportion is the same in business connectivity markets as it is in wholesale broadband markets. This would require an analysis of the proportion of competitive overlap which would be required to act as a competitive constraint on a hypothetical monopolist of leased lines in an area, sufficient to constrain prices to no more than 5-10% in excess of the competitive level. This analysis would need to take account of the fact that it may be more profitable to be a residual demand monopolist, at inflated prices, in part of a geographic area than to set a price which enables it to compete across the whole area.[15] It should also reflect that there may be greater scope for geographic price discrimination in business markets than in consumer markets because, for instance, the higher contract value and absence of published prices makes discrimination more viable.[16]

2.78 It is insufficient for Ofcom to simply read across a threshold from a different market.

2.79 In the absence of this analysis, Ofcom's network coverage threshold cannot be considered to be appropriate. Although TalkTalk does not have the complete data to conduct a detailed modelling exercise itself (Ofcom does have these data), we consider that an appropriately calibrated threshold would likely lie considerably higher than Ofcom is proposing, and is likely to be well in excess of 70%. Ofcom should conduct modelling in order to determine the appropriate threshold.[17]

[15] A residual demand monopolist is a firm which chooses not to compete across the whole market but rather accepts that it will lose demand in competitive areas, and sets its price to maximise returns predominantly on the basis of the non-competitive areas. It is trivial to demonstrate via basic economic modelling that this can be the profit-maximising strategy in the instance where there is inelastic demand for a product and a significant proportion of customers are fully monopolised. TalkTalk can provide an example of such modelling to Ofcom if it would be helpful.

[16] This analysis should be conducted under the Modified Greenfield Approach, where there would be no single pricing constraint on BT/Openreach due to Ofcom's regulations. In any case there is no price consistency obligation imposed in CI markets. The rule that geographic discounts do not count towards compliance (see §5.61) only provides a weak deterrent to price discrimination

[17] This modelling should assume that an unregulated hypothetical monopolist of Ethernet circuits seeks to maximise its profits in a representative set of geographic areas, and is able to adopt individual price discrimination while doing so. It should then consider whether the average price set by this hypothetical monopolist would be within 5-10% of the competitive level, given the presence of a competitive constraint from an alternative competing operator which is present in only a proportion of that geographic area. The ability to price discriminate and the low elasticities of demand for business connectivity products is likely to lead to the ability to set prices well in excess of competitive levels for uncontested customers, implying that the appropriate Network Coverage Threshold is likely to be well above 70%.

Competitor set

2.80 Another problem with Ofcom's analysis is that it does not adopt a competitor set approach when determining the number of operators 'present' in an area, as is commonly done in market analysis. For example:

- in WBA markets, Ofcom has previously defined a set of 'principal operators' which are those major operators with sufficient scale and capabilities to be able to exercise a competitive constraint on BT. Other competition authorities have adopted a similar approach;
- the CMA and its predecessor organisations defined a competitor set in groceries, which means that only national operators with sufficient scale and range are treated as effective constraints on the behaviour of major grocers such as Tesco and J Sainsbury; and,
- Ofcom proposes a competitor set based approach for the inter-exchange market in the current BCMR review.

2.81 By not defining a competitor set, Ofcom is implicitly assuming that a very small leased line operator, which may only serve customers in a small handful of postcode sectors, imposes the same constraint in each of these sectors as a major provider such as Virgin Media. This is inappropriate and incorrect. [✂]

2.82 It is therefore important that Ofcom conducts an assessment of which leased line providers are able to impose a competitive constraint on BT, taking into account the costs to customers of adding new suppliers and the scale of those suppliers. Smaller, sub-national, suppliers which would be unable to compete for a significant proportion of leased lines nationally should not be treated as effective competitive constraints. We would anticipate that, in the case of leased line providers, an operator would have to cover at least 5% to 10% of business premises to be included in the analysis.

Geographic unit

2.83 TalkTalk generally agrees with Ofcom's use of postcode sectors as the appropriate geographic unit. This approach has been adopted in previous BCMR reviews, and is well-understood and tractable. However, as we describe below at Section 2.3.4 regarding the no SMP finding in the CLA, using postcode sectors may not be sufficiently granular since this approach finds no SMP where no constraint exists, and thus BT can exploit its market power.

Summary of geographic market definition

2.84 In summary, Ofcom's geographic market definition is flawed due to three errors, any of which would individually be sufficient to vitiate the remainder of the analysis in its document. Ofcom should therefore:

- adjust the buffer distance downwards to or below 10m, to reflect the distance at which a rival could feasibly act as a constraint on Openreach;
- conduct a detailed modelling exercise to redetermine the appropriate network coverage threshold, rather than relying on irrelevant and outdated WBA market evidence; and,

- exclude smaller operators from its network reach analysis.

2.85 This is likely to result in more of the UK being classified as BT+0 and less as BT+2 areas.

2.86 After amending the geographic market definition in this way, Ofcom will then need to adjust the remainder of its proposals, including SMP findings and remedies, so they reflect the revised levels of effective competition.

2.2.4 *Geographic market assessment*

2.87 In this section we comment on Ofcom's proposals to group individual postcodes into different economic markets e.g. BT+0, BT+1 etc.

2.88 If Ofcom corrects the assumptions used to define geographic markets (e.g. buffer distance, network coverage threshold) this will change the size of each economic market. Therefore, we discuss below generic issues which are not impacted by the precise market definition adopted.

2.89 TalkTalk agrees with Ofcom's finding (§5.31) that the Hull Area constitutes a distinct geographic market where there are different conditions of competition.

2.90 TalkTalk agrees that BT+0 (i.e. BT only) areas constitute a distinct geographic market (§5.32).

2.91 TalkTalk also agrees that BT+1 areas constitute a distinct geographic market.

2.92 Ofcom's approach of grouping other postcode sectors (i.e. not BT+0 or BT+1) into clusters in different urban areas is a useful and appropriate way to proceed. In reality, competition in leased line markets tends to be based around central business districts, which will cut across multiple postcode sectors. It is likely, with a corrected buffer distance and network coverage threshold, that the number of CBDs that Ofcom will need to assess will meaningfully reduce, and the data regarding those areas (for example, as set out in Table 5.4 and Figure 5.5) will change to reflect the reduced number of postcode sectors impacted. Given this, all of the comments below are only illustrative, and TalkTalk reserves its right to comment once Ofcom has conducted an appropriate geographic market definition exercise.

2.93 While TalkTalk agrees that considering each of the 576 postcode sectors in the high network reach areas separately would be intractable, in the case where the number of sectors is reduced significantly by changes in dig distances and the network coverage threshold, there may be scope for individual, or a more granular, assessment.

2.94 TalkTalk agrees that, on the basis of the data presented, the CLA forms a distinct geographic market. It has a lower average distance to the first rival network, of below 20m, although this will not be consistent with this operator acting as a competitive constraint on BT, and has an average distance to the second network of around 25m.

2.95 Figure 5.6 also demonstrates that a great majority of some other HNR area groupings are likely to instead be treated as BT+1 areas under an appropriate approach to geographic market definition. The average distance to the second rival network in HNR areas of Edinburgh is 39m, and in Bristol is 45m. Both of these are well beyond the maximum 10m distance which Ofcom can set based on its empirical evidence.

2.96 After adopting an appropriate geographic market definition, it therefore appears likely that several of the metropolitan areas outside London—most notably Edinburgh and Bristol—should no longer be separate HNR areas, and should instead be placed in the 'Rest of the UK', with most of their postcode sectors being defined as BT+1 areas. Where there are small remaining areas, they should be treated as part of 'all other HNR areas'. Ofcom should conduct its analysis for each of the top six metropolitan areas set out in Table 5.9, as meaningful proportions of all of them may properly be defined as BT+1, or even BT+0, areas.

2.3 CI Access: SMP findings

2.97 In this section we discuss Ofcom's SMP findings in the CI Access market. Ofcom has concluded that Openreach have SMP in all the defined CI access markets except in the CLA. We consider the evidence is compelling that Openreach have SMP in all markets including the CLA, at least if current market definitions were (incorrectly) adopted.[18] Below we first outline the general approach to assessing SMP and features of the market that mean that even at low market shares Openreach is not constrained by competitors and they can therefore exploit market power. We then explain our view on the SMP findings in non-CLA markets and the no SMP finding in the CLA.

2.98 Our comments are based on the markets that Ofcom defined and the resulting market shares in those markets. If Ofcom adjusts these markets to correct for the errors in buffer distance and network coverage threshold then the market shares will change which might alter the appropriate SMP findings.

2.3.1 *Ofcom's approach to SMP assessment*

2.99 TalkTalk agrees with substantial elements of Ofcom's approach to SMP assessment:

- it is appropriate to undertake a forward-looking assessment;
- it is appropriate to adopt a Modified Greenfield approach; and,
- it is appropriate to consider SMP criteria in the round (albeit that TalkTalk disagrees that Ofcom has actually adopted this approach in practice).

2.100 The first and most important indicator of SMP is market share in each defined market. As the Court of Justice set out in *AKZO*, market shares in excess of 50% in and of themselves create a rebuttable presumption that a firm holds SMP within that defined market.[19] Ofcom has correctly adopted this approach in the BCMR:

> *… we regard the following from the EC SMP Guidelines of particular relevance:*
>
> *• very large market shares in excess of 50% are in themselves evidence of a dominant position, save in exceptional circumstances;*
>
> *• dominance concerns can also arise at lower shares depending on the difference between the market shares of the undertaking in question and that of its competitors; and*

[18] This section necessarily takes Ofcom's SMP assessment 'as is', on the basis of an inappropriate market definition. If this market definition is changed, then areas will be recategorized and the SMP assessment will necessarily be altered.

[19] Case C-62/86, AKZO Chemie BV v. Commission, [1991] ECR I-3359

• if market share is high but below the 50% threshold, NRAs should rely on other key structural market features to assess SMP. (§6.14)

2.101 When determining these market shares, TalkTalk agrees with Ofcom's position that service shares of new customer circuits in 2017 are a more relevant measure of competitive strength than market share of customer base (§6.17). New customer share better reflects the competitive dynamics in the industry from time to time, as long contract periods and customer inertia means that it is likely to take many years for customer bases to adjust to changed competitive conditions. Therefore, even if Ofcom were able to obtain accurate estimates of customer inventories (see §6.18), these data would be inferior to using new circuit service shares.

2.102 There are a number of other aspects of the market that mean that Openreach could have market power even at market shares below 50%. We discuss these below.

2.103 Ofcom has highlighted a number of these factors – TalkTalk agrees with these:

- BT does hold a significant advantage from being closer to sites due to its ubiquitous infrastructure (§§6.22-6.28) which provides it with a significant cost advantage. This cost advantage in turn provides BT with the ability to outcompete its rivals—even large ones such as Colt—in large parts of the country by undercutting them on price, should it wish to do so. Ofcom correctly finds that even where a rival operator requires a short dig of 10m, BT will have a major cost advantage,[20] which means that BT will to a large extent be able to act independently of its competitors.[21] The speed advantage which BT holds in provisioning new lines exacerbates their advantage, and means that a large part of the market is effectively reserved to BT by already being connected to its network.
- BT holds significant advantages of scale and scope over all other operators. In particular, there are demand-side economies of scope from being able to serve all parts of the country which provide BT with an unmatchable advantage, one which is not fully reflected in Ofcom's SMP assessment, because [✂] Ofcom's assessment, which considers each geographic market in isolation from other geographic markets, fails to consider this important point.
- There are high barriers to entry primarily due to the large sunk costs inherent in constructing telecoms networks, and high switching costs arising due to the costs of systems integration and customer migrations (§§6.38-6.41). Similarly, there is little willingness to engage in network extension (§6.52)
- There is no countervailing buyer power [✂] as there is no credible threat to switch supplier due to the high switching costs previously identified by Ofcom (§6.75).

2.104 However, Ofcom's analysis has overlooked a number of other aspects that mean that Openreach could have market power even at market shares below 50%.

- [✂]

[20] §6.26

[21] Although Ofcom does not draw the accurate conclusion that this means that the dig distance should be 10m or less.

- Ofcom has also omitted to take into account vertical integration in the industry and its effects on Openreach's market power, in particular in areas where all operators are vertically integrated. [✂]

2.105 It is important to note that there is no evidence that BT's market power has been diminishing over time.

2.106 Openreach's market share, and therefore market power, in BT+0 and BT+1 areas does not appear to have been reducing over time, instead staying broadly constant. Looking at market shares at previous BCMR consultations, it can be seen that if anything BT's market shares have been *increasing* over the past decade.

Table 2.1: BT's market shares in CI Access over time

	2008	2013	2018
At or below 1Gbps	73%	74%	71-80%
At or above 10Gbps	39%	57%	51-60%

Source: Table A7.4

2.107 All of these factors would support finding SMP at a level lower than 50% in the markets being reviewed by Ofcom.

2.3.2 *SMP in CI Access BT+0 and BT+1 areas*

2.108 Ofcom correctly finds that BT holds SMP in BT+0 and BT+1 areas:

- BT holds a very high share of new connections in both markets (set out at §§6.46-6.48), well above the 50% threshold;
- there is limited competing infrastructure in BT+0 and BT+1 areas;
- Ofcom appropriately finds that one additional operator is insufficient to constrain BT, a finding which it has previously made in both WBA and WLA markets;
- Ofcom correctly finds that there is no potential competition which could act as a constraint on BT in the market review period; and,
- there is expected to be little entry via construction of additional infrastructure during this review period (§6.71), and unrestricted DPA will not be introduced soon enough to have a material impact during the period, even if BT does not appeal this remedy.

2.3.3 *SMP in CI Access HNR areas (except CLA)*

2.109 HNR areas are where there are BT plus 2 or more rivals. Ofcom correctly finds that BT has SMP in all HNR outside the CLA:

- BT has a share of connections above the level at which dominance can be presumed (50%) and considerably higher than any other operator;[22]
- BT's network is on average considerably closer to customer sites than other networks (§6.85), pointing to a competitive advantage for BT;

[22] See Table A7.4.

- BT has unmatchable economies of scale and scope in offering leased lines in these areas (§6.92);
- there is no countervailing buyer power which would act to constrain BT (§§6.95-6.99).

2.110 We also note that, due to Ofcom's incorrect buffer distance and network coverage threshold, HNR areas will contain postcode sector where there are fewer than two rivals to BT who can constrain their pricing. This is because Ofcom's assumptions result in rivals being counted who are not effective constraints – see section 2.2 above.

2.3.4 *SMP in CI Access CLA*

2.111 At §6.121-6.123, Ofcom reaches the conclusion that BT does not hold SMP in the CLA. This does not hold up to scrutiny.

2.112 First, and most importantly, BT has a share of new connections of 61-70% in the CLA (§6.107), far above that of its closest competitor (Colt, with 21-30%); this finding is supported by Ofcom's estimate that BT also has over 50% of inventory in the CLA. This level of market share creates a presumption that BT holds SMP in the CLA. Legally, Ofcom could only rebut this with compelling evidence in order to reach its finding that BT does not hold SMP. Given that the flow of new contracts is above the stock of existing ones, it also demonstrates that BT's market share in the CLA is trending upwards rather than downwards, implying strengthening, rather than reducing, market power.

2.113 Ofcom's alleged evidence and analysis as to why BT does not hold SMP comes nowhere close to rebutting the presumption of SMP.

2.114 Ofcom states: "*While this [BT's market share] is above the 50% level at which dominance can be presumed (subject to other factors), this is somewhat lower than the service shares in other geographic markets, including the other HNR areas outside the CLA*" (§6.122). The fact that service shares are lower than elsewhere provides no support at all for a conclusion that BT does not hold SMP in the CLA.

2.115 Ofcom notes that "*The density of rival infrastructure in the CLA is an order of magnitude greater than all other areas*" (§6.123). Similarly, Ofcom points to more rivals already being connected to premises which they may serve.[23] However, this says nothing about whether or not BT holds SMP in the CLA; all it says is that BT is likely to hold less market power (notwithstanding that such lesser market power may still be significant) in the CLA than in other parts of the UK. Given that BT holds SMP outside the CLA, this observation is consistent with BT holding SMP in all parts of the UK, including the CLA.

2.116 Although Ofcom asserts that this alternative infrastructure "*is likely to be sufficient to act as an effective competitive constraint on BT*" (§6.123), it provides no evidence in support of this claim, which is contradicted by BT's continued very high and increasing market share. In this respect it is worth noting that in mobile markets Ofcom considered that moving from four competitors to three competitors would result in a significant lessening of competition,

[23] For instance, in CLA 76% of rival connection in 2017 already had a connection (On-net duct connected) versus 54% in HNR in rest of UK

implying that three competitors in communications markets may be insufficient to protect consumer interests.

2.117 Ofcom should also reconduct its analysis of buffer distance to reflect the higher costs per metre of digging in the CLA than in other parts of the UK, including higher wage rates, lane rental charges, and the need to avoid multiple other utility services under central London streets. It is insufficient for Ofcom to rely on averages from across the UK, when conducting London specific analysis for the CLA. Such a specific analysis is likely to imply a buffer distance even lower than in other areas of the UK, well below the distances currently used by Ofcom to support its no SMP finding. As the CLA is a separate market, the analysis supporting the assessment of market power must be individual to that market.

2.118 Ofcom notes at §6.120 that Openreach offers lower prices in the CLA, by 8-10%, than in other areas, and that this is consistent with the CLA being more competitive than other geographic areas. However, later in that paragraph Ofcom correctly notes that BT's average costs could be lower in the CLA than in other areas—which could be due to increased economies of scale and density in this area, shorter line lengths, or other factors, and that there is thus no probative value in this analysis.[24] TalkTalk agrees with this; a profitability analysis, taking costs into account, would be required in order to support the conclusion that BT does not hold SMP in the CLA. In reality, the observation regarding relative pricing in the CLA and in other parts of the UK proves nothing in either direction.

2.119 We note that the last time profitability analysis was provided for the CLA (or WECLA) was for FY2016. At this point ROCE for AISBO (1G and below) services was 50.2%[25] versus 23.1% outside WECLA. Similarly, in FY2018 ROCE in the London Periphery was 25.0% versus 11.5% in rest of UK (for CISBO <= 1Gbps services)[26].

2.120 This implies that (given prices were similar across the UK) that the costs in WECLA/CLA are materially lower than in rest of UK – probably by more than 30%. Given prices are only 8-10% lower it follows that margins are *higher* in CLA than in rest of UK and are supra-normal. The very high ROCE also implies that BT had SMP in CLA in FY2016 – although despite this Ofcom decided to erroneously find no SMP in CLA in BCMR16.

2.121 We also note that, due to Ofcom's incorrect buffer distance and network coverage threshold, the CLA area will contain postcode sectors where there are fewer than two rivals to BT which can constrain BT's pricing. This is because Ofcom's assumptions result in rivals being counted when they are not effective constraints – see section 2.2 above.

2.122 Lastly, we note that even if there were two rivals in all CLA postcode sectors, BT would hold market power, and have both the incentives and ability to exploit it. This is because, absent regulation (as in a modified greenfield approach), BT could price discriminate and raise prices for those customers which cannot be served by rivals. Ofcom's approach of treating competition across the CLA as homogenous is only appropriate if it imposes regulation which has the effect of forcing BT to average price across the CLA, or otherwise prevents BT from increasing the prices it charges to captive customers. Overall, therefore, Ofcom's position

[24] Note that these average costs of an existing network could be lower, even while the cost to an altnet of network expansion could be higher, as there are different cost drivers.

[25] Current Cost Financial Statements 2016 Table 5.1

[26] Current Cost Financial Statements 2018 Appendix 4, page 122

that BT does not have market power in the CLA is unsustainable. BT has a market share so high that it must be presumed to be dominant; Ofcom presents no evidence which demonstrates that, contrary to this presumption, BT does not hold SMP (even if that SMP may not be as overwhelming as in other parts of the UK). Ofcom must therefore change its proposal and find that BT holds SMP in the CI Access market in the CLA.

2.4 *Market definition – CI Inter-exchange connectivity*

2.123 As set out at sections 2.2 and 2.3 above, Ofcom considered two focal markets when conducting its market definition exercise. The first of these, CI Access, has been dealt with above. This section deals with the second focal market, that of CI Inter-exchange connectivity.

2.124 The first element of Ofcom's market definition in CI inter-exchange is regarding bandwidths; Ofcom considers each bandwidth as a separate focal market. Correctly, Ofcom only focusses on 1Gbps and 10Gbps (and above) speeds of circuit, as lower bandwidth lines will not be suitable for backhaul circuits. Ofcom is also correct to note that 1Gbps lines will not impose a competitive constraint on 10Gbps lines, due to the large difference in capacity for a low price difference; there is no prospect that a fixed line access operator would restrict its backhaul capacity in response to 10Gbps prices being increased by 10% above the competitive level. The minimum speed for CI inter-exchange of 1Gbps means that technologies such as asymmetric broadband, EFM and FTTP/GPON do not act as effective competitive constraints, since they are unable to provide an uncontended 1Gbps connection.

2.125 Ofcom also avers that *'price differentials are such that it is unlikely a significant number of 1Gbit/s customers would switch to 10Gbit/s in response to a SSNIP*' (§7.29). In the same paragraph, Ofcom correctly notes that '*BT's high prices for 10Gbit/s circuits*' may have distorted its analysis. TalkTalk agrees that any analysis based on BT's current relative prices will be unreliable, and considers that it is quite likely that, at competitive prices, 10Gbps circuits will act as a competitive constraint on 1Gbps circuit pricing. If this is correct, then there would be two focal relevant markets based on demand-side considerations: a 10Gbps market and a combined 1Gbps and 10Gbps market. Markets would then be asymmetric.

2.126 However, as in the CI Access market, supply-side considerations are more determinative than demand-side ones when defining the appropriate market. TalkTalk agrees with Ofcom's proposals to define a single market based on the ability of 10Gbps operators to substitute quickly into the 1Gbps lines market (and vice versa) in the case of price increases. We also agree that there would be similar supply-side substitution between 10Gbps services and higher bandwidth WDM services.

2.127 With regard to geographic market definition, TalkTalk agrees with Ofcom that presence at exchanges is relevant when defining geographic markets. There will clearly be no demand-side substitution between different BT exchanges, and there are some constraints, particularly on space, which mean that there is not frictionless entry into different exchanges. Entry will also be costly, as it will mean that an operator has to build out its own network to the exchange. Consequently, there will not be supply-side substitution between BT exchanges.

2.128 However, Ofcom has incorrectly looked at presence in a single exchange when determining geographic markets, when in reality an alternative operator would need a presence at both ends of a route between BT exchanges in order to act as a constraint on the pricing of a hypothetical monopolist on that route. Ofcom should therefore define geographic markets based on each route, with an individual geographic market for each route between two BT exchanges.

2.129 As we note below (at §2.132), even though Ofcom assesses SMP by route this overlooks that there will, in some cases, be different CPs at either end of the circuit.

2.130 Ofcom should define geographic markets by route. This would result in about 10,000-12,000 separate markets. This is a tractable number as we describe in the following section. It is also not significantly different to the number of exchanges (5,500) or the number of postcode sectors (10,000) considered by Ofcom in the BCMR.

2.5 SMP Assessment - CI inter-exchange

2.131 As in CI access, Ofcom notes that its assessment of SMP in CI inter-exchange should reflect market shares on a route-by-route basis (§7.42) reflecting that each route is a separate market. However, it notes three significant issues with using route-by-route market shares: data limitations; the fact that many products are regulatory constructs, rather than according with the manner in which operators categorise their networks; and a significant number of routes which would need to be assessed.

2.132 Consequently, Ofcom proposes to use the presence of PCOs at (or just outside) each exchange as a proxy for the level of competition facing BT at each exchange. It then assumes that the level of competition on a route depends on the number of PCOs at each end of the route. Thus, for instance, if there are BT+1 at one end of the route and BT+1 at the other end then the route has 1 rival operator i.e. a BT+1 route. However, Ofcom's approach ignores that for a rival to compete they need to be present at both exchanges[27] - Ofcom's approach effectively assumes that a route is a BT+1 route if only Virgin is present at one end of the route and only Vodafone at the other. Ofcom should correct its analysis to reflect the need for the operator to be the same at both ends.

2.133 In order to do this, Ofcom should adopt the following approach:

- list the PCOs which are present at each exchange in the UK (other than BT, which is present at all exchanges);
- look at all routes which are currently used for inter-exchange connections in the UK (the number of routes is likely to be of the order of 10,000 to 12,000);
- for each of these routes, ascertain which of them link an exchange where there is no PCO present at one or both ends of the link. These links will be characterised as BT+0 links;
- for each route where there are one or more PCOs present at the exchanges at both ends of the route, determine the number of PCOs which are present at both ends of the route. For example, if Exchange A has Virgin Media and Zayo present, and

[27] We understand that backhaul providers do not tend to interconnect and even if they did interconnect this would add cost meaning that they may not be a material constraint on BT's pricing.

Exchange B has Zayo and Colt present, then a route from exchange A to exchange B would be a BT+1 route, due to the presence of Zayo at both exchanges. A similar approach can be taken to assess which routes are BT+2 routes.

2.134 This approach will be suitable for all existing routes, which will be the vast majority of routes used over the two-year regulatory period.

2.135 For new routes (those where there is no current inter-exchange link, but where one is planned), Ofcom could adopt a two-step procedure:

- for all routes where there is a BT+0 exchange at one end of the route, that route will automatically itself be classified as BT+0 route;
- for routes which are BT+1 or more at both ends of the route, there will need to be a specific interrogation of Ofcom's database to determine which category the route falls into. This should not be onerous, as it will be a single database lookup function. In any case, there should not be a large number of such requests; [✂]

2.136 Ofcom proposes to use broadly the same list of PCOs as in the previous BCMR16, encompassing eight firms.[28] TalkTalk agrees with an approach based on a named list of relevant operators. [✂] Furthermore, in line with Ofcom's analysis at §7.76, if an operator is not willing to wholesale to other providers, or stops being willing to do so, it should no longer be considered a PCO from the perspective of Ofcom's market power analysis.

2.137 In light of the need for Ofcom to change its geographic market analysis to reflect the number of rivals on each route, the proposed geographic markets will need to be amended.

2.138 Our view on Ofcom's proposed SMP findings in CI inter-exchange is as follows.

2.139 For broadly the reasons set out at §§7.62-7.65, Ofcom should find that BT has SMP on BT+0 routes;

2.140 For broadly the reasons set out at §§7.66-7.70, Ofcom should find that BT has SMP on BT+1 routes (i.e. where there is one rival on each route, not where there is one rival at each exchange);

2.141 We disagree with Ofcom's conclusion that Openreach does not hold SMP where there are BT+2 rivals on a route (even if Ofcom adjusts its geographic markets to ensure that the rivals are present at both exchanges). Ofcom has set out at §§7.71-7.75 some alleged reasons why BT+2 markets would be competitive. However, the evidence presented is insufficient to reach a finding on this matter. In particular, Ofcom has not conducted economic assessment which demonstrates that pricing and terms at BT+2 exchanges would be the same, in the absence of regulation, as at a hypothetically fully competitive exchange. In this respect it is worth noting that in mobile markets Ofcom considered that moving from four competitors to three competitors would result in a significant lessening of competition, implying that three competitors can be insufficient to protect consumer interests in the communications sector.

[28] CenturyLink, CityFibre, COLT, Eircom, SSE, Virgin Media, Vodafone and Zayo.

2.142 Ofcom should undertake a full competition assessment of whether two operators is generally sufficient to act as an effective competitive constraint, and if not what additional requirements should be put in place. In doing so, it should reflect that:

- some routes between BT+2 exchanges will have fewer than two rivals able to provide a service (if Ofcom does not correct its geographic market analysis);
- the dynamics of the market, [✂] which means that further competition is unlikely; and,
- localised nature of any constraints on Ethernet pricing provided by FTTP networks.

2.6 *Market definition and SMP assessment – data centres*

2.143 At §§7.20-7.23 Ofcom deals with the issue of carrier neutral Data Centres. It sets out that "*in this review we consider that backhaul connections between carrier neutral DCs are part of the trunk segment and are therefore presumed competitive*". It therefore proposes to deregulate carrier neutral DCs.

2.144 TalkTalk notes that Ofcom does not consider carrier neutral DCs within its market definition; it simply assumes them to be part of the inter-exchange segment, for reasons which are left unexplained. This is inadequate and does not fulfil Ofcom's obligation to consult on its proposals:

- it does not set out why it has changed the manner in which it considers carrier neutral DCs from that adopted in BCMR16. Without any such explanation it is impossible to comment effectively on Ofcom's proposals;
- it does not consider whether a hypothetical monopolist of links to and from carrier neutral DCs would be able to increase prices above cost, and therefore what the relevant economic market is for this focal product;
- although Ofcom says that 'most' carrier neutral DCs 'tend to have multiple telecoms providers present', it does not present any data to support this assertion, or reference any other sources. It does not consider whether this applies to all carrier neutral DCs, and whether it should treat carrier neutral DCs differently where they do not have multiple telecoms providers present;
- it does not set out whether there are any carrier neutral DCs where the level of competition is BT+1 (which Ofcom has not found to be competitive in other markets), nor whether these should have a different regulatory treatment;
- Ofcom does not set out details of BT's pricing or levels of profitability for circuits going to or from a carrier neutral DC, in order to assess BT's behaviour; and,
- the market share data for carrier neutral DCs is redacted, without even a range being provided, and it is therefore impossible to comment on whether there should be a presumption that BT holds SMP at these locations.

2.145 Ofcom should therefore develop proper evidenced proposals for carrier neutral DCs and consult on these, so that stakeholders have the ability to comment on its proposals.

3 Overall approach to remedies

3.1 In this section we discuss the overall approach Ofcom should adopt in light of its pro-investment goals when designing BCMR regulation to address Openreach's SMP and protect consumers' interests. We also provide a discussion of how investment might be affected by higher prices. Our comments on the specific proposed remedies follow in sections 4 to 7.

3.1 Approach and principles to set remedies

3.2 Ofcom's previous regulatory strategy has been to encourage intense competition in downstream markets. Ofcom typically did this by requiring Openreach to provide effective upstream products (e.g. LLU and wholesale Ethernet) on the basis of regulation including cost-based prices[29], equivalence and QoS obligations. This has delivered significant consumer benefits, including wide choice of providers and high quality services at low prices. It has also allowed network investment to take place, most notably, by leased line network providers and, in recent years, from CityFibre.

3.3 Ofcom has set out its desire to encourage more network investment, particularly in FTTP networks[30]. We agree with this objective, so long as the consumer benefits from investment (such as improved services) are quantified and outweigh the costs to consumers and competition.

3.4 Reflecting its desire for more investment, Ofcom is now considering how it should adapt regulation to accelerate FTTH roll-out. This revised regulation must be designed in a way that recognises the harm to business and residential customers that weakened regulation can cause. For instance, Ofcom might consider stimulating investment by setting wholesale price caps above cost (i.e. relaxing regulation) but this will result in harm to consumers through inflated retail prices and weakened downstream competition. Therefore, in pursuing its strategy to create a more pro-investment climate Ofcom must – in line with its duties – be mindful of and protect consumers' interests, ensuring that the benefits of network investment outweigh any costs from higher prices and weakened downstream competition. Network investment is not an end in itself but rather a means to deliver benefits to consumers and businesses.

3.5 In particular, there are a number of steps Ofcom must take in order to ensure that any relaxed regulation protects consumers' interests.

[29] Although in practice Ofcom has consistently allowed BT to over-recover its cost by around £1bn a year or about 15%. Some of this delivered consumer benefits e.g. encouraging Openreach FTTC investment but most was simply a cost to consumers. The key exception to cost-based prices has been GEA(FTTC) regulation whereby for 8 years (2010-2018) Ofcom set no charge control and then in 2018 Ofcom imposed regulation but only of the 40/10 product. The purpose of this was to provide Openreach incentives to invest in FTTC network

[30] For example: "*In our Strategic Review of Digital Communications of 25 February 2016 ('the DCR'), we set out how we would promote investment and competition to deliver better broadband wherever people live or work*" Ofcom (2018), *Regulatory certainty to support investment in full-fibre broadband*, Strategic Policy Position, July, at §1.1

3.6 First, Ofcom must include and assess all the impacts from relaxed regulation – adverse and possible unintended ones as well as the intended ones. For instance, its assessment should include negative effects from allowing higher wholesale prices including:

- higher retail prices;
- weakened downstream competition;
- reduced altnet network investment caused through two mechanisms:
  - [✂]
  - relaxed regulation will reduce operator margins and thus, given capital market constraints, will limit funds available for altnet network investment.
- reduced altnet network investment will cause a reduction in Openreach investment given Openreach's incentive to invest in FTTP network in large part depends on the actual and perceived threat of altnet network investment.

3.7 Ofcom cannot just ignore these adverse effects.

3.8 Second, Ofcom's analysis should only reflect the *incremental* or *additional* investment (increase or decrease) that is caused by its regulatory approach. It would be fundamentally incorrect to attribute all future network investment to Ofcom's proposed new regulatory approach. Rather, Ofcom needs to assess how much additional investment would be caused by its proposed weak regulation approach. In this respect it is notable that network investment is occurring apace under the previous regulatory model e.g. prices based on costs and expectation of DFA being introduced and DPA becoming unrestricted. Ofcom have highlighted that in the last year or so about £1bn of new network investment has been committed. Some of this additional investment will serve leased line customers by operators such as Virgin and CityFibre. Similarly, dedicated rival leased line networks have been expanding for many years. It would be fundamentally wrong for Ofcom to accredit investment that was anyway happening now or in the future to a new deregulatory approach. In this context it is important to properly assess the impact of removing restrictions on DPA use. The fact that removing DPA restrictions may increase network investment is not in itself a reason to weaken regulation – rather the question is whether removing DPA restrictions makes network investment *more* sensitive to weakened regulation.

3.9 Third, Ofcom must reflect in its analysis that investment in additional leased line networks will have relatively limited consumer benefit. Whilst additional FTTP networks are likely to deliver significant consumer benefits to both households and businesses through improved broadband services, at a quality that cannot be provided over copper or FTTC networks, additional leased line networks deliver fewer benefits to consumers[31] since (unlike FTTP) Openreach already has a ubiquitous full fibre leased line network that consumers and businesses can access through Ofcom's existing remedies (such as Ethernet and, in the future, dark fibre). It would be wrong and naïve to elide the benefits from additional FTTP

[31] It may be possible that additional leased line network investment stimulates FTTP network investment due to sharing of costs (e.g. economies of scope). However, the impact of this is likely to be diminished since the opportunity for sharing costs is limited by the fact that leased line networks need to cover different areas (e.g. CBDs, business parks) to FTTP networks built in residential areas. Furthermore, some of the companies building leased line networks are not interested in providing FTTP/GPON services

and leased line networks (just because they both involve 'full fibre'), particularly since these networks are likely to remain in separate product markets for the foreseeable future. The benefits from investment in leased line networks differ significantly and regulation must reflect this. Ofcom recognised this difference in BCMR16[32]. There is no reason why this difference does not apply today.

3.10 Fourth, harm to consumers can (and should) be reduced by focussing regulatory relaxation on those geographic areas and periods where there is evidence that network investment is likely to be significantly stimulated by relaxed regulation. There can be no case for relaxed regulation in areas where such regulation is unlikely to stimulate a material increase in investment; such an approach will lead to costs without any material countervailing benefits, let alone benefits that exceed the costs. Similarly, investors care about market conditions only at and after the time when they are planning to commercially market their services; an investor considering a network investment in 2022 will have no concern with market conditions in 2020 since it will not affect the return on their investment. Thus, there can be no benefit to relaxing regulation in an area prior to when investment might occur since it will not increase investment returns. Rather, relaxing regulation in an area prior to when investment might occur in that area will reduce altnet investment since it will erode the scale that altnet investments depend on for their viability.

3.11 Fifth, given the significant potential harm to consumers that will result from ill-judged regulation, Ofcom should set out and properly evaluate (with evidence) the costs and benefits to consumers of different regulation rather than jump to an answer without due consideration of the different options and their impacts. Before embarking on a new regulatory approach it must be confident, and demonstrate, that the benefits are likely to outweigh the costs. The costs and benefits should be estimated in financial terms for consumers over the long term, and as much detail of the underlying model as is possible should be published (without violating legitimate confidentiality).

3.12 Finally, Ofcom should set regulation to address protect consumer interests in the two years covered by the review period, rather than making any assumptions as to the form of regulation in the subsequent review covering the period 2021-2026. Basing regulation in the BCMR based on regulation it thinks it might impose after 2021 would amount to prejudice on the part of Ofcom.

3.13 Whilst Ofcom's new 'pro-investment' strategy is settled, the particular regulation that it should or will impose in the Access Review to deliver on that strategy consistent with its principal duty to serve consumer interests is far from settled or agreed. Ofcom has yet to explain, justify or consult on that regulation. Thus, if Ofcom were to set any aspect of regulation in the BCMR based on its current view of the regulation it expects to set in its Access Review in 2021 (which it has yet to explain, justify or consult on) then it is prejudging the outcome of its Access Review consultation process.

[32] BCMR16 vol 1 §7.40. "*We also recognised that duct access could allow CPs to invest in fibre in areas where BT had not done so. However, we noted that BT currently offers to provide fibre leased lines anywhere in the UK, subject to excess construction charges, and therefore considered that this potential benefit of duct access would be less relevant to leased lines than to residential broadband services.*"

3.14 Such an approach would breach Ofcom's public law duty to consult and to do so when the proposals are *inter alia* at a formative stage[33]. It would also disregard Ofcom's own regulatory principles such as to:

> *"strive to ensure our interventions will be evidence-based, proportionate, consistent, accountable and transparent in both deliberation and outcome"*[34]
>
> *"consult widely with all relevant stakeholders and assess the impact of regulatory action before imposing regulation on a market"*[35]

3.15 Overall, therefore, Ofcom's approach should be rigorous and analytical, weighing up different options for regulatory change in terms of both their costs and benefits specific to leased line networks, and then choosing the option(s) which maximise the net benefits (including quantitative analysis). If there are no options for regulation for which the benefits outweigh the costs, Ofcom should leave the current regulatory approach unchanged.

3.16 We consider that Ofcom's BCMR proposals do not reflect this 'best practice' – for instance: Ofcom has made a radical change in approach (e.g. relaxed regulation including above cost charges) without outlining the headline options for regulatory change which it considered[36]; Ofcom has ignored many of the adverse impacts on consumers of relaxed regulation; Ofcom has not recognised that additional leased line networks investment deliver lower consumer benefits than additional FTTP network investment; and, there has been no proper attempt to assess whether DFA is preferable to stimulating network investment. Ofcom should conduct this type of analysis before reaching final conclusions. In the section below we describe some of the analysis that Ofcom should consider when assessing how to stimulate investment.

3.2 Ofcom has misunderstood how investment can be stimulated

3.17 It is striking that, given that Ofcom's primary goal is to enhance investment in fibre-based networks, and that its BCMR regulation is predominantly aimed at that goal, Ofcom does not explicitly set out what stimulates investment (or the drivers of investment) anywhere in its consultation. The closest any section comes to dealing with this is section 10, but this talks in generalities and does not address the link between pricing and investment.

3.18 Equally, Ofcom's July 2018 'Strategic Policy Position' (which was not consulted on) does not discuss the theoretical underpinnings of Ofcom's apparent position that higher prices will lead to greater investment. Ofcom's paper almost exclusively deals with the transition from *'copper to fibre networks'*, which is not a relevant consideration in CI leased line markets

---

[33] Ofcom has public law duty to consult prior to reaching a decision and to do so in accordance with the Gunning principles which are: consultation must take place when the proposal is still at a formative stage; sufficient reasons must be put forward for the proposal to allow for intelligent consideration and response; adequate time must be given for consideration and response; and, the product of consultation must be conscientiously taken into account

[34] For example, see https://www.ofcom.org.uk/about-ofcom/what-is-ofcom/enforcement-statement

[35] For example, see Ofcom (2012), *Enforcement Guidelines, Ofcom's guidelines for the handling of competition complaints and complaints concerning regulatory rules*, July, at §1.18

[36] Ofcom has suggested to us that the analysis was provided in previous document e.g. the July 2018 Strategic Policy Position. We would encourage Ofcom to read these since they include no such analysis.

which are based exclusively on fibre. Indeed, given that the document is so heavily focussed on access FTTP networks, it does not seem to have any meaningful relevance for the current consultation.

3.19 In particular, Ofcom does not discuss the linkage between the price of leased line products and the potential for entry and investment into the leased line market. This is a central omission from Ofcom's consultation; without such a discussion, it is difficult to sensibly interpret Ofcom's proposed regulation as set out in its consultation.

3.2.1 *The theoretical link between pricing and investment is weak*

3.20 Ofcom has not in any of its publications or consultations in recent years set out a clear case that higher prices, and therefore margins, in a particular market will increase levels of investment in that market.

3.21 One potential reason for this is that there is little evidence that higher margins in a market stimulate greater levels of investment within that market. There are several reasons why the evidence in this regard is weak and ambiguous. This subsection sets out a taxonomy of such reasons, several of which apply to the current BCMR; it is, however, intended to be general.

3.22 Firstly, higher margins tend to be associated with less competitive market structures, and there is little consistent evidence that less competitive markets generate increased investment. As WIK set out in a recent paper for Ofcom regarding investment in mobile markets:

> *Economic theory suggests ambiguous effects of competition on investment… On the basis of our own analysis including econometric assessments … we have found no linkage between consolidation or higher concentration in mobile markets and an increase in investment.*[37]

3.23 Indeed, there is a considerable economic literature which sets out that competition may stimulate investment, with investment races to obtain patents earlier than would be the case under conditions of monopoly, and a more urgent need to bring forward investments which reduce costs or increase capacity to serve new markets which would otherwise be lose to competitors.

3.24 Second, what is important is not margins at the time when an investment is being considered, but margins at the time when that investment has been completed and the products. That is, it is not the *current* notional profitability on a hypothetical investment which matters, but the *expected future* profitability of the investment, at all future points in time.

3.25 Third, such an analysis fails to distinguish between different types of investment, which may be stimulated differently by margins. Firms may undertake investment projects for a range of reasons, including efficiency enhancing investments (designed to lower incremental costs), quality enhancing investments (designed to increase product quality at unchanged costs), capacity enhancing investments (designed to increase the number of customers which can be supplied by a firm) and investments in innovation (predominantly in research

[37] WIK (2015), *Competition & Investment: An analysis of the drivers of investment and consumer welfare in mobile telecommunications*, page IV

and development which leads to patentable new products or processes). These different types of investment will be impacted differently by prices. For example, efficiency enhancing investments are likely to be more attractive when margins are *lower*, as they will have a greater proportionate impact on a firm's profits. Indeed, in a competitive market where other firms are making efficiency enhancing investments, such investment may be a condition of remaining in the market. On the other hand, investments in new categories of drugs are unlikely to be in any way impacted by current prices, as they will not be close substitutes for existing drugs currently on the market.

3.26 Fourth, irrespective of incentives, there may be cases where it is the ability to raise capital which restricts investment, rather than the return on investment. Once naïve assumptions regarding perfect capital markets are dispensed with, levels of investment become at least partly contingent on levels of retained earnings of firms, which may or may not be increased by a particular price level (depending upon whether the potential investor is already active in that market, is in a related market, or is a downstream customer of that market). As Hubbard (1998) says:

> *all else being equal, investment is significantly correlated with proxies for changes in net worth or internal funds; and (2) that correlation is most important for firms likely to face information related capital-market imperfections.*[38]

3.27 This is particularly likely to be important when a particular category of potential investors has low access to retained profits; it will be a lesser concern for potential investors who could already substantially finance their investment programmes through retained earnings.

3.28 Finally, for an incumbent operator which is undertaking replacement-type investments (that is, an investment that will render existing capital assets obsolete), there is a further round of concerns. Notably, the opportunity cost of the lost profits from existing assets will also need to be taken into account when it determines whether to invest, and will raise the hurdle rate for undertaking the new investment. The exception to this is when the existing assets are reaching the end of their economically viable lifetime, when the need to replace the existing assets in any case will lower the opportunity cost. In the case of leased lines, where additional network investment by BT is not an objective, this consideration is not relevant (whereas, it is highly relevant for FTTP).

3.29 The combination of these factors points to a much more complex theoretical structure for likely levels of investment than a simple relationship that implies that higher prices will lead to greater investment. In light of that theoretic framework, we now move on to consider the specificities of the leased lines market.

3.2.2 *Higher prices are unlikely to lead to increased investment in leased lines*

3.30 Section 3.2.1 set out general theoretical concerns regarding levels of investment which apply to all economic markets. This section moves on to discuss the specific impacts of these theoretical considerations in the practical case of leased lines market, the subject of Ofcom's current consultation.

[38] Hubbard, G. (1998), *Capital-Market Imperfections and Investment*, Journal of Economic Literature 36(1), pp. 193-225

3.31 In the current consultation, Ofcom is only setting prices for the two years until March 2021. Due to established principles of public law, it cannot bind its hands beyond that point, and must consult properly at the time of the Access Review, which will set regulation after 2021. All options are available to it, including starting charge adjustments, and Ofcom's behaviour in these proposals imply that there is little or no value in Ofcom's regulatory precedent. There is consequently mechanistic manner in which the current BCMR can impact pricing from April 2021 onwards, and it is unlikely to change market participants' expectations of pricing.[39]

3.32 The proposed prices above cost in the current consultation will therefore only increase investment to the extent that the following conditions are met:

- there is an investment which can be completed before March 2021;
- that investment has either not yet been started, or if it has been started can be significantly rescoped and expanded;
- that investment is in leased line markets;
- the investment would be above the investing firm's hurdle rate with prices above cost, but below the investing firm's hurdle rate with prices at cost.

3.33 It is important to note that the ability of the current review to change returns on investment is likely to be very limited indeed. Leased line assets have long lives, often ten years or longer. They also take a considerable period of time to plan, obtain planning permission for, and then construct.

3.34 The combination of these features mean that it is implausible that in the current review, Ofcom's regulation will have more than a negligible impact on investment in leased line networks.

3.35 However, even if the current review period were five years in length, it is still unlikely that Ofcom's regulation could have a meaningful impact on incentives to invest. This is because Ofcom sets a price cap (rather than a price floor) and effective scale entry will significantly increase competition. Consequently, large scale entry will change the profit-maximising price for BT, and it is likely to cut prices substantially to meet the entrant.[40]

3.36 This is particularly likely since BT faces something very close to the chain store paradox.[41] [42] BT will be able to earn higher profits, and generally be more easily able to fulfil its strategic

[39] Unless there is another lacuna following the current BCMR, and the charge controls set by Ofcom in the current review period therefore have to be rolled over in some manner.

[40] There is no uniform pricing obligation in this review, which could address this issue (albeit while raising serious concerns that Ofcom had mis-defined markets).

[41] The chain store paradox is a well-known economic conundrum, much discussed in the literature, regarding the reaction of a monopolist which faces the prospect of sequential entry in a series of discrete local markets. The upshot of this literature is that the incumbent is generally thought likely to aggressively fight entry in the early markets where it faces sequential entry, even where the number of markets is finite, in order to deter entry in later markets through reputational effects.

[42] Indeed, in Selten's original paper there were only 20 towns in which there was potential entry. As BT has a leased line presence in far more than 20 discrete parts of the country, the results of Selten's paper, and the subsequent academic debate, are only strengthened. See Selten, R. (1978), *The Chain Store Paradox*, Theory and Decision 9(2), pp. 127-159.

objectives, if it retains a monopoly position in most areas of the UK. In order to retain this monopoly position BT will have strong incentives to behave aggressively towards entrants, cutting prices to a level at which entrants are unable to earn their long-run cost of capital, and so deterring entry from occurring. This is particularly likely since many of the most profitable areas for entrants, like central London and central Manchester, have already seen entry, and so potential future areas are likely to have more marginal economics.

3.37 There is hence likely to be a substantial divorce between pre-entry and post-entry pricing, which softening price caps does nothing to solve. Ofcom's current intellectual framework appears, without justification, to assume that BT will always price up to the regulatory price cap. If it does not do so, then Ofcom's policy of increasing prices and margins will fail to generate additional investment.

3.38 The scale of the addressable market will be a further core concern of potential investors in additional or new network infrastructure. This addressable market is not just the density of customers in a particular area, which Ofcom will be unable to impact through its regulatory policy. It also includes the downstream market structure. In particular, larger market shares held by vertically integrated operators will act as a deterrent to investment, as these operators are unlikely to sign agreements with entrant network operators to port their existing customer bases across. In contrast, market shares held by altnets who do not own network assets in an area may be able to be quickly migrated across to a new network, underpinning its volumes and therefore revenue, and enhancing the expected profitability of investment. Other things being equal, therefore, it would be expected that there would be more investment in a market where a greater market share is held by altnet retail operators which do not own their own network assets.[43] This means that, if higher prices weaken competition and altnet market share, rival network investment will reduce.

3.39 Ofcom also fails to distinguish between different types of investment, and the changes to incentives that these different types of investment will cause. Digging new leased line networks amounts to almost pure investment in capacity; it will not increase quality (the technology is the same as BT's existing ethernet products), is not investment in innovation (leased line networks are well known already) and will not enhance efficiency (if anything they will reduce efficiency through duplication and loss of economies of scale and density). The situation is therefore very different from investment in new FTTP networks, which improves quality through higher speeds and lower fault rates, and improves efficiency through lower cost to serve, as well as increasing capacity.

3.40 Given the substantial difference in the type of investment represented by new leased line networks, compared to new FTTP networks, Ofcom cannot simply assume that the impact of price on investment will be the same. The different circumstances require different analysis, further reinforcing the view that Ofcom should place no weight on its July 2018 paper in this BCMR.

3.41 Finally, in this case several of the potential investors in leased lines networks currently purchase lines from BT in order to fill in gaps in their networks (for example, where a customer needs regional or national coverage for a particular contract, but does not serve all areas required). By increasing prices for leased lines, the profits on lines bought from BT will

[43] This can be seen in decisions such as TalkTalk's agreement to wholesale to Sky over our York FTTP network, and CityFibre's pre-agreement with Vodafone for their Milton Keynes roll-out.

be lower, and therefore the retained earnings of these operators will be lower. As pointed out above, lower retained earnings tend to lead to lower levels of investment.

3.2.3 *Uncertainty reduces investment*

3.42 One area in which Ofcom is correct is that uncertainty and regulatory risk will reduce investment. However, Ofcom's definitions of uncertainty and risk appear to be rather different to those usually considered in discussions of investment.

3.43 In general, regulatory stability means that:

- the regulator has an approach which slowly evolves over time, rather than being subject to substantial shifts;
- regulatory outcomes are well understood and can be predicted by investors well in advance; and,
- price caps are in line with this methodology and set well ahead of time.

3.44 Ofcom's current approach fulfils none of these criteria:

- Ofcom's approach in this review is revolutionary, moving from cost based price caps to price caps around £250m per annum above costs in a two year period;
- Ofcom has conducted minimal consultation on this change of approach. The July 2018 paper did not deal with leased line markets and did not set out any detail of what Ofcom's strategic objective of fostering investment would mean for price caps. Ofcom's initial consultation in this review cycle came less than six months before the previous caps were due to expire; and,
- Ofcom is likely to leave a lacuna after the current period, fostering regulatory risk, and there are substantial flaws in its approach which, along with the radical change of direction, make appeals likely. The approach adopted seems unlikely to support Ofcom's goal of fostering investment.

3.45 Ofcom's proposed change of approach therefore seems likely to reduce, rather than increase, the levels of certainty and stability in leased line regulation. Other things being equal, it would therefore be expected to reduce the level of investment.

3.2.4 *Passive access could increase investment, but this may not benefit consumers*

3.46 As set out earlier, Ofcom's policy goal has been to increase investment, but it has failed to link this to consumer outcomes. Passive access may be able to lead to such increases in investment; in particular, if it leads to lower costs of network roll-out, this would tend to lead to greater investment. This issue will be dealt with in more detail in TalkTalk's separate forthcoming response to Ofcom's PIMR consultation.

3.47 However, if leased line markets are considered independently from access markets, it is unlikely that DPA will benefit consumers. Consumers could obtain all of the benefits which DPA can bring via a dark fibre remedy; as set out at section 4 of this document, all of the scope for innovation and product improvement is in the active layer. The increased

expenditure on network roll-out will therefore be essentially wasted, as the same gains could be made without a need to incur this expenditure.

3.48 Within the context of the BCMR, therefore, DPA may or may not enhance investment, but even if it does so, this is unlikely to benefit consumers.

3.2.5 *Conclusions on drivers of investment*

3.49 Overall, therefore, Ofcom has not only failed to make good its case that higher prices will increase investment, but has failed to set out such a case in the first place. Indeed, detailed analysis of the market demonstrates that the regulatory approach currently set out by Ofcom may in fact decrease investment: it adds to regulatory uncertainty and risk, while being over a sufficiently short period that it is unlikely to meaningfully change investment incentives. Meanwhile, it also transfers significant sums of money from altnets (who are potential investors in leased line networks), reducing their retained earnings and so likely levels of investment. Even if higher ethernet prices will somewhat increase investment – and Ofcom has not demonstrated that would be the case – then Ofcom may still be harming consumers by adopting such a policy.

3.50 Similarly, withholding DFA might stimulate slightly more investment but it would not be in consumer interests.

3.51 As such, if Ofcom wishes to make a case that prices in excess of costs will increase investment, it should do so explicitly and in a manner which is open to critique, because economic intuition and evidence seems unlikely to support Ofcom's proposals.

4 DFA remedy

4.1 Ofcom has proposed imposing DFA in a very small part of the CI market – specifically the CI inter-exchange market to/from BT+0 exchanges, which accounts for about 5%[44] of Openreach circuits and will tend to be on lower capacity routes[45]. We think that there is a clear and strong case for imposing DFA much more widely. In this section we explain the reasons underlying our conclusion and address related issues. The key sections are:

- the relative benefits of competition based on DFA versus competition based on Ethernet / active services.
- the consumer benefit of imposing DFA at cost rather than Ethernet at prices above cost
- Ofcom's other reasons for not imposing DFA
- our view on the economic markets in which DFA should be imposed

[44] This is based on TalkTalk's estimate of the total number of inter-exchange circuits (which are principally used by operators who have unbundled exchanges for using LLU or EDA-LA products); the proportion of these that are to/from a BT+0 exchange; and the total number of Openreach circuits.

[45] The bandwidth requirement will tend to be lower to/from exchanges which have fewer rivals, since rivals will tend to focus on exchanges with high bandwidth demand, as these will be most profitable to serve.

- lastly, we comment on other aspects of DFA regulation.

4.1 Comparison of DFA-based competition versus Ethernet based competition

4.2 Compared to competition based on Ethernet remedies, competition based on DFA exposes more of the value chain (and in particular the active layer) to competition.

4.3 Ofcom outlines a number of benefits that result from Openreach providing DFA including: choice over active equipment; upgrade costs reflecting underlying costs; reduced equipment duplication; and, quicker implementation of innovation (§§12.7-12.29). We agree with these points. We also agree with Ofcom's conclusion that DFA-based competition delivers substantial benefits over Ethernet-based competition:

> *Access to dark fibre in inter-exchange connectivity would provide users with a more flexible input to downstream [*Ethernet*] services. This has the potential to deliver several benefits … [*which*] would in turn allow providers to better compete on price, service quality and product offering in downstream markets* (§12.5)

4.4 However, we consider that Ofcom's assessment has omitted a number of additional benefits which make the case for imposing DFA even more compelling than on Ofcom's assessment.

- Ofcom highlights the ability for operators to choose their own electronic equipment which enables greater innovation. It is important to recognise that innovation results not just from deploying new technologies but also through developing new services in terms of speeds, packages, latency, features, pricing structures[46], quality[47] and lower costs (leading to lower prices). An important innovation is what TalkTalk refer to as 'utility connectivity': simple, flexible and low priced upgrades in bandwidth across a greater range of increments (e.g. 100Mbps, 500Mbps, 1Gbps, 2Gbps, 4Gbps or 10Gbps rather than just 100Mbps, 1Gbps or 10Gbps) without costly truck roll, downtime or delays for installation where upgrade is required. This is simply not possible with today's active products where the only way to upgrade above 1Gbps (say) is in a tenfold jump in speed to 10Gbps which costs 2.5 times as much and requires downtime and a new installation.
- With DFA, downstream competition will be more effective (than a counter-factual with competition based on Ethernet) since operators will be able to innovate and differentiate their products to a greater degree. Customers will benefit from greater choice and having their needs – in particular, trade-offs between price and the various elements of quality – more closely met. This will particularly be the case as operators are likely to use DFA to develop more bespoke propositions for their business customers.
- Regarding productive efficiency, Ofcom highlighted the benefits of DFA from reduced equipment duplication. However, significant other productive efficiencies are also likely to arise from CPs reducing active layer costs in other ways, such as using different equipment suppliers and adopting different approaches to the operation of

[46] For example: usage based tariffs; burstable speeds; 'pre-upgrade'; different contract terms; different minimum term; balance of connection and rental charges

[47] For example: lower fault rate and/or more rapid repair of faults in active equipment through for instance: more reliable equipment; better monitoring and proactive maintenance; hot standby; better fault handling; more engineers; added resilience

maintenance, monitoring and repair. CPs will have strong incentives to reduce the costs of providing the active layer without sacrificing quality in order to increase margins and gain competitive advantage. Competition in the active layer will also incentivise Openreach to reduce its active layer costs (and/or improve quality) since competition will provide higher powered cost reduction incentives than a charge control.

- In time Ofcom should be able to move to regulation of only DFA and remove regulation of active services (e.g. EAD). This will result in simpler and more predictable regulation than in the current situation where only active products are regulated. Regulation of active products is necessarily more complex than regulation of DFA since it involves, for example, products at multiple bandwidths, different technologies and the need to assess an MEA. DFA does not have these complexities.
- DFA also reduces the risk of consumer harm arising from anti-competitive discrimination since there is less product variation – for example, BT cannot discriminate on product speeds as it will no longer control them.

4.5 Given these significant benefits, the starting presumption must be that the benefits of DFA will outweigh the costs. Compelling evidence of significant costs or risks would be required to rebut this presumption.[48] We comment below on the costs and risks that Ofcom highlight.

4.6 In BCMR16[49] Ofcom suggested that DFA would lead to certain costs and risks: allocative inefficiency; disruption; arbitrage; cost under-recovery; detrimental changes in market structure; and, implementation costs[50]. These were for the most part either illusory or immaterial. In this market review Ofcom has rightly rejected most of its previous claims about the risks and costs of DFA. Unfortunately customers have been deprived of the benefits of DFA in the interim[51].

4.7 We agree with Ofcom's conclusion in this BCMR that the risks and costs of DFA are not significant and are outweighed by the benefits. Regarding Ofcom's assessment of risks and costs we have the following comments:

- Ofcom say there is "*minimal evidence*" that the flattening of the bandwidth gradient (to cost reflective price differences) will adversely impact allocative efficiency (§12.37). We disagree – as far as we understand there is no evidence of an adverse impact. Rather given the current very steep existing price gradient it is more likely

[48] Ideally, Ofcom should undertake a full cost-benefit analysis of the relative costs and benefits of introducing unrestricted DFA, putting monetary values on each of the benefits and costs. However, if Ofcom chooses not to adopt this approach, and instead use a qualitative assessment, the opening presumption must be that the benefits of unrestricted DFA outweigh the costs, unless some specific and significant costs additional to those previously outlined by Ofcom are identified.

[49] BCMR April 2016 §A19.2

[50] Development costs are less £5-10m per year (exact amount redacted – £5-10m range based on BCMR April 2016 §A33.295 and §33.301). Thus annualised cost about £1-2m. Openreach CISBO costs in FY17 were are £675m. Openreach has 57% market share in rest of UK (see BCMR Mar 2016 Vol 1 §4.554) which implies that total CISBO market costs well over £1,000m

[51] If Ofcom had not over-played the costs/risks Ofcom would have imposed cost based DFA prices (instead of active minus) and the DFA remedy would have been imposed in the Temporary Conditions. The reason that DFA was withdrawn in the Temporary Conditions was that under active minus there was limited demand for using DFA for 1G services (DFA was restricted to 1G and below)

that allocative efficiency will improve through flattening (as Ofcom itself says in §12.42). Ofcom is correct that the current Openreach pricing structure is not enhancing sales volumes (§10.24). Openreach has, in any case, presented no evidence that its current pricing structure aligns with Ramsey pricing principles, and Ofcom should not assume that it does align in the absence of evidence given the many reasons for Openreach to adopt non-Ramsey prices (e.g. 10G prices are unregulated whereas 1G and below prices are regulated).

- Ofcom's analysis of arbitrage focuses on distance based arbitrage. Ofcom should not be concerned with distance-based 'arbitrage' since it is likely to be efficiency-enhancing. If BT's costs are related to line length, then customers taking DFA on the shorter lines will encourage BT to set a cost structure which is more closely related to economic costs thereby increasing allocative efficiency. Previously in 2016 Ofcom seemed (wrongly) concerned with arbitrage at different speeds. This was not a genuine concern since Openreach would rebalance prices to avoid such arbitrage.

4.8 Ofcom has rightly rejected the notion that OSA-filter connect ("OSA-FC") could deliver the benefits of DFA.

- currently the unregulated price of OSA-FC is over five times[52] that of the proposed DFA which means that OSA-FC would only be viable in a subset of the circumstances where DFA could be used.
- an alternative could be to require Openreach to provide OSA-FC at cost (instead of DFA at cost). Though better than the current situation where the OSA-FC price is unregulated (and DFA is not imposed in the vast majority of the markets) this would still be inferior to imposing DFA widely. In particular, OSA-FC involves the mandatory use of WDM and active equipment to partition the fibre into multiple wavelengths and provide 10G Ethernet over one wavelength – this adds unnecessary cost and limits the innovation that the CP can provide.[53]
- if there are genuine benefits from Openreach monitoring the circuit, as in OSA-FC, then the pro-consumer regulatory approach would be to require Openreach to offer standard DFA as well as a 'monitored' variant of DFA[54] (with the prices of both being set at cost). This will ensure that this extra equipment for monitoring is only used where the benefits outweigh costs. Ofcom should support this approach since it allows consumers of leased lines to choose between efficiently-priced alternatives, rather than having their choices dictated to them by Openreach.

4.9 It is clear that DFA-based competition is superior to Ethernet-based competition – there are substantial benefits from DFA and the costs are small. DFA is also superior to OSA-FC. The implication of this is that, where downstream regulation is necessary to protect consumer

[52] The comparison is OSA-FC price to DFA price plus non-domestic rate (NDR) cost since when a CP purchases DFA they are liable for the NDR cost

[53] In many cases the WDM equipment will be unnecessary gold plating e.g. if a customer needs 1G today and 10G in future there is no need for WDM equipment. If the CP uses the 10G bearer they will not be able to innovate the active layer as they can with DFA; if the CP does not use the 10G bearer then this equipment will be wasted i.e. productive inefficiency

[54] Technically, monitored DFA would involve Openreach installing WDM equipment and lighting one wavelength on a DFA circuit to allow monitoring

interests against BT exploiting SMP, Ofcom should prefer regulated access to DFA rather than regulated access to Ethernet[55].

4.10 Ofcom should therefore seek, over this review period and the next one, to move away from Ethernet/active regulation and towards widespread use of DFA wherever downstream regulation is required, only retaining Ethernet regulation where it is necessary to protect customers' interests during the transition.

4.2 Consumer benefit from imposing DFA at cost

4.11 Ofcom has proposed not imposing DFA in the vast majority of cases (i.e. all except certain CI inter-exchange routes which is about 5% of circuits) and instead proposes to require Openreach to provide Ethernet services with prices set[56] about 20%[57] above cost (and no DFA).

4.12 This implies that Ofcom believes that Ethernet with prices 20% above cost and almost no DFA will deliver greater net consumer benefits than widely imposing DFA at cost.

4.13 Reflecting Ofcom's desire to stimulate network investment, it proposes not imposing DFA in areas where it thinks there is a small possibility of network-based competition:

> *We are taking a conservative approach and therefore consider dark fibre is currently only appropriate where material rival investment is very unlikely. (§12.77)*
>
> *Our view is that unrestricted infrastructure access significantly increases the likelihood that new access networks will be built. In order to avoid an overlap with areas where competing access networks will emerge we are not proposing to extend our proposed dark fibre remedy to CI Access services (§10.27)*

4.14 We consider that Ofcom's reasoning is flawed and that, in at least the substantial majority of areas, customers' interests will be better met by imposing DFA (with prices at cost) rather than Ethernet (with prices 20% above cost) and no DFA in most areas. Below we explain why DFA (with prices at cost) is superior to Ethernet (with prices 20% above cost). We do this in two logical stages:

- First, why DFA (with prices 20% above cost) is superior to Ethernet (with prices 20% above cost)
- Second, why DFA (with prices at cost) is superior to DFA (with prices 20% above cost)

[55] Given that Ethernet is in place today (and not DFA) there will also be a need for Ethernet to be imposed whilst customers transition to DFA

[56] We assume that where a price are set (say) 20% above cost then Openreach price at this level. If this were not the case since, for example, Openreach reduced prices to predate competition then we assume a mechanism is imposed to prevent this e.g. a price floor

[57] Based on Ofcom cost forecasts and data we estimate that <=1G prices will be £60m above cost in FY20/21 and VHB £189m above cost – a total of £249m. Using TalkTalk's WACC/efficiency assumptions prices would be £316m above cost. In FY21 the prices will be 18% above cost (using Ofcom's assumptions) and 23% (using TalkTalk's assumptions). Throughout this document we refer to prices being 20% above cost. The difference between prices and costs presumes that a glidepath is applied to <=1Gbos services and a starting charge adjustment to VHB services.

4.15 Together these two steps (if true) imply that consumers' interests will be better met by imposing DFA (with prices at cost) rather than no DFA and Ethernet (prices 20% above cost). We note that even where DFA is imposed, Ethernet regulation will be required during a transition period as customers migrate to using DFA so that DFA provides sufficient constraint on Ethernet pricing, particularly for the customer back book.

4.16 We describe the two logical steps below.

4.17 The first step is why DFA (with prices 20% above cost) is superior to Ethernet (with prices 20% above cost). Ofcom itself rightly concludes that DFA-based competition is superior to Ethernet-based competition since it exposes more of the value chain to competition resulting in improvements in innovation and productive efficiency (see section 4.1 above). It follows from this that consumer benefits would be greater from DFA (with prices 20% above cost) rather than Ethernet (with prices 20% above cost)[58]. Thus the first step in the logic holds on Ofcom's own evidence.

4.18 The second step is whether consumer benefit would be greater with DFA with prices at cost than DFA with prices 20% above cost. This is a more complex analysis since there are multiple effects resulting from an increase in DFA prices. Below we describe the impacts of higher DFA prices (both positive and negative) and then assess the overall impact on consumer benefits including the results of some modelling.

4.19 The analysis is based on comparing a counterfactual where DFA prices are set at cost and a factual where DFA prices are set 20% above cost. In the counterfactual it is likely that there will be several scale players using DFA[59] alongside BT itself resulting in strong competition between these DFA based providers.

4.20 If, compared to this counterfactual, DFA prices were set 20% above cost there would be a number of incremental impacts. These are described below.

Direct impact on consumers

4.21 Some of the wholesale DFA price rise (we estimate about 70% in this case[60]) will be immediately passed through into higher retail prices.

[58] We know of no reason for this conclusion not to hold

[59] We understand that there are 10s of operators who consume its wholesale Ethernet services. DFA has slightly higher scale economies than Ethernet that might result in slightly fewer operators using DFA. During the BCMR in 2016 and subsequently in the development of the DFA product there were about 10 players actively involved who were strongly interested in using DFA including: TalkTalk, Vodafone, COLT, O2, Three, Sky, Virgin Media and CityFibre

[60] Pass-through would be 67% in a two firm homogeneous product duopoly under Cournot competition (or Bertrand competition where one firm experienced capacity constraints and therefore could not serve the whole market). There is limited product differentiation in this case and the market downstream is somewhat more competitive than a duopoly. Thus we consider that 70% would be a reasonable estimate. There will not be full pass through since the majority of the market (BT and network based competitors) are unaffected by the change in wholesale DFA prices

Impact on DFA-based operators

4.22 There will be a significant reduction and weakening in DFA-based competition. Any wholesale price rise that is not passed through (i.e. 30% of the increase) will necessarily be absorbed by CPs using Openreach DFA who will experience lower margins.

4.23 Even a 20% increase in DFA prices would have a large impact since:

- average margins will be low for DFA based operators since the downstream market is likely to be reasonably competitive (in the counterfactual) and most costs are variable rather than fixed. If DFA prices were set at cost margins (versus wholesale Ethernet) may be only 5-10% and a 20% increase in DFA will result in a 6% points reduction in margins eradicating all or most of operators margins[61]
- margins on all lines are similar to the average (i.e. a narrow distribution) meaning that a small change in price can make a large proportion of lines unviable. This is because DFA has a similar price structure to Ethernet/EAD services (e.g. rental charges per end plus amount per metre of main link) and Openreach have the incentive and ability to adjust EAD prices to reflect DFA price levels in order to even out margins to reduce entry. This contrasts with network based competition where altnet costs vary significantly by circuit (e.g. due to circuit length, amount dig required) but DFA/Ethernet prices are per circuit irrespective of circuit length.

4.24 Thus a 20% increase in DFA prices will cause rapid exit and/or significant contraction in supply and so a large reduction in the market share of DFA based players. This would significantly reduce competition in the active and downstream layers (relative to a counterfactual where DFA prices are set at cost). This would have a number of effects:

- Significantly reduced innovation in the active and downsteam layers (which are the main sources of innovation);
- Reduced productive efficiency since with less competition in the active and downsteam layers incentives to reduce costs will be reduced ;
- Decreased DFA-based competition would result in some (but low) cost saving from reduced duplication in the active layer – the reason for the small impact is that scale economies in the active layer are low.

Impact on network operators

4.25 A higher DFA price will make more network investment viable since the downstream price will be higher. However, the increase in price will have a relatively small impact on network build since:

- Given the nature of the leased line market, the viability of very few circuits are affected by the higher DFA prices[62] i.e. the price increase results in the circuit moving from being unviable to viable for a rival to compete for. Based on modelling we have conducted, we estimate that the viability of only about 5% of circuits are affected.

[61] We provided analysis of this in our submission titled *Business Connectivity Market Review, TalkTalk submission on encouraging competition and investment*, June 2018. In particular, see §§4.25-4.27 and Figure 1.

[62] In the counterfactual where DFA prices are set at cost.

95% of circuits are infra-marginal since: they are already provided by a rival; they are not contested in that period; rivals would have won the circuit anyway without any DFA price rise; and, the viability of many circuits which would be provided by a new network is unaffected by the price change.

- In particular, the viability of a rival to compete for a circuit is relatively insensitive to a DFA price increase because there is a wide distribution of circuit costs for altnets given the distribution of circuit lengths and dig distances. This means that a 20% DFA price increase will only result in relatively few circuits moving from being unviable to viable for rivals to compete for. For example, even where the dig distance is only 20m then it will not be viable for an altnet to build network even if the DFA price is raised by 20%
- Unlike in FTTP networks, the areas of the UK which are the most viable for competitive entry have already seen the roll-out of networks which compete with BT, significantly reducing the scope for competitive entry.

4.26 We have modelled a case where wholesale DFA prices are 20% above cost for 5 years in 15% of the UK where network investment is most sensitive to DFA price rises (e.g. CBDs) – this would only increase rival market share in this area by 4% after 5 years or 0.6% nationally (see §§4.32-4.36 below for explanation).

4.27 However, any positive (but small) impact on rival network investment will be offset (possibly fully) by the reduced competitor scale reducing the amount of altnet investment that is viable.

4.28 A small increase (if any) in network investment/competition in the duct (where DPA not used), fibre, active and downstream layers would have several effects:

- additional innovation as a result of more competition in the fibre/duct layers – albeit to a limited degree;
- additional cost efficiency as a result of more competition in the fibre/duct layers – again to a limited degree;
- cost duplication as a result of reduced scale economies in the duct and fibre layers would be relatively significant since most costs are fixed. In effect, any increased rival investment that is stimulated would duplicate Openreach's investment, and thereby reduce productive efficiency.

4.29 The overall costs and benefits to consumers from setting wholesale DFA prices above cost are summarised in the table below:

Impact of DFA prices above cost (versus DFA prices at cost)

Costs	Benefits
• A significant, certain and immediate cost to consumers through higher prices on all circuits (including EAD circuits). Lost allocative efficiency from prices being set in excess of costs, causing distorted and inefficient consumer behaviour	• A (at best) marginal increase over several years in network competition in duct (where DPA not used) and fibre layers. However, little innovation arises in these layers. • A (at best) small increase in innovation in the duct/fibre layers though the potential

• Significant and rapid reduction in competition in active and downstream layers reducing choice and quality enjoyed by end-users/consumers. Reduced competition will have some adverse impact on leased line network investment since rival retail operators will lose scale[63] • Significant and quick reduction in innovation due to significantly less competition in the active and downstream layers – notably, the vast majority of leased line innovation arises in these layers[64] • Significant reduction in quality as a result of less competition in the active and downstream layers – notably, the majority of faults and so opportunity for quality improvement arises in these layers (§12.52) • Significant reduction in productive efficiency as a result of less competition in the active and downstream layers • The majority of the rival investment will duplicate existing Openreach duct/fibre network which increases overall costs or substitute Openreach own build. Very little of the expenditure genuinely brings services to customers who would not otherwise have had them (unlike for FTTH).	innovation here is limited e.g. slightly different network architectures (but less where DPA is used) • A (at best) small increase in productive efficiency in fibre layer and (where DPA not used) duct layers • Additional leased line network build will, at best, have some marginal impact on FTTP network build – the small increase in leased line network competition will have an even smaller impact on FTTP since there is not a high level of sharing of network since leased line customer are typically in different areas (e.g. CBDs, business parks) to residential customers. This will be offset since DFA reduces FTTP network costs by allowing lower cost e-side connections

4.30 In our view, the costs of setting DFA prices above cost significantly outweigh the benefits even if the higher DFA price stimulated additional investment. The key reasons for this are that above cost DFA prices:

- will substantially inhibit DFA-based competition and significantly reduce innovation that DFA produces;
- yet will only stimulate a little additional network investment which will result in a little more competition in the duct/fibre layers which generates minimal additional innovation;
- this small increase in duct/fibre layer innovation comes at a large cost in terms of raised consumer prices and duplication costs (which is why prices need to be artificially inflated).

[63] Even wholesale only network builders (like CityFibre) rely on non-BT and non-network operators to build share

[64] For example, see BCMR Statement May 2016 at §A18.58.

4.31 Ofcom itself accepts that DFA prices should be set at cost unless higher prices would stimulate material investment[65].

> *"Typically, we set charge controls based on BT's costs, unless there is a strong argument to use an alternative approach, such as stimulating competitive investment. " (§10.23)*
>
> *"Where prospect of competition is low (even with DPA) we do not consider it necessary to set a higher DFA price to facilitate investment"* (§10.23 also at v2 §4.3)

4.32 It is possible to put some rough numbers to support these conclusions. We have developed a model to quantify some of the impacts of higher prices. The full model (and a description of it) was provided to Ofcom in June 2018[66].

4.33 We modelled the impact of a 20% DFA price rise for 5 years imposed in the 15% of the UK where investment was most sensitive to price rises (e.g. CBDs). The key results are below:

- cost to consumers of higher prices £49m;
- proportion of higher prices passed through in higher profits to incumbents 95%;
- additional market share by rivals 4%;
- additional rival investment £26m;
- genuinely new rival investment <£5m.

4.34 These results imply that the benefit to consumer of higher prices is:

- small – probably less than £5m of genuinely new investment since most of the £26m of additional rival investment merely duplicates or substitutes BT investment; and,
- much lower than the cost of £49m in higher prices and weakened competition.

4.35 The majority of the higher prices are 'wasted' in the sense that they simply result in higher prices for BT and increase BT's profits.

4.36 TalkTalk has provided Ofcom with the Excel model so Ofcom is able to recalibrate it with additional data that it has or can gather by virtue of its position as the regulator.

4.37 Therefore, we believe that consumers will significantly benefit from imposing DFA with prices at cost rather than not imposing DFA and regulating Ethernet with prices 20% above cost. Recapping the two steps in the logic are:

- On Ofcom's own analysis DFA-based competition is superior to Ethernet-based competition and so consumers will benefit from DFA (with prices 20% above cost) rather than Ethernet (with prices 20% above cost)
- Consumers will benefit from DFA (at cost) rather than DFA (with prices 20% above cost) since this delivers significant innovation benefits and avoids consumer harm through higher prices and wasteful duplication

---

[65] Ofcom refers to the active minus pricing approach which it says (with no explanation) is no longer relevant (§2.20). The active minus approach was (in 2016) and remains wrong in both principle and practice. It delivers significantly lower net benefits to consumers (versus cost-based) and contributed to Ofcom losing BT's appeal of the 2016 BCMR.

[66] *Business Connectivity Market Review, TalkTalk submission on encouraging competition and investment*, 19 June 2018. A spreadsheet accompanied the submission.

4.38 Ofcom is demonstrably incorrect if it thinks that consumers' interests are best served by restricting DFA to stimulate investment. Therefore, the default approach to remedies in the BCMR market should be that where downstream remedies are required to curb BT's SMP, DFA is imposed with prices set at cost[67].

4.3 Ofcom's other stated reasons for not imposing DFA

4.39 In this section we discuss some of the other reasons Ofcom seems to have advanced to justify not imposing DFA (other than in 5% of circuits).

4.40 Ofcom explained that one of Ofcom's stated reasons for not imposing DFA more widely is because it wishes to 'segue' into the regulatory regime that it is considering imposing in 2021. In particular it seems that Ofcom thinks that it may not be appropriate to impose DFA in all parts of the CI Access market in 2021 and so, to smoothly transition to this, it is better to not impose DFA in any of the CI Access market in this BCMR.

4.41 As we describe above at §3.13 *et seq*., it is legally unsound for Ofcom to set BCMR regulation (e.g. not impose DFA in certain markets) since it 'thinks' it might not impose DFA in some of these markets in the upcoming Access Review. Doing so would mean that regulation in this BCMR is based on Ofcom's current view of regulation post-2021 which has not even been described or justified let alone been consulted upon or finalised.

4.42 In any case, we disagree with Ofcom's view that in the Access Review DFA should not be imposed in CI Access BT+0 areas. It appears that Ofcom's key reason why DFA may not be appropriate to impose in BCMR BT+0 areas is that some of these other areas may, in the Access Review, be deemed competitive and have multiple networks available. This is premised on assumptions that leased line networks and residential FTTP networks are in the same market, and that there will be meaningful roll-out of FTTP in business areas, both of which are far from proven. Indeed, Ofcom has not yet presented any evidence that there might be a single market spanning access lines and leased lines.

4.43 Furthermore, even if Ofcom knew for certain today (which it does not) that there were some unspecified CI Access BT+0 areas where it would not be appropriate to impose DFA in 2021 then the appropriate and pro-consumer approach in this BCMR would be to impose DFA in the entire CI Access BT+0 market and then withdraw (or not reimpose) DFA in 2021 in those parts where such withdrawal was justified. Such an approach (particularly if Ofcom flagged this possibility) would be legal and provide certainty, as well as being in consumers' interests. It is also practicable: Ofcom has withdrawn regulation before without problems – for instance, subsequent to Ofcom's no SMP finding in CLA in 2016 Openreach's obligation to offer Ethernet services in the CLA was withdrawn[68] and similarly following the Temporary Conditions in 2017[69] Openreach's obligation to offer VHB services was withdrawn. In none of these cases has there been any problems from this transition.

[67] There will also be a need for Ethernet to be imposed whilst customers transition to DFA and DFA provides sufficient constraint on Openreach Ethernet products.

[68] See BCMR Statement May 2016

[69] See Ofcom (2017), *Business Connectivity Markets, Temporary SMP conditions in relation to business connectivity services, Statement*, November and Ofcom (2018), *Statement on adding dark fibre to the temporary remedies for business connectivity markets,* April.

4.44 Ofcom say they have taken a "*conservative*" approach to where DFA is imposed (§12.77). Ofcom have given no reason as to why being conservative would be in consumers' interests, nor indeed why the approach they have taken should be described as "conservative". Absence of regulatory action is not necessarily either conservative nor in consumers' interests. Rather, Ofcom should simply adopt the approach which will maximise net consumer benefits.

4.45 It appears that one of Ofcom's reasons for not imposing DFA is that they believe removing restrictions on DPA use to provide leased lines will significantly increase network investment. For instance, Ofcom says:

> *"The remedies we propose take into account our proposals for unrestricted access to BT's ducts and poles" (§1.9)*
>
> *"we are also proposing unrestricted duct and pole access to BT's network, which we expect in time to enable network-based competition in a significant proportion of the UK" (§1.23)*
>
> *"unrestricted infrastructure access significantly increases the likelihood that new access networks will be built" (§10.27)*

4.46 TalkTalk welcomes the proposed introduction of unrestricted DPA. However, Ofcom is wrong to presume that the proposed removal of restrictions on DPA means that DFA is not required.

4.47 First, it is not legally correct for Ofcom in setting BCMR regulation to rely on a proposal (to remove restrictions on DPA) that is not finalised or settled. Ofcom could only rely on the PIMR outcome in setting BCMR regulation if the PIMR statement was published at the same time as, or before, the BCMR statement.

4.48 Second, Ofcom exaggerates the impact of removing restrictions on DPA. [✂] Thus, whilst welcome removing DPA restrictions will not "*significantly increases the likelihood that new access networks will be built*". [✂].

4.49 Third, as we demonstrated above in section 4.2 even if network investment is possible consumers' interests will be best served by imposing an obligation to provide DFA at cost.

4.50 In any case, even if removing restrictions on DPA did stimulate some network investment not imposing DFA would only be in consumers interests if the absence of DFA would stimulate additional investment (in the context that there are no restrictions on DPA).

4.51 Ofcom has indicated that stability and certainty is important for investment. As we described in section 3.2.3 certainty results from consistent and predictable policies rather than (say) keeping the same nominal prices or having the same product remedies. We consider that introducing DFA more widely (than just 5%) will not reduce perceived certainty since, though DFA was not imposed before, stakeholders would have expected Ofcom to impose DFA more widely in this review. For example:

- In BCMR16 imposed DFA for all CI circuits where Openreach had SMP. DFA was only withdrawn because subsequent to the Temporary Conditions Ofcom reached no conclusion on SMP for VHB services meaning it could not impose DFA for 10G. If the principles from BCMR16 were applied in BCMR19 then DFA would be imposed widely

- In April 2018 Ofcom said that: "*we remain of the view that dark fibre can play an important role in promoting competition in leased lines. In particular, we believe that dark fibre has an important role where duct and pole access ("DPA") is not an effective remedy, for example because usage restrictions may prevent DPA being used. We will therefore be considering an enhanced dark fibre as a remedy in our further market review*"[70]
- In July 2018 Ofcom said: "*[In BCMR19] we will consider the introduction of access to dark fibre in both access markets and core/backhaul markets for business connectivity in a way which is consistent with our strategic objective to promote investment in new networks*"[71]

4.52 Therefore, we do not consider that introducing DFA more widely would in any way be inconsistent with Ofcom's previous position and reduce certainty.

4.53 We do not consider there is any material harm from multiple wholesale remedies imposed across a single value chain provided that the prices set in the remedies are consistent. Multiple remedies allow the market, rather than Ofcom's incomplete knowledge of the market, to determine which remedy is most appropriate for delivering consumer benefits in particular cases.

4.4 Appropriate scope of DFA

4.54 Ofcom has proposed to impose DFA only in the CI IEM market to/from BT+0 exchanges which accounts for about 5% of circuits. It has rejected imposing DFA in other CI IEM markets or in any CI Access markets. Instead there is widespread imposition of Ethernet with prices about 20% above cost. As we describe above, restricting DFA will harm consumers. Below we discuss the markets where we consider that DFA should be imposed.

4.4.1 *CI Access BT+0 and CI Access BT+1*

4.55 A cost-based DFA remedy is clearly warranted in both of these markets.

4.56 First, it is obvious that robust downstream regulation is necessary since Openreach has a high market share, well in excess of the levels at which SMP can be presumed— BT+0: 81% - 90%; BT+1 61% - 70% (§6.46).

4.57 Second, as we described in earlier in this section, DFA (at cost) delivers the greatest benefits to consumers and so should be the default downstream remedy to address SMP. The only reason to depart from this remedy would be if weaker downstream regulation would stimulate material additional investment. However, on Ofcom's own evidence no additional investment is likely to be stimulated by weaker downstream regulation in this period:

"… prospects for competition in near term are low[72]" (§1.21)

[70] §1.2 Statement on adding dark fibre to the temporary remedies for business connectivity markets, Statement, April 2018

[71] §6.7 Statement on adding dark fibre to the temporary remedies for business connectivity markets,, Strategic Policy Position, July 2018

[72] This comment is in reference to areas with fewer than two rivals i.e. i.e. BT+0 and BT+1

"… market developments are relatively limited and will not affect the level of competition in the BT Only and BT+1 markets over this review period" (§6.71)

4.58 It has been suggested that a reason for not imposing DFA in BT+0 areas in the CI Access market is that there is little VHB demand and DFA might not be viable for providing 1G services. This is not a sound justification:

- the relatively low VHB demand is due to Openreach's distorted prices resulting in high VHB prices – underlying demand will be higher. In any case, VHB demand in CI Access BT+0 is proportionally half of the demand in other areas (see Table A14.2) – it is still a material opportunity;
- if DFA was available for CI Access at cost, and presuming the Ethernet basket prices were are set at or above cost, it is likely that there would be sufficient margin for a DFA-based operator to compete at all speeds, including 1G EAD. If there was not sufficient margin it would imply that Openreach was price discriminating in an anti-competitive manner.

4.59 Therefore the appropriate regulation for CI Access BT+0 and CI Access BT+1 areas is DFA (at cost). The claimed possibility of needing to remove DFA regulation in some of these markets in a future review is not a sound reason to not impose DFA in any of these markets in this market review period. This argument could always be made about the introduction of any remedy – however, it would anyway be incorrect to use it given that Ofcom cannot bind its own hands or prejudge its decisions. Market participants will be able to make their own decisions about how much DFA to consume in the upcoming regulatory period, in light of the prospect that regulation may not be continued in some areas.

4.4.2 *CI Access HNR (excluding CLA)*

4.60 In the HNR areas Ofcom has, unlike in BT+0/BT+1 areas, not reached a conclusion on the prospects for investment in this market review period. We encourage Ofcom to conduct analysis which would help it determine the likely levels of investment, such as reviewing the business plans of operators, and the costs of additional network expansion in HNR areas compared to the revenues which new entrants could hope to obtain. If material incremental investment would be stimulated by relaxed regulation then there is a question of what regulation would be appropriate.

4.61 If Ofcom wishes to stimulate network investment then it would be more pro-consumer to do this by imposing DFA with a price above cost rather than not imposing DFA at all and relying on Ethernet. This follows from the conclusion that consumer interests are better met by DFA than Ethernet. However, Ofcom should only set DFA prices above costs if it can demonstrate that the uncertain benefits of increased investment outweigh the certain harm from higher wholesale DFA prices. Based on the modelling we have conducted it is unlikely that this condition would be met.

4.4.2.1 *Nature of DFA charge control in CI Access HNR (excluding CLA)*

4.62 If there is a pro-consumer case for DFA prices above cost then we consider that the structure of the charge control should not be a CPI-CPI cap but rather a cap which sets prices a certain amount (say 15%) above cost.

4.63 A CPI-CPI cap is essentially arbitrary. The level of prices relative to costs is not evidentially grounded and rather depends on the level of prices versus cost at the start and whether real unit costs changes are higher or lower than CPI.

4.64 A CPI-CPI cap also exposes Openreach and CPs to risk of inflation volatility. In the case where inflation is unexpectedly high (for example, as during 1990/91 when inflation was running in excess of 7%), Openreach could face a price cap below costs (since real unit costs reductions are likely to be less than 7%), which could be taken as breaching Ofcom's duties. With the economic uncertainty engendered by Brexit, inflation volatility is a very real risk in the period of this charge control. In such a case, Ofcom would face pressure to reopen its price caps. On the other hand, where inflation is unexpectedly low (for example, as in 2000 when inflation was below 1%) Openreach will receive a much greater windfall than anticipated by Ofcom, resulting in higher real prices for consumers and greater costs for consumers. There would be little pressure to reopen price caps in this case, which would create an asymmetric risk of higher prices. Such risks become higher as the period is longer, as inflation forecasts are inevitably less accurate over longer time periods.

4.65 It is therefore poor regulatory policy to set price caps for products on the basis of CPI-CPI. Ofcom should not create a regulatory precedent by setting such a price cap for any major product such as ethernet on a CPI-CPI basis, and should provide a statement setting out that it is unlikely to adopt such a misguided policy in future regulatory reviews.

4.66 The margin above cost (e.g. 15%) could be set by reference to the sensitivity of investment to prices and altnet cost levels. The charge control can be set using a CPI-X structure whereby prices glide to the target level (e.g. cost + 15%) over the charge control period. Ideally, this margin above cost should be set by modelling the margin which maximises long-term consumer welfare.

4.67 In the CLA Ofcom proposed a finding of no SMP. As we describe above at section 2.3.4 such a conclusion is unjustified. If Ofcom finds SMP then the approach to charge control should be similar to that for HNR areas described above i.e. impose a CPI-X charge control to glide to Openreach costs plus 15% (say) if Ofcom can demonstrate there are consumer benefits from prices that far above cost.

4.4.3 *CI Access CLA*

4.68 We agree with imposing DFA in the CI inter-exchange market to/from BT+0 exchanges as well as imposing cost-based prices. This will deliver greatest consumer benefits since there is no competitive constraint at present and weak regulation will not stimulate material investment.

4.4.4 *CI inter-exchange market*

4.69 As we describe above the geographic markets for CI inter-exchange should be based on the number of rivals on a route (based on whether that rival is present at both ends of an inter-exchange circuit). On the basis of this definition we consider that DFA should be imposed in the following manner.

4.70 DFA should be imposed in the CI inter-exchange market on routes between exchanges where there are no rivals are present[73]. We also agree with imposing cost-based prices since this delivers greatest consumer benefits since they is no material competitive constraint currently and weak regulation will not stimulate material investment.

4.71 We also consider that DFA (at cost) should be imposed on routes where only one rival is present. In such a duopoly situation BT's market power should be addressed through a robust downstream remedy and DFA is the best remedy. There is no reason to set the DFA price above cost since entry is unlikely.

4.72 On routes where two or more rivals are present we consider that if SMP is found DFA should be imposed. Whether the price should be set at or above cost will depend on whether there is evidence that a higher price will stimulate material additional investment.

4.5 Other regulation of DFA

4.73 This subsection comments on other aspects of DFA regulation.

4.74 The legal instruments[74] outline that DFA can be used between BT exchanges and "*an operational building of a Third Party*". This is inconsistent with the main body of the consultation which implies that DFA can only be used between BT exchanges. Ofcom attempted to clarify this inconsistency it in clarification of 19 Dec 2018. Unfortunately the publication did not clarify the situation, though subsequently Ofcom have explained to TalkTalk that the legal instruments were wrong.

4.75 Ofcom has imposed no usage or bandwidth restrictions on DFA. We agree with this – usage restrictions are neither supported by the economic situation, as competitive conditions similar for all bandwidths, hinder innovation and can be bureaucratic to administer.

4.76 Ofcom has proposed a DFA launch within one month of its Statement. We broadly agree with this timescale:

- when DFA was withdrawn pursuant to the appeal of the BCMR16, much of the development work was complete and the DFA product was around six weeks from launch;[75]
- given that Openreach will have sight of the final BCMR Statement (via the Draft Statement) about 4-6 weeks in advance of the final statement then requiring launch within one month of final Statement will allow Openreach 8-10 weeks to finalise DFA;
- [✂].

4.77 Ofcom should require Openreach to offer a monitored variant of DFA, priced at cost. Technically this would look similar to OSA-FC whereby Openreach install WDM and Ethernet equipment to allow them to monitor the line. It is discussed above at §§4.8-4.9.

[73] This is the same routes as between exchanges where there is no rival at one exchange or the other

[74] Annex 23 page 17 2.1(c) and p11 on definition of backhaul segment

[75] The original DFA launch date was 1/10/2017. The CAT handed down its ruling on 26/7/2017 and Openreach announced on 15/8/2017 that it would not launch DFA as planned

4.78 We note that a proper EOI obligation (where BT has to consume the wholesale product itself i.e. a 'must-use' obligation) is not imposed on DFA (§11.56). Ofcom has provided no explanation for its position.

4.79 A must-use obligation is critical since it creates strong incentives on Openreach to ensure that the wholesale product is fit for purpose and removes potential anti-competitive discrimination. Without a must-use obligation BT has strong incentives to delay and degrade DFA in order to hamper its competitors. Exactly this problem occurred with LLU – initially there was no 'must-use' obligation on BT/Openreach and quality was very poor until BT/Openreach was forced to use LLU itself as a result of the 2005 strategic review[76].

4.80 A must-use obligation has been the critical foundation for ensuring the success of major regulated products such as SMPF, MPF, WLR, IPStream, WBC and EAD. There is no reason we know of (and no reason provided by Ofcom) as to why the same logic would not apply to DFA.

4.81 Ofcom should impose an obligation on Openreach to provide reliable Ethernet to DFA migrations (and vice versa). Without these obligations, DFA uptake and the consequent consumer benefits will be delayed. These migrations should have a price cap set at LRIC to ensure efficient migration incentives.

4.82 On DFA prices:

- we consider that DFA prices should reduce in the second year in line with costs (rather than stay flat);
- we agree that the RWT charge should be set at FAC cost;
- we agree that the cessation charge should be set at FAC cost.

5 Active charge control remedy

5.1 A charge control is the key remedy to prevent BT exploiting its market power by raising prices above competitive levels. In this section we discuss the need for and type of charge control on CI Access and CI IEM services (at all bandwidths). In particular, we discuss:

- Ofcom's overall approach and reasoning;
- that cost-based charge controls are in consumers' interests;
- the proposed charge control on VHB services; and,
- other aspects of the charge control such as the proposed basket structure.

[76] When LLU was introduced in 1999 there was similarly no obligation for BT to use the SMPF product itself to produce IPStream. Five years after the initial launch the SMPF product was low quality and not fit for purpose – compared to BT's own wholesale broadband product (IPStream), provisions were slower, fault rates were higher and repairs took longer. The product quality only improved when BT was obliged to use the SMPF product themselves – and then SMPF use grew rapidly.

5.1 Ofcom's approach

5.2 A charge control is clearly necessary for downstream active services where BT have SMP. Without a charge control Openreach will exploit its market power by raising prices above competitive levels, to the detriment of consumers.

5.3 It is Ofcom's well established policy to set prices at Openreach's costs. In the BCMR it highlighted this:

> *"Typically, we set charge controls based on BT's costs, unless there is a strong argument to use an alternative approach …. " (§10.23)*

5.4 There is sound economic logic underlying this policy – setting prices based on BT's costs (i.e. cost-based prices) maximises consumer benefits since they allow the lowest end user prices and strongest downstream competition, whilst allowing Openreach to recover its costs, so maintaining its investment incentives. Notably, cost-based pricing allows network investment by including an appropriate return for risk based on using a WACC derived from the CAPM.

5.5 However, in this BCMR Ofcom has departed from its well established policy by proposing a CPI-CPI cap for the existing Ethernet basket (covering 1Gbps Ethernet and below services) and a separate CPI-CPI cap for VHB services (10Gbps Ethernet and above, including WDM-based circuits). The impact of this approach is significant – Ofcom's CPI-CPI approach will allow prices to be about £250m[77] above cost in FY20 and FY21. This will result in significant consumer harm through a combination of higher consumer prices and weakened downstream competition. Where increased wholesale prices are passed through consumer prices will rise, harming consumers and where increased wholesale prices are not passed through it will reduce the margins for retail competitors, weakening their incentive and ability to compete. If reduced margins lead to exit from the market, this will result in increased margins for remaining firms, along with reduced choice for customers, both of which will reduce consumer welfare.

5.6 Ofcom has advanced a number of reasons for departing from its well established approach such as stimulating investment, stability and certainty. Most are irrelevant or wrong and Ofcom has produced no evidence that any of them – either individually or in aggregate – justify departing from Ofcom's established policy. We discuss Ofcom's reasoning in the next section[78].

---

[77] See footnote 58

[78] In v2 §2.14 Ofcom imply that a reason to not adopt cost-based prices is to avoid the risk of under-recovery. If this is part of Ofcom's case then it is a bad reason. Ofcom have rightly not been concerned about under-recovery in the past – in part since the charge control allows the possibility of both over- and under-recovery (and the WACC reflects this risk). Further, Ofcom have set out no evidence to demonstrate why under-recovery is a more serious potential problem than in previous reviews. Also we note that at Ofcom claims that a CPI-CPI charge control "*would be more effective … at managing the risk of regulatory failure*" (v2 §2.9) than a cost-based charge control. Ofcom has not particularised this or explained what it means (either in the document or when asked). Therefore, we have not responded to this assertion. For the avoidance of doubt, as we explain above, we consider that a CPI-CPI price cap will be a 'regulatory failure' since it will not serve consumers interests.

5.2 Ofcom's flawed reasoning

5.7 Ofcom's reasons appear to coalesce around two separate arguments. The first is that prices above cost will stimulate network investment, and the second is that a CPI-CPI price cap will provide 'price stability and regulatory certainty'. We discuss each of these below.

5.2.1 *Stimulating network investment*

5.8 A well-established reason for setting prices caps above cost is to stimulate competitive investment. For instance, Ofcom says in the BCMR:

> *"Typically, we set charge controls based on BT's costs, unless there is a strong argument to use an alternative approach, such as stimulating competitive investment" (§10.23)*
>
> *"Where the prospect of competition is low (even with DPA) we do not consider it necessary to set a higher DFA price to facilitate investment"* (§10.23 also at v2 §4.3)

5.9 Ofcom (correctly) made the same point when setting prices for DFA – that where there is a low likelihood of stimulating additional investment, then a cost-based charge control will be appropriate:

> *"As the dark fibre remedy will only be available in areas where there is no existing competition, and we believe the likelihood of additional competition over the review period is low in these areas, we consider that a cost-based control would be appropriate." (v2 §4.3)*
>
> *"As the dark fibre remedy will only be available in areas where there is no existing competition and the likelihood of additional competition is low, we consider that a price premium to incentivise rival investment would be inappropriate" (§10.24)*

5.10 We agree that, in certain circumstances, it can be in consumers' interests to allow higher wholesale prices in order to stimulate additional investment, because the longer-term consumer benefits resulting from this additional investment outweigh the harm from higher wholesale prices – the lack of price controls on GEA wholesale charges to incentivise FTTC investment was a good example[79]. On the other hand, higher wholesale prices can also reduce network investment incentives since higher wholesale prices will erode the customer bases served by non-BT operators which are essential to making competitive network investments viable[80].

5.11 However, higher wholesale prices in this market review period will not stimulate any material incremental investment (either in this review period or in subsequent review periods). We explain the evidence for this below.

5.12 First, Ofcom itself accepts that there will be no material incremental investment <u>in this review period</u> to Mar 2021 (certainly in BT+0 and BT+1 CI Access markets):

> *"… prospects for competition in near term are low" (§1.21)*

[79] Though we consider that more extensive charge controls should have been introduced earlier (and without a glidepath)

[80] The viability of altnet FTTH investments is highly sensitive to being able to migrate an existing base of customers (of retail CPs such as TalkTalk and Sky) from legacy networks to the new FTTH networks

"Overall, market developments are relatively limited and will not affect the level of competition in the BT Only and BT+1 markets over this review period" (§6.71)

"In areas where BT does not currently face competition, or where it faces competition from just one rival, we expect unrestricted DPA may in future enable greater competition, in particular for access circuits, where investment in residential broadband may give rise to economies of scale and scope. However, this is likely to be over a longer period of time, and not necessarily in every location" (§10.11)

5.13 Therefore, on Ofcom's own evidence higher prices cannot stimulate material investment in this market review period.

5.14 Second, higher prices in this period will not stimulate incremental investment in subsequent periods after Apr 2021. This is because higher prices in the market review period to 2021 cannot stimulate investment in the next review period, since changes in prices before 2021 cannot affect returns on investments made after 2021.

5.15 Ofcom has suggested that higher prices in this upcoming period (to April 2021) could stimulate network investments in future periods (after 2021) since the higher prices will force retail CPs to invest themselves or commit volume to a network investor providing wholesale services (such as CityFibre). We do not consider that this mechanism will have any material effect. Provided that the retail CP knows that prices will be higher (than cost) once the network investment is completed in a particular area, raising the price prior to the investment will have no additional impact on the incentive on the retail CP to invest themselves or commit volume to a network investor. Rather, raising the price prior to the investment will merely raise CPs' costs when there is no opportunity to reduce costs by using an alternative network. It is therefore unambiguously worse for consumers and competition than an alternative approach where there is reduced regulation as competition becomes effective.

5.16 It is important to note that there is no possible problem that potential investors in Ethernet markets may not invest in beneficial network roll-out because pre-entry prices are too low:

- there has already been substantial alternative network roll-out in Ethernet markets, meaning that many potentially competitive areas (for example, the CLA and CBDs of other major cities) have already seen entry;
- there is no part of the country where the only potential viable investors are ISPs who would benefit in the short term from lower prices, given the prevalence of smaller business focussed operators (such as COLT and Zayo) which have shown themselves willing to invest;
- there is no concern (as has previously been raised by DCMS) that operators could be reluctant to construct their own networks because of concern that they would be overbuilt by BT, as Openreach already has the ability to provide ethernet circuits to all parts of the country; and,
- there is no advantage for operators building their own networks, rather than taking a DFA product from BT and then lighting the dark fibre with their own electronics.

5.17 In addition, it is worth highlighting that higher prices in this period will not restrict Ofcom's ability to set above (or below) cost prices in subsequent periods (if they are justified) – not least since Ofcom cannot fetter its discretion for future reviews. Therefore, there can be no

legitimate argument that Ofcom have to set particular charges in the BCMR in order to be able to set charges at a certain level in the Access Review.

5.18 Therefore, on the basis of Ofcom's own evidence, investment stimulation cannot be a legitimate reason to depart from imposing a cost-based charge control certainly in BT+0 and BT+1 CI Access markets. In CI Access HNR markets we have seen no evidence to indicate that higher prices in the upcoming period will stimulate investment.

5.19 Lastly, we note that even if higher prices in this period did stimulate material additional network investment (which is not the case) then for Ofcom to justify higher than cost prices it would need to provide evidence to demonstrate that the consumer benefits from the incremental investment expected from higher wholesale prices would outweigh the harm consumers would suffer through higher prices and weakened competition. Ofcom's document does not include even a cursory impact assessment or cost-benefit analysis of its proposed weakening of regulation (by setting above cost prices) or whether the benefits from potential stimulated investment (which are small and uncertain) are likely to outweigh the certain and significant costs and harm. Such an omission is inconsistent with Ofcom's principle that it should make evidence-based decisions, particularly in cases where it is starkly departing from its previous well established policy.

5.2.2 *Price stability and regulatory certainty*

5.20 The second main claim Ofcom makes to justify departing from its well established policy of setting prices at cost is that this will promote price stability and regulatory certainty. For instance, Ofcom says:

> *"we are prioritising price stability and regulatory certainty over the static benefits of keeping prices tightly aligned to costs"* (§10.34)
>
> *"given that this is a transitional review before we adopt a network-focused approach, and given that the potential for and timing of the take-up of passive remedies is uncertain, we consider that price stability and regulatory certainty are important to support our regulatory objectives"* (§13.43)

5.21 This argument is flawed and does not justify setting prices above cost.

5.22 We agree that certainty, which we consider in this context to be the same as predictability, is important for promoting investment. However, predictability is engendered by applying consistent policies and principles to set regulation across time. Adopting non-cost based charge controls which clearly departs (without any justification) from Ofcom's well-established policy over the last 10+ years decreases certainty and predictability rather than increases it.

5.23 Ofcom's case regarding stability appears to be that:

- the particular regulation Ofcom plans to set in the upcoming Access Review would mean that prices in some (say) CI Access BT+0 areas would be set above cost (in order to stimulate investment)
- therefore, prices will be more 'stable' if all prices in this BCMR are set above cost for the next two years since it will avoid a situation in some areas of the country where

prices fall to 2021, to be in line with costs, and then rise so as to establish a gap between costs and prices.

5.24 There are several significant errors in this argument which we describe below.

5.2.2.1 *Ofcom's approach is based on an unlawful premise*

5.25 First, if Ofcom were to set regulation in the BCMR based on its current view of the regulation it expects to set in its Access Review in 2021 then it is prejudging the outcome of its Access Review consultation process. We describe above §3.13 *et seq.* that such an approach would be inconsistent with Ofcom's public law duty to consult prior to reaching a decision and to do so in accordance with the Gunning principles.

5.26 In setting BCMR regulation Ofcom can take account of established decisions that have been consulted up and are settled e.g. desire to encourage network investment. However, it must disregard what particular regulation it thinks it will or may impose in the future.

5.2.2.2 *Ofcom's approach is not in consumers' interests*

5.27 Second, we consider that the particular regulation that Ofcom it thinks it might impose in the Access Review is not in consumers' interests. We have yet to formally see the full detail of Ofcom's early proposals in the Access Review but understand that Ofcom's proposals are likely to be to weaken regulation from 2021 in about 69% of the UK where it considers that FTTH might be built over the next 10 years. This would mean that many customers would pay inflated prices yet, at the same time, the vast majority of these customers either would enjoy little or no benefit:

- they will not benefit from any investment since the FTTH build estimate is over-optimistic by a considerable margin. It is unclear that there will be sufficient capacity in the UK to deliver 69% FTTH roll-out over a ten year period, even if all other economic conditions are met (which they are very unlikely to be);
- they will not enjoy get any network investment for many years (since even if build reaches 69% by its nature half or more of build is likely to come in the latter five years of the 10 year period).

5.28 We consider that not only is Ofcom's proposal against consumers' interests but also that better options exist.

5.2.2.3 *Ofcom's approach will not create stable prices*

5.29 Third, and in any case, under Ofcom's CPI-CPI approach prices will not be 'stable'. The CPI-CPI cap applies to a basket of Ethernet services and individual charges are able to increase within the CPI+5% sub-cap (i.e. by about 7% each year). Openreach may well rebalance charges in the basket and increase individual prices, for instance to reflect changes in underlying costs; to align CI inter-exchange EAD charges with cost in order to reduce the margin for CPs using DFA; raising prices of increasing volume products to outperform the cap. This means that any individual customer (wholesale or retail) is likely to see considerable changes in both absolute and relative prices over the regulatory period, removing any benefit that might result from stable prices.

5.30 Moreover, the most important factor for businesses, which tend to be well-informed regarding future input prices, is not nominal price stability but rather price predictability, in the sense that they know well ahead of time the level of prices they will face. This provides businesses with the maximum scope to find cost efficiencies as relative prices and methods of production change. The Ofcom proposals—in which average prices are known, but the individual prices to each business are uncertain—is likely to be considerably less beneficial to customers. The gap between the overall basket price caps, and the sub-cap on each individual price, is simply too great to provide businesses with predictability.

5.2.2.4 *It is unclear how it will benefit investment*

5.31 Fourth, even if Ofcom knew what prices would be in 2021 (which cannot legally be the case) and Ofcom's approach would result in prices being stable up to 2021 (which is also not the case) then it is not clear what the benefit to consumers from such price stability would be (compared to prices falling on average and then, possibly, some prices rising in 2021).

- In the case where wholesale price changes are passed through, the end customer who was (say) currently paying £2,000 per site would experience prices falling to £1,600 (i.e. 20% less) up to 2021 and then (possibly) some prices rising to £2,000 in 2021. It is unclear why such a customer would prefer prices to be to be £400 higher until 2021 in order that the price in 2021 is the same as that in 2019.
- In the case where there is no pass through of costs there can be no end user benefit from price stability and the higher prices up to 2021 simply reduce operators' margins and weaken competition

5.32 Ofcom has also suggested that reducing BCMR prices to cost (rather than CPI-CPI) would send negative signals to investors who have told Ofcom that they are hoping for higher prices. There are several flaws in this argument:

- it again depends on aligning the approach in the BCMR with Ofcom's view of what regulation will be imposed in the Access Review, which would be prejudiced and therefore illegal;
- Ofcom should be wary of regulatory capture by the investor 'constituency', which will always seek higher prices in the market for firms they have invested in, as this increases profits. Investors also have strong incentives to game the regulatory system, as it is costless for them to say that higher returns would lead to more investment, and no way for Ofcom *ex post* to quantify how much extra investment has been generated by any given increase in prices against the counterfactual.
- It would be straightforward for Ofcom to explain that prices should be set at cost to FY21 to protect consumer interests but may rise in the Access Review. This would provide certainty for stakeholders and investors while avoiding the costs to consumers

5.2.2.5 *Other points*

5.33 Ofcom has suggested to us that regulation is not weak and prices are not 'elevated' since we are comparing to the wrong counterfactual – Ofcom appears to think that the correct counterfactual is today's prices and Ofcom's proposals are to keep prices constant. This idea

is reflected in its comment that its regulatory proposal of CPI-CPI price caps is "*similar*" to current regulation (§10.11).

5.34 This is disingenuous. From an economic perspective the correct counterfactual is what prices would be in a competitive market, where prices would reflect cost. Furthermore, counterfactuals should be generally based on what prices would otherwise have been rather than what prices were in the past. Ofcom is fundamentally wrong if it is using the counterfactual of current prices to assess the impact of its regulation.

5.35 Ofcom appears to suggest (vol 2 §1.4) that a CPI-CPI charge control is in some way acceptable since it falls within the high end of its cost forecasts. This is not sound – Ofcom's established policy and the one that best serves consumers' interests is that prices are set based on the central estimate of costs, rather than prices at one end of a cost range. In any case, the range itself is based on arbitrary assumptions that have no economic grounding, and Ofcom does not seek to justify all of its sensitivity analyses in detail.

5.36 Another potential issue here is that Ofcom may want to avoid raising some prices after 2021 which can be averted or reduced by setting a CPI-CPI cap now. If that is part of Ofcom's reasoning it would be illegitimate. Ofcom should be concerned with consumers' interests and not how its decision may be viewed by third parties.

5.3 Charge control on VHB services

5.37 Ofcom has proposed a CPI-CPI price cap on VHB services (services above 1G, including WDM) which it calls it a 'safeguard' cap. The case for a cost-based charge control[81] on VHB services is stronger than for 1G and below services, and Ofcom's case for a price cap in the form proposed is unjustifiable.

5.38 First, the evidence is clear that Openreach has been allowed to exploit its market power to raise VHB prices above the competitive level to the detriment of consumers:

- As Ofcom highlights itself, VHB services are in the same market as 1G and below services meaning that the competitive conditions (and Openreach's ability to exploit market power) should be the same for VHB services as for 1G and below services.
- The current level of prices, which is about 40%[82] above cost (and therefore the competitive level) provides additional evidence of strong dominance for VHB services. Indeed, Ofcom itself has clearly highlighted that prices are above cost

  "… our analysis does not suggest high prices for very high bandwidth (VHB) circuits are necessary for BT to recover its costs" (§10.24)

  "We note that BT currently earns high margins on VHB services (§10.36)

5.39 Second, since current prices are significantly above cost and a cost-based charge control on VHB services will deliver proportionally greater consumer benefits than for 1G and below

[81] We understand that Ofcom has, or can obtain from Openreach, data to set a cost-based charge control

[82] See Fig A7.2

services. We estimate that if prices are set at CPI-CPI compared to cost-based (with a starting charge adjustment) that prices will be about £190m higher in FY20 and FY21[83].

5.40 It is notable that as long ago as 2016 Ofcom considered that constraints on Openreach VHB pricing were required but a charge control was not imposed since Ofcom expected DFA to constrain VHB prices[84]. However, because Ofcom's approach to the 2016 BCMR review was wrong and was overturned by the CAT, DFA was ultimately withdrawn and so there has been no such constraint.

5.41 Given that VHB prices have not been previously regulated and there is a material misalignment between prices and costs Ofcom should impose a starting charge adjustment (SCA) since the use of a glidepath only would result in consumers paying unnecessarily high charges in FY20. Ofcom has a well-established precedent of imposing SCAs in the case where charges are regulated for the first time[85] which it should adhere to in this case.

5.42 Lastly, we note that a CPI-CPI VHB charge control is unlikely to bind Openreach and thus safeguards nothing. Since VHB services are currently unregulated, it can be assumed that Openreach has set the price at the profit maximising level. Given the costs of supplying VHB circuits are falling the profit maximising price will also fall. Thus, a CPI-CPI cap based on today's prices will be above the profit maximising level in FY20 and FY21 and so will not constrain prices. This has three implications:

- Ofcom is failing in its duty to impose regulation that curbs Openreach's market power and prevents harm to consumers through excessive pricing;
- it is misleading to call this CPI-CPI VHB charge control a 'safeguard cap' since it will not constrain prices or safeguard consumers in any meaningful form. Rather, it will permit Openreach to set the profit-maximising price on the basis of its current level of market power; and,
- it could lead to a false conclusion at the next BCMR that Openreach is subject to competitive constraints, because it is not pricing up to the regulatory price cap.

5.4 Summary on cost-based charge controls

5.43 Ofcom has proposed CPI-CPI charge controls which will leave CI prices about £250m above cost, causing significant harm to consumers through increased end-user prices and weakened competition. Ofcom's claimed reasons for departing from cost-base charge controls – stimulating investment and to provide stability/certainty – are wrong:

- on Ofcom's own evidence higher prices in this review period will not stimulate additional investment
- Ofcom's approach reduces certainty by departing from its well-established policy
- aligning with where Ofcom think the Access Review will conclude would prejudge the Access Review and breach Ofcom's public law duty to consult.

[83] See footnote 58

[84] BCMR Statement May 2018 §7.96

[85] For instance, see WLA Statement March 2018 vol2 §3.41. This was applied when Ofcom first regulated SFI charges

5.44 We consider that a cost-based charge control should be imposed in the following markets given that on Ofcom's own evidence no incremental investment is expected:

- CI Access BT+0
- CI Access BT+1
- CI Inter-exchange market – all routes where SMP

5.45 In the CI Access HNR areas (excluding CLA) Ofcom has proposed no charge control. Unlike in BT+0 and BT+1 markets Ofcom has not concluded that there will be no further material investment in this market review period. We encourage Ofcom to conduct such an analysis to identify whether setting prices higher than cost will stimulate material additional investment and whether the benefits resulting from the additional investment the expected benefits of increased investment outweigh the harm from higher wholesale prices. Only if both these conditions are met should Ofcom set prices above cost. Otherwise Ofcom should set a cost-based charge control.

5.46 If there is a soundly reasoned case for prices above cost then we consider that this should not be a CPI-CPI cap but rather set prices a certain amount (say 15%) above cost. A CPI-CPI cap is essentially arbitrary and also exposes Openreach and CPs to the risk of inflation volatility. The margin above cost (e.g. 15%) could be set by reference to the sensitivity of investment to prices and altnet cost levels, and aim at maximising net benefits to consumers. The charge control can then be set using a CPI-X structure whereby prices glide to the revised cost plus point over the charge control period.

5.47 In the CLA Ofcom has proposed a finding of no SMP. As we describe above in section 2.3.4 we think such a conclusion is unjustified. If Ofcom finds SMP then the approach to charge control should be similar to that for HNR areas described above i.e. impose a CPI-X charge control to glide to Openreach costs plus 15% (or some other defined value) if Ofcom can demonstrate there are consumer benefits from such an approach. Otherwise Ofcom should set a cost-based charge control.

5.5 Other points on pricing

5.48 In this section we comment on a number of other aspects regarding the Ethernet charge control.

5.5.1 *Excess profits for BT*

5.49 If Ofcom were to set prices above cost this would, absent any other intervention, result in increased excess profits for Openreach. Openreach's excess profits are currently around £1bn a year, and most of them have no economic benefit or pro-competitive rationale.

5.50 In the case of Ethernet charges, it is not necessary to allow BT to enjoy excess profits from prices above cost as there is no consumer benefit from them. For example:

- in the case of FTTC it was appropriate to allow GEA(FTTC) prices to be above cost and for BT to enjoy excess profits from these since the opportunity of higher profits incentivised investment;

- in order to incentivise rival leased line network investment (as is the case here) there is no need for BT to enjoy any excess profits.

5.51 Instead, any permitted excess profit should be used to generate consumer benefits. This could be done in a number of ways such as:

- reducing the prices of other regulated wholesale products (providing that those prices remain above marginal cost);
- requiring BT to use the excess profits to fund FTTP roll-out in 'unprofitable' areas.

5.52 Thus, if Ofcom were to set prices above cost then it must also consider how it addresses the excess profit that this generates. This approach should also be applied to TI products.

5.5.2 *Inter-play between DFA and Ethernet*

5.53 There may be an issue regarding the inter-play between the introduction of DFA and the ongoing ethernet charge control– in particular, whether regulation on Ethernet should be relaxed to reflect the potential constraint from DFA.

5.54 Given the time it is likely to take to launch the DFA service, and the subsequent need for testing and trialling of DFA (up to 12 months) DFA is unlikely to be used in volume in this review period, and therefore will not act as a constraint on Ethernet. It would therefore be inappropriate to weaken Ethernet regulation in this period to reflect the introduction of DFA. We note that in BCMR16 Ofcom did not impose a charge control on VHB services since it expected DFA to act as a constraint. This did not happen leaving consumers exploited by BT's market power.

5.55 However, in the subsequent market review period there may well be a case for relaxing regulation of Ethernet services.

5.5.3 *Length of charge control*

5.56 Ofcom proposes a two year charge control to align with the start of the Access Review in April 2021. Unfortunately, Ofcom regularly fails to complete market reviews on time creating lacunae in charge controls since they fall away. A simple mitigation to this would be to extend the charge control to cover (say) three years. We consider that Ofcom should adopt this given the evidence of Ofcom's failure to compete market reviews on time and in light of the fact that the Access Review is complex and thus has a greater risk of delay.

5.5.4 *Basket structure*

5.57 We broadly agree with Ofcom's comments regarding most of the advantages and disadvantages of baskets (v2 §3.15). However, Ofcom has overlooked a key disadvantage of baskets specifically that Openreach can use a basket structure to discriminate against non-BT customers. For instance, if non-BT customers consume a relatively large proportion of lower speed services (within the basket) they can focus price increases on these services thereby increasing group wide revenue without increasing the costs faced by BT Group (i.e. profitable discrimination). It is critical that Ofcom takes measures to identify this behaviour.

5.58 Ofcom has set separate charge control baskets for 1G and below services and VHB services (each with a CPI-CPI price cap). Under the CPI-CPI caps it would be inappropriate to regulate these services within the same basket since this would allow Openreach to raise the average price of 1G (and below) services.

5.59 However, if both 1G and below and VHB services are price regulated at cost (including a starting charge adjustment on VHB services) then it may be appropriate to consider whether all the CI services should be regulated in the same basket. This would have advantages since there are no underlying differences in the competitive conditions for 1G and below and VHB services. It is an anachronism to have separate baskets. However, and to be very clear, creating a single basket covering all CI services basket would only be appropriate in the case that all CI services are price regulated at cost and a starting charge adjustment is applied to VHB services.

5.5.5 *Uniform pricing obligation*

5.60 Absent an obligation to set the same uniform prices across different geographic areas, Openreach may choose to discount only in geographic areas where there is competition. This would maximise profits, by engaging in third degree price discrimination[86]. Ofcom has highlighted that such discounting would be harmful (vol 2 §5.19). This is a real threat since under Ofcom's proposals there will be very differing levels of competition within each geographic market. For example, within the BT+1 market there will be significant differences in competition with some postcode sectors having a viable rival for less than 5% of premises. It is also fairly straightforward for Openreach to identify areas and/or premises where there is less competition.

5.61 Ofcom has proposed that such non-UK wide discounts would not count in the assessment of compliance. However, this will only reduce incentive to price discriminate in this way – it will not remove the incentive since it may remain profitable for Openreach to reduce prices only in competitive areas to deter competition.

5.62 Therefore, we consider that Ofcom should impose a uniform pricing obligation whereby Openreach's prices should be uniform across all areas where it has SMP.

5.5.6 *Assessing charge control compliance*

5.63 When assessing compliance with a basket there is a question of which (if any) discounts should be included in the assessment of whether Openreach has met the charge control obligation.

5.64 In general, we agree that Ofcom should not encourage discounts by allowing discounts to count towards compliance since they are contrary to the principle of price predictability. Discounts should also be discouraged since they can be used to discriminate in favour of BT. We have the following comments on particular forms of discounts below.

- We agree that time limited discount do not count towards compliance since allowing them results in unpredictable prices.

[86] Third degree price discrimination is a form of price discrimination based on price elasticity of different customers (as a result of, say, differences in demand or competition)

- We agree that discounts (or lower prices) for longer terms should be included since these discounts reflect lower cost
- We agree that volume discounts should not count since they can be used to discriminate in favour of BT.
- We agree that geographic discounts should not count towards compliance since this will deter Openreach from reducing prices in more competitive areas in a predatory manner. However, this rule is insufficient to deter predatory pricing – it merely prevents Openreach subsidising predation from non-competitive areas.

5.65 We note that contrary to Ofcom's claim sub-caps don't deter discrimination – rather they merely limit the rate of increase in discrimination and harm (vol2 §3.17, §3.28).

5.66 We also agree with allowing prices above/below cap to be offset in following year (§v2 5.13). However, we note that Openreach has an incentive to overcharge since no interest payable when it does so.

5.67 Ofcom should also monitor the basket for gaming such as:

- increasing (relatively) the prices of higher growth products which exploits the prior year weighting method to gain excessive levels of revenue
- inappropriately squeezing the margin between EAD and EAD-LA variants to discourage network build

5.6 Cost forecast assumptions

5.68 In this section we discuss Ofcom's assumptions for efficiency and WACC used to forecast the costs of Ethernet and DFA.

5.6.1 *Efficiency*

5.69 Ofcom sets out its approach to efficiency at §§A18.47-A18.57.

5.70 On operating costs, Ofcom sets out three sources of data to calibrate its efficiency assumptions:

- regulatory cost analysis, which provides an estimate that BT has achieved 7.2% per annum annual cost savings, on average, between 2012/13 and 2016/17 (§A18.51)
- an analysis of Openreach and BT Technology historic data, which suggests that historically, efficiency gains of 5.7% per annum have been achieved (§A18.52);
- an analysis of Openreach and BT Technology forecast efficiency and cost transformation targets, which forecast efficiencies of 5.1% per annum (§A18.52).

5.71 These point to a range of around 5% to 7.5% efficiencies per annum. The mean of these estimates is 6% efficiency gains per annum, and the midpoint of the range of them would be 6.2% per annum.

5.72 However, notwithstanding these data, Ofcom states that:

Having considered all the evidence in the round, we use a range of 4% to 7% per annum for our operating cost efficiency target within the model and our analysis indicates that BT can achieve the higher end of this range. We have sought to identify a challenging but achievable target, which while not easy to meet, is nevertheless capable of being exceeded. (§A18.55)

5.73 Ofcom provides no evidence supporting, or justification for, the element of this range between 4% and 5%. Such a level of performance would be below BT's internal forecasts, as well as both estimates of its historic performance. Equally, the top of the range is below one of the historic estimates of recent performance.

5.74 Furthermore, Ofcom has provided no support for its apparent preference that BT should be able to '*achieve the higher end of [its] range*' or exceeding the target. This would appear to impose costs on consumers, due to higher prices, without any obvious benefits. Ofcom appears not to have taken into account the central point of efficiency targets, that they are symmetric, and the incentives to improve efficiency do not depend upon whether the regulated firm thinks it is likely to exceed the target or not.

5.75 Ofcom seems to misunderstand the role of the efficiency assumption. It is not a 'target' that must be achievable. Rather it is an estimate of what an efficient firm would achieve. If Openreach is inefficient, it should underperform this efficiency target.

5.76 Ofcom should therefore change its efficiency target to a range of 5% to 7.5%, with a central point estimate of between 6.0% and 6.2%. This range better aligns with the evidence that Ofcom has adduced than Ofcom's current proposals.

5.6.2 *WACC*

5.77 In this section we discuss Ofcom's estimate of BT's cost of capital, and the relevant cost of capital for leased line services, as set out in Annex 21 to Ofcom's BCMR proposals.

5.78 Overall, TalkTalk considers the proposals regarding the WACC to be an improvement over the flawed decisions in the previous BCMR (in 2016) and indeed the 2018 WLA review. However, there remain some inconsistencies between Ofcom's proposals and the market evidence, notably in the cost of debt, which is considerably higher than can be supported.

5.79 Ofcom has taken the correct analytical approach in a number of areas. However, there are significant flaws in Ofcom's work, particularly on the cost of debt (embedded debt should not be taken into account, and even if it is, Ofcom has overestimated its cost), but also in areas such as beta disaggregation, which lead to an inflated estimate of the cost of capital.

5.80 In particular, Ofcom should amend its proposals in the following areas:

- the cost of debt should be reduced to 3.0%, as there should be no allowance given for embedded debt, in light of European guidance and Ofcom's established approach;[87]

[87] Even if an embedded debt allowance is given, then as set out below at §§5.93-5.104 the appropriate cost of debt is no more than 3.0% once inefficient debt issuance in 2000 is removed from the calculation.

- Ofcom should use a two year beta rather than a five year beta, to remove the distorting effect of the Brexit referendum;
- Ofcom should use optimal gearing rather than an actual gearing level, and set this at 50-60%;
- Ofcom should conduct a four part rather than three part, beta disaggregation, splitting 'Other UK telecoms' into 'Rest of Openreach' and 'Non-Openreach UK', estimating different asset beta, gearing levels, and debt premia for these disaggregated parts of BT Group; and,
- Ofcom should set an asset beta for dark fibre below the level of that for Openreach copper, with the most appropriate estimate of dark fibre beta being at or close to zero.

5.81 The impact of these correction is material – about a 1% change in the WACC which will reduce costs by about 4%.

5.6.2.1 *Cost of debt*

5.82 Ofcom sets out its proposals on the cost of debt for BT at §§A21.71-A21.94 of its consultation. In summary, Ofcom proposes to adopt a blended cost of debt, weighting together the forward-looking cost of debt facing BT with the historic cost of BT's embedded debt. Ofcom finds that the range for the total cost of BT's debt is 3.5%-4.5%, and adopts the midpoint of this range (4.0%) as its estimate. This reflects a weighting of 15-35% on the new debt cost of 2.9%, and of 65-85% on the embedded debt cost, which is redacted from Ofcom's document but which can be calculated to be 3.7%-4.7%.[88] 10 basis points is included in Ofcom's estimate for issuance costs, in line with the CMA's *Bristol Water* decision.

Ofcom should not provide an allowance for the cost of embedded debt

5.83 The move to include embedded debt costs is a significant departure for Ofcom, which has previously set charge controls based only on forward-looking debt costs. This approach is inconsistent in two respects and creates poor incentives, and should be dropped by Ofcom in favour of an entirely forward-looking approach to calculating WACC.

5.84 First, the use of a partially backward-looking cost of debt creates inconsistency with other parameters in the WACC calculation, all of which are entirely forward-looking. Consistency between different elements of a calculation is important, as otherwise there is a risk that even if each individual element of the calculation is appropriate, given the methodology, the total WACC is wrong (due, for example, to double counting), and Ofcom should ensure such consistency by solely using a forward-looking methodology for estimation.

5.85 Second, the use of a backward-looking cost of debt is inconsistent with Ofcom's established approach, based on European guidance. As Ofcom itself set out in court submissions in 2012:

[88] For the low end estimate the formula is 3.4 = (2.9 * 35%) + (3.67 * 65%). For the high end estimate, the formula is 4.4 = (2.9 * 15%) + (4.67 * 85%).

the consistent guidance of the EU institutions had been that, when performing its analysis for setting [a] charge control, it should adopt a forward-looking analysis and allow only efficiently-incurred costs.[89]

5.86 As Ofcom further elaborated in those proceedings:

Forward looking costs are the costs of the resources used to provide the service in question. To be a forward-looking cost in the relevant sense, a cost must not only be payable in the future if the firm continues to supply the service or services in question, but it must also be avoidable if it ceases to provide the service or services.[90] *[emphasis added]*

5.87 Embedded debt costs do not meet this criterion. There is no sense in which the costs of embedded debt would be avoided or lowered if BT ceased to provide leased line products, as the high interest rates are already reflected in the coupon yields of BT's traded debt, which would not change based on the products provided by BT.

5.88 As such, embedded debt costs are not a forward-looking cost. In order to be consistent with European guidance and its established approach, Ofcom must therefore set the cost of debt solely on the basis of a forward-looking cost of debt.

5.89 Third, Ofcom's approach of allowing the actual cost of embedded debt creates perverse incentives for BT to game the regulatory system. As Ofgem sets out in its RIIO-2 consultation:

We need to consider if [allowing embedded debt costs] protects consumers from inefficient issuance if companies believe they obtain a near pass-through for certain years immediately preceding a new price control. Ideally, companies would have a consistently strong incentive from one price control to the next. If companies are only exposed to debt risks at the start of the price control period, they may be more inclined to delay debt issuance or investment until later in the price control, even if investment is needed earlier and/or if debt costs are due to be more expensive later.[91]

5.90 Ofcom does not appear to have considered the incentive effects of moving to an embedded debt system in its proposals. This is inappropriate, and Ofcom should assess this issue in detail before reaching a final decision.

5.91 Lastly, we note that Ofcom has failed to provide any explanation for this major deviation from its established policy of using only forward looking costs – this is a procedural flaw. This assessment must reflect not only the impact on consumer interests and on BT's incentives, but also the impact on regulatory certainty of deviating from its well-established policy.

5.92 Overall, therefore, it is inappropriate for Ofcom to include an allowance for embedded debt in its BCMR proposals on WACC. To do so both ignores European guidance and Ofcom's established policy, and creates adverse incentives for BT to game its debt issuance in future. Ofcom should adopt an entirely forward-looking cost of debt, with no regard to the cost of embedded debt.

---

[89] Competition Commission (2012), *British Telecommunications plc v Office of Communications*, case 1187/3/3/11, at §1.137

[90] Ofcom Defence in Case 1187/3/3/11 at §56.

[91] Ofgem (2018), *RIIO-2 Framework Consultation*, at §7.24

Ofcom's allowance for the cost of embedded debt is too high

5.93 Section 5.6.2.1 above has set out that Ofcom should not take embedded debt costs into account in order for Ofcom to maintain its approach in line with European guidance and create appropriate incentives. This section proceeds on the basis that Ofcom (incorrectly) continues to use an approach of including embedded costs of BT's debt when determining the overall cost of debt, and considers whether the level of the allowance (rather than the principle of whether there should be an allowance at all) is appropriate.

5.94 When considering the cost of BT's embedded debt, it is first important to derive the costs of that debt. First, it should be noted that BT's debt almost entirely consists of traded debt. This can be seen from a comparison of two BT sources:

- BT's Annual Report 2018 sets out at note 25 to the accounts (page 251 of the report) that BT Group had £2,281m of debt due within 12 months, including accrued interest and bank overdrafts.
- BT's investor relations page sets out that BT Group has/ had three bonds due in the 12 months ending 31 March 2010: a €600m tranche due 3rd August 2018; a $800m tranche due 14th February 2019; and a £450m tranche due 28th March 2019.[92] Collectively, at current exchange rates, these bonds have a value of £1,620m.[93] This implies that overdrafts and bank lending is no more than £600m, compared with outstanding bonds after March 2019 of approximately £16bn.[94] That is, at least 96% of BT's debt is traded debt (and potentially more, given that some of the £600m may have been unpaid interest).

5.95 Given that at least 96% of BT's total existing debt is traded debt, the average coupon yield on traded debt instruments should be an accurate estimator of BT's overall cost of this debt.

5.96 TalkTalk has calculated that the weighted average coupon yield on BT's traded debt instruments is 3.50% for debt which falls due after the start of the BCMR's regulatory period. This is derived from a weighted average cost of debt of:

- 4.92% for BT's sterling-denominated fixed interest debt (£3,150m);
- 1.16% for BT's euro-denominated fixed interest debt (€9,300m);
- 7.38% for BT's dollar denominated fixed interest debt ($1,375m); and,
- 4.17% for BT's index-linked debt (£1,250m).[95]

---

92 https://www.btplc.com/Sharesandperformance/Financialreportingandnews/Debtinvestors/index.htm

93 At an exchange rate of 1.11 EUR/ GBP and 1.27 USD/ GBP. The same exchange rates are used for all calculations and weightings in this section.

94 See once more https://www.btplc.com/Sharesandperformance/Financialreportingandnews/Debtinvestors/index.htm with euro and dollar denominated debt converted to sterling at the above exchange rates.

95 To calculate the cost of index-linked debt, it is necessary to make assumptions regarding the prevailing future interest rates. TalkTalk has assumed in this analysis that CPI averages 2% over the long term, in line with the Bank of England's inflation target, and RPI averages 2.5%, reflecting the BoE meeting its CPI target and that RPI inflation tends to be somewhat higher than CPI inflation.

5.97 This means that BT's overall weighted average cost of existing debt is 3.50%, reflecting that there is more euro-denominated debt than debt in any of the other groups.

5.98 It is also notable that the cost of dollar-denominated debt is an outlier, at 50% more than the cost of the next highest type of debt. This largely reflects a single tranche of $2.67bn of debt, issued in 2000 at a 30 year maturity, with a coupon of 8.625%+1%, at a time when BT was seen as a poorly run firm which faced serious risks of default. As the contemporaneous *Daily Telegraph* article on the issue stated:

> *Bond market sources said that the company had unexpectedly included a "step-up coupon", a guarantee that the bond yield would increase if the company's credit rating fell below "investment grade". Earlier in the year the company had refused to include such a provision. The inclusion of the coupon was seen as a sign that the battered company feared that its credit rating could for the first time drop below investment grade*[96]

5.99 This followed the failure of an earlier bond sale, in August 2000, over fears regarding BT's solvency, at which time it was stated:

> *S&P, which is reviewing BT's debt after Germany's mobile auction last week, had been expected to mark BT down from AA grade to single A.*
>
> *S&P's principal rival, Moody's, also has BT on notice of a credit downgrade. Moody's said yesterday it was also concerned about the cost of third generation mobile licences and the company's appetite for taking majority shareholdings in countries outside the UK.*[97]

5.100 This bond issue fell in BT's financial year 2000/01. In that year, BT spent £9.25bn to purchase a majority shareholding in Germany's VIAG Interkom, and £1.44bn to purchase Telfort. In the prior financial year, it had spent £3.17bn to purchase Cellnet, and £1.5bn to purchase Esat.[98] Following this heavy acquisition spending, BT was forced into a £5.9bn rights issue to stabilise its balance sheet, and cancelled its dividend payment.[99]

5.101 It is therefore clear that, first, the coupon yield on these dollar-denominated bonds was inflated by BT's stretched balance sheet, which was not one which an efficiently run company would have had to pay. Instead, BT was inefficiently run, to the extent of having to put in place a rescue rights issue and step-up payments for if its debt was downgraded to junk status. As the high yield reflects inefficient management and BT's international forays, it should not be passed through into leased line charges. Second, there is overwhelming evidence that the bond in question was used to fund overseas acquisitions and mobile spectrum auction bids, rather than anything relating to BT's UK-based fixed line network. It therefore has nothing to do with the costs of operating any part of Openreach, and should not be taken into account when considering the cost of capital for leased lines (or indeed access lines).

5.102 Consequently, this 2030 dollar bond should be disregarded when calculating the cost of BT's embedded debt. This lowers the coupon interest rate on the remaining outstanding dollar bonds to 4.82% (from 7.38%), much closer to the cost of BT's other debt instruments. This

---

[96] https://www.telegraph.co.uk/finance/4472724/BT-shaves-2bn-from-bond-issue.html

[97] https://www.telegraph.co.uk/finance/4462810/BT-pulls-bond-on-debt-fears.html

[98] BT Annual Report 2001, Note 16 to the financial statements.

[99] BT Annual Report 2001, Chairman's Message.

gives an average cost of embedded debt for BT of 2.57% for debt other than the 2030 bond which will be outstanding at the start of the next review period.

5.103 Ofcom should therefore—if it erroneously chooses to take embedded debt costs into account— calculate a cost of debt for BT based on a cost of new debt of 2.9% and a cost of embedded debt of 2.6%, plus an allowance of 0.1% for issuance costs (which Ofcom correctly takes into account). This provides for an overall cost of debt of 2.9%, blending together the future and the embedded debt.

5.104 Consequently—and instructively—although it is theoretically correct to only use the cost of forward-looking debt, in this instance the two approaches (including and not including embedded debt costs related to the UK fixed line network) lead to approximately the same answer—that BT's group cost of debt is 2.9%-3.0%. Ofcom should adopt an estimate from within this range, rather than the excessive 4.0% estimate which it proposes at §A21.94.

5.6.2.2 *Risk free rate*

5.105 TalkTalk welcomes Ofcom's changes in the level of the RFR in the current review compared to that in previous regulatory reviews. In the most recent review (WLA18) Ofcom assumed an RFR of 0% versus evidence which indicated a RFR of around -1.5%. In this review Ofcom's RFR proposal (-1.25%) more closely reflects the relevant evidence.

5.106 In particular, we agree with the analysis set out in §A21.35, especially the strong case for placing substantial weight on recent evidence when determining the RFR.

5.107 The choice of an RFR of -1.25%, some way above prevailing forward rates of three and five year bonds, which, as Ofcom sets out at §A21.35, are around -1.5%, means that Ofcom has been (yet again) cautious in its approach, and placed its estimate at the highest level which could be supported by the evidence. Ofcom has not explained why it has adopted the high point in the range or why it is more efficient and in consumers' interests to be cautious in this way. If Ofcom cannot provide any such reasoning it should adopt the three year forward RFR for 5-10 year gilts, which is currently -1.5%.

5.108 Ofcom should certainly not increase its -1.25% assumption in its final decision; any increase would simply be unsupported by evidence, and would be out of line with the approach being adopted by other regulators. Ofcom should consider whether it would be more appropriate to reduce the RFR further, to -1.5%, in line with the current forward rates on three and five year bonds. This would be the most accurate approach.

5.6.2.3 *Total market return/ ERP*

5.109 Ofcom sets out considerable evidence on the appropriate total market return (or, equivalently, the ERP) at §§A21.37-A21.66 of its proposals. TalkTalk welcomes a full, evidence based, consideration of the appropriate parameter values in this case, although we disagree with the final point estimate which Ofcom has chosen, which does not align with the evidence. We recommend that Ofcom adopts a similarly evidence-based approach throughout the many other aspects of BCMR decision making which are at present simply asserted.

5.110 In light of the European guidance that Ofcom should adopt forward-looking regulation, we consider that the most important evidence for Ofcom when setting the TMR should be the historical *ex ante* evidence provided at §§A21.50-A21.53. Historical *ex post* data relies heavily on long-term time series, and so can be misleading if there are structural breaks. There is strong evidence that such a structural break in the cost of finance occurred at the time of the 2007/8 financial crisis. *Ex ante* data avoids this problem, as it is a forward-looking measure. Ofcom's past decisions are also impaired by being partly based on historical *ex* post data. As such, although other evidential sources have some value, they should not trump this more important evidence, but rather point to where in the range provided by historical *ex ante* estimates Ofcom should choose to set its point estimate.

5.111 This implies that Ofcom should be targeting the top end, or just above, of the range of 5.7%-5.9% set out by the historic *ex ante* estimates set out by Ofcom at §§A21.50-A21.53. Overall, this implies that a TMR of around 6%, somewhat lower than Ofcom's range of 6.25%-7%, would be appropriate.

5.112 It is unclear how Ofcom justifies its range of 6.25%-7% set out in §A21.59, much less the point estimate of 6.7% which it chooses. As Ofcom states at §A21.58:

- historical *ex post* approaches fall in a range of approximately 6-7% (implying a midpoint of around 6.5%);
- historical *ex ante* approaches fall in a range of 5.7% - 5.9% (implying a midpoint estimate of 5.8%);
- forward looking evidence on the DGM yields results in the 6.4%-6.7% range, implying a midpoint of 6.55%.

5.113 As such, the point figure of 6.7% chosen by Ofcom is above the midpoint of the ranges of all of the evidential sources set out by Ofcom; above the top of one of the ranges; and at the top of the range for another source. It therefore appears higher than can be justified by the evidence taken in totality; Ofcom has not justified its reasoning for choosing this point estimate, which would necessarily require it to place little or no weight on the historical *ex ante* evidence.

5.6.2.4 *Inflation*

5.114 Ofcom notes at §A21.95 that it proposes to use the most recent OBR estimates of RPI and CPI inflation when setting its charge control and determining BT's WACC. This is appropriate and correct, and should be adopted by Ofcom in its determination.

5.6.2.5 *Equity beta*

5.115 In estimating the future equity beta Ofcom's proposes to place weight on the historic five year equity beta rather than the two year equity beta in this review. It proposes this because:

> *We have previously placed weight on two-year betas as a trade-off between recent beta estimates on the one hand (which may better reflect current views of systematic risk but can be volatile and less statistically robust) and on the other hand, average betas over a longer period (which can be less volatile and more statistically robust but may be less reflective of current views of systematic risk). The referendum effect has clearly had a*

significant impact on BT's two-year equity beta... Confidence intervals on two-year betas have also increased since the referendum, reducing the statistical reliability of the estimates.

the high degree of uncertainty around the referendum and how it will affect UK companies going forward supports placing greater weight on five-year betas. We do not consider it is appropriate to ignore the referendum effect, but rather to give it due weight in our analysis. Placing weight on five-year betas captures the time before and after the referendum and, given current uncertainties, we consider it would strike a better balance between regulatory stability and efficient price and investment signals.

5.116 Ofcom's reasoning in this regard is unclear. The referendum on membership of the EU was a one-off event which had the impact of distorting capital markets at the time; this distortion has now dropped out of the two year equity beta data but is included in the five year equity beta. There is unlikely to be a further referendum on EU membership, as such a referendum is the policy of neither the Government nor the opposition. Ofcom should therefore favour a time period which excludes the shock impact of the Brexit referendum, but which does reflect the consequent change in market expectations. Moreover, Ofcom's previous practice was to use two year equity betas, rather than the longer five year estimates, and changing this approach will tend to reduce regulatory certainty. Finally, Ofcom refers to 'uncertainties' without referencing what these are or how they will impact the perceived market-correlated risk of BT Group. Moreover, if there are such ongoing uncertainties which impact BT's systematic risk, they should be *more,* rather than less, prevalent in the two year beta estimates, which omit the first two or three years of the data, when the uncertainties were presumably less pronounced. Ofcom has therefore not adequately explained its proposals in this regard.

5.117 Overall, therefore, Ofcom should use a two year beta rather than a five year beta when determining its cost of capital for leased lines.

5.118 TalkTalk agrees with Ofcom's approach on the debt beta and in using BT's average gearing over the same period which is used to calculate the equity beta.

5.6.2.6 *Gearing*

5.119 Ofcom proposes to use a forward-looking gearing in the range of 25%-50%.[100] From this range it chooses a point estimate of 35%-- below the current level of BT's gearing '*since it is similar to BT's current and longer-term gearing averages and falls within a credible range based on comparator companies*'.

5.120 Looking at the accompanying NERA report on gearing levels, it can be seen that 35% would be an unusually low gearing level for a regulated entity. The average of other utilities firms presented in Table 3.4 of the NERA report is 50%, which would appear to be a much more appropriate gearing assumption for a regulated network firm than the 35% proposed by Ofcom. Other telecoms firms are not relevant comparators in this regard; TalkTalk is predominantly a UK retail business, which faces completely different systematic risks from BT, and should not be used as a comparator for determining the cost of capital of a wholesale product provided by Openreach. The same is true of Sky, which primarily operates

[100] §A21.107

a premium TV content platform which would be expected to be much more exposed to cyclical demand risk than Openreach. We note that NERA does not provide any analysis which sets out why the gearing levels of Sky and TalkTalk are relevant comparators for Openreach, merely blandly stating that other quoted telecoms firms are 'comparators'. TalkTalk disagrees that there is any relevance in comparing the risk of Openreach to that of TalkTalk; if Ofcom wishes to draw such an assumption, it should provide detailed evidence of the similarities in systematic risk profiles.

5.121 Regulators in other sectors have in general set gearing assumptions on the basis of notional gearing levels, and found that those appropriate levels are in excess of 50%, as set out in Table X.1 below.

Table X.1: Other regulators' approaches to gearing

Regulator	Review	Date	Gearing level	Basis for gearing
CAA	H7	Dec 17	60%	Notional
Ofwat	PR19	Dec 17	60%	Notional
Ofgem	RIIO-2	Mar 18	50-65%	Notional

5.122 There is thus considerable consistency across other regulators' decisions on gearing in the last year. The general approach has been to adopt notional gearing of around 60%; this is consistent with regulatory precedent, as noted by PwC at Table 3.1 of its paper.

5.123 Similarly, other major telecoms incumbents have gearing levels well in excess of 30%. For example, Telefonica has gross debt of around €55bn, and net debt of around €44bn, set against a market cap of around €43bn, resulting in gearing levels of 50-60% depending upon whether net or gross debt is used. It maintains a BBB rating with both Fitch and Standard & Poors at this gearing level. Deutsche Telekom has around €57bn of debt and a market capitalization of around €72bn, implying gearing of around 45%. It holds long term ratings of BBB+, the same as BT Group.

5.124 There are clear reasons why BT's level of gearing may be inappropriate for Openreach. In particular, Openreach is a small part of BT Group, and is the least systematically risky element of BT's business. The optimal level of gearing for other parts of BT is likely to be much lower—indeed, it may be zero for some lines of business such as Global Services or BT Sport. Therefore, even if BT has set the optimal gearing level for the Group as a whole, there can be no presumption that this gearing level is also efficient for Openreach's regulated lines of business.

5.125 It seems entirely counterintuitive that, for the least risky element of BT (the Openreach access and leased line business), Ofcom should set a future gearing level below the actual gearing level of BT Group, which blends together Openreach with cyclically volatile and risky lines of business such as Global Services and BT Sport. The proposed gearing level is also below that of TalkTalk, which will be much riskier than Openreach given our lack of market power and serving markets which sit downstream of Openreach.

5.126 Ofcom should therefore use a notional gearing level modelled on a suitable set of comparators for Openreach's gearing level. A level of around 50-60% would seem appropriate given that similar levels are sustained by Telefonica and, in the UK regulated environment, Heathrow Airport. As these other firms have been able to sustain investment

grade credit ratings at gearing levels well in excess of those of BT Group, there should be no uplift to the debt premium to reflect this higher level of gearing.

5.6.2.7 *Debt beta*

5.127 TalkTalk agrees with Ofcom's proposal to use a debt beta of 0.10 when calculating the cost of capital for leased lines.

5.6.2.8 *Corporate tax rate*

5.128 TalkTalk agrees with Ofcom's proposal to use the prevailing corporation tax rate of 17% when setting the cost of capital.

5.6.2.9 *Disaggregation of BT Group asset beta*

5.129 Ofcom proposes, as in previous reviews, to disaggregate BT's beta into three parts—Openreach copper, Other UK telecoms, and Rest of BT. The leased line markets covered by the BCMR fall into the 'Other UK telecoms' basket, which encompasses well over half of BT, including such disparate lines of business as Openreach FTTC products; Openreach leased line products; BT Sport; EE; and BT Consumer.

5.130 This approach to disaggregation is no longer fit for purpose. There is unlikely to be any consistency between the systematic risk of a business leased line network and the other elements of the Other UK telecoms basket (a mobile network, and a sports broadcaster) and Ofcom has never presented an argument as to why the risk of this set of products should be similar. The current tripartite split was conceived at a time before BT had launched BT Sport, and before they had acquired EE. At that time, when 'Other UK Telecoms' was largely fixed line telecoms services in the UK, it broadly made sense to adopt this split. It no longer does so. Other UK Telecoms is likely to be a biased overestimate of the cost of capital of offering leased line services in the UK.

5.131 Ofcom's argument for setting a single WACC for 'Other UK telecoms' is contained within §A21.117, which states:

> *The systematic risk faced by the telecoms activities included in Other UK Telecoms is likely to be reasonably similar. In the 2018 WLA Statement we considered it would be reasonable to assume that the systematic risk faced by the telecoms activities included within Other UK Telecoms is likely to be reasonably similar since they are characterised by: (a) using a fixed telecoms network, which often involves shared or similar infrastructure and hence, similar degrees of operational gearing; and (b) involves sales to customers who are able to scale demand in response to changes in the macroeconomic cycle to a greater extent than for basic access connections*

5.132 This statement is factually incorrect. The largest element of 'Other UK telecoms' is EE—a mobile connectivity business. A further major element of 'Other UK telecoms' is BT Sport, a sports broadcaster which creates content disseminated over a range of different platforms, including mobile, terrestrial television, and DTH television. 'Other UK telecoms' is therefore not a group of homogenous activities which use a fixed telecoms network; it is a diverse range of businesses with little in common beyond ownership.

5.133 The 2018 WLA Review contained no evidence or support for Ofcom's assertions, merely referring to the 2016 BCMR. However, no paragraph reference was given for these assertions, and a search of Annex 30 of the BCMR, which deals with the cost of capital, shows that the phrases 'scale demand' and 'similar infrastructure' are not present in that document. This therefore seems to be an error by Ofcom—it bases its BCMR19 reasoning on the WLA18, which in turn bases itself on a fictitious finding in BCMR16. Indeed, such evidence as is presented in BCMR16 (for example, at §A30.225) does not find that all elements of 'Other UK Telecoms' faced similar risk, but rather that '*volume data was not available for all parts of BT, such as TV content or Global Services*' and '*it is less clear cut that a typical (vertically integrated) pay-TV business will be associated with higher systematic risk*'.[101] That is, Ofcom only concluded that it did not have sufficient evidence to reach a finding. Ofcom simply has no evidence to support its assertion that there are similar degrees of systematic risk between leased lines, pay TV, and the EE network.

5.134 It is clearly inappropriate for Ofcom to continue with the current three way split. Ofcom have a number of options to address this including:

- A four way split where leased line is removed from Other UK telecoms and is in its own basket
- A three way split where leased lines is included in an all Openreach basket including access and leased line services. This would be more appropriate since the risks of Openreach leased lines are much more similar to Openreach access products than to EE and BT Sport

5.135 Below we proceed our discussion on the basis of the four way split.

5.136 If Ofcom were to adopt a four way split of the cost of capital of BT Group it would retain Openreach copper and Rest of BT as previously. However, the over-large and diverse 'Other UK Telecoms' group would be split into two successor groups, which could be called something like "Other Openreach" and "Non-Openreach UK" respectively. "Other Openreach" would encompass all elements of Openreach other than Openreach copper, notably Openreach's FTTC business and the leased line operations which are regulated in the BCMR. Comparator firms for this business would be other regulated utility firms facing demand risk such as Heathrow Airport, NATS, and Network Rail. "Non-Openreach UK" would be a consumer-focussed line of business, the largest part of which would be EE, with comparators such as Sky, TalkTalk, Vodafone and Three. This split would much better approximate the different risks of the various parts of BT's business and allow much more suitable comparators.[102]

5.137 Furthermore, as well as disaggregating the asset beta and cost of debt between the different parts of BT, Ofcom should disaggregate the gearing level. It is unlikely that a pure play utility network business such as Openreach would choose to have the same gearing level as an IT firm like Global Services or a premium sports broadcaster such as BT Sport (both of which would be expected to be considerably lower geared). Ofcom should not presume that it

[101] §A30.225 and §A20.233 respectively.

[102] Alternatively, but second best, Ofcom could simply adopt a two-way disaggregation of Openreach from the rest of BT Group, setting a single cost of capital for Openreach and then using it for all regulated products, irrespective of whether the products are copper or fibre based. This option would still be far preferable to Ofcom's current proposals, which lead to an overestimate of the WACC for many Openreach products.

would do so, and should set a higher gearing level for both Openreach copper and Rest of Openreach than for other parts of BT Group (which would have a commensurately lower gearing level).

5.138 TalkTalk considers that at present the lowest disaggregated cost of capital should be for Openreach copper, followed by Rest of Openreach. However, we believe that the gap will be decreasing over time, as bandwidth above that which can be offered by copper lines becomes increasingly necessary and develops essential-utility characteristics becoming less cyclical. It is also unclear why Ofcom states (at §A21.117) that businesses are more likely than consumers to cut demand in a downturn. IT connectivity is essential to the vast majority of modern businesses, so leased lines would not be cancelled, and there is no meaningful saving from downgrading from lines at or below 1Gbps. Furthermore, businesses tend to be on longer term contracts than consumers, with most consumers on contracts of 18 months or less, while a typical business contract is twice as long, at 3 years. If Ofcom wishes to make such a counterintuitive assertion, it should provide evidence to support its statement, rather than simply asserting a hypothesis which appears unlikely to be true.

5.6.2.10 *Beta for dark fibre*

5.139 Ofcom sets out the beta for dark fibre services in its current proposals (that is, where dark fibre can only be used in CI inter-exchange) at §§A21.121-A21.127. Ofcom decides to use the same beta for dark fibre as for 'Other UK telecoms' describing its reasoning as follows:

> *since the scope of our dark fibre remedy is limited to a subset of the CI Interexchange market (i.e. it does not include access connections), demand for dark fibre is likely to be less sensitive to demand from individual end-users (i.e. business sites) in the access part of the network compared to active leased lines. Therefore, it is likely to be less correlated with the economic cycle...*
>
> *A dark fibre service is essentially agnostic to bandwidth, with the user of dark fibre in control over the bandwidth the line is used for. This means that from the perspective of Openreach, once a wholesale customer has purchased a dark fibre connection, revenue will be less dependent on bandwidth compared to active services...*
>
> *it is difficult to assess if any difference in demand risk would be significant in practice, as there is uncertainty around how dark fibre will be used and there is no existing service for which we might analyse volumes. Even if dark fibre were lower risk than active leased lines, it seems unlikely that the provision of dark fibre would be as low risk as providing local access connections to primarily residential premises.*

5.140 In essence, therefore, Ofcom presents two significant reasons why dark fibre demand is likely to be less volatile than other leased line demand, but then states that this reduction in volatility is likely to be difficult to quantify, and therefore proposes to ignore it.

5.141 TalkTalk is likely to be one of the largest users of dark fibre. Dark fibre will, under current proposals, be used to support our copper (and FTTC) access network; we will continue to need to backhaul from all exchanges at which we have LLU equipment. Once we have moved to dark fibre at an exchange, the only way to stop taking dark fibre (providing revenue volatility to Openreach) would be to cease all services from that exchange. As Ofcom correctly notes, there is also no way to downgrade the 'capacity' of a dark fibre line, and so customers shifting from FTTC/P services back to copper services will have no impact on the demand for dark fibre.

5.142 Consequently, Ofcom's statement that '*it seems unlikely that the provision of dark fibre would be as low risk as providing local access connections to primarily residential premises'* is wrong; rather, the provision of dark fibre under Ofcom's proposals will be lower risk than providing residential broadband, as loss of customer demand from customers ceasing to take broadband will not result in a reduction in dark fibre demand. Equally, faster growth in customer demand will also not impact demand for dark fibre, since (a) a single dark fibre provides essentially limitless capacity through the use of WDM technologies and [✂].

5.143 As such, demand for dark fibre will exhibit no correlation at all with the economic cycle; we note that Ofcom has presented no evidence at all that there will be any such correlation, and all the argument presented by Ofcom is consistent with there being no correlation.

5.144 This differs even from the water industry, which is often seen as the archetype of a regulated sector with low volatility of demand. Water companies will experience positive correlation of revenue with the economic cycle for three reasons:

- industrial demand for water will vary across the economic cycle; a reduction in the scale of UK manufacturing will drive lower demand for water for industrial purposes. As industrial water is priced by volume, this will reduce the revenue obtained by water companies, exposing water providers to positively-correlated revenue volatility;
- an increasing proportion of residential customers—currently around half—have water meters.[103] In the case of reductions in income, some of these users may choose to economise and reduce their water usage in order to reduce their bills. Once again, this will expose water companies to cyclically correlated revenue volatility;
- in the case of a recession, levels of bad debt are likely to rise for water companies, as residential customers become unable to meet their bills. This is exacerbated by the inability of water providers to disconnect residential customers. Bad debt is costly, both through incurring collection and administration costs, and through lost revenue which is never collected (or collected late, incurring additional financing costs and working capital requirements).

5.145 These points differ from dark fibre. Once a dark fibre is in place, there is no ability to 'downgrade' it, and the costs of leaving an exchange and reconfiguring an ISP's network will exceed by orders of magnitude the costs which can be saved by removing a dark fibre. As such, demand and revenue will be uncorrelated with the economic cycle. Furthermore, changes in bad debt will be negligible, as they would require an ISP consuming the dark fibre to enter administration or receivership with insufficient assets to pay creditors, and service could rapidly be halted in response to any such event. Whereas water firms experience cyclically correlated risk, there is no cyclical volatility in the revenue from dark fibre.

5.146 Consequently, the best estimate of the asset beta for dark fibre for CI inter-exchange market is 0, reflecting the lack of cyclical volatility of Openreach revenue. Ofcom should therefore set a zero asset beta, and amend the WACC for dark fibre, and price of the regulated dark

[103] https://www.water.org.uk/advice-for-customers/water-meters/

fibre product, accordingly.[104] At the very least, it should be significantly less than the beta currently adopted.

5.6.2.11 *Asset beta weightings*

5.147 In light of the deficiencies in Ofcom's proposed disaggregation, and the need to move to a split of BT Group which does not mix EE and BT Sport with leased line products when conducting WACC estimates, TalkTalk does not propose to comment on this section (§§A21.128-A21.134), as it will need to be fundamentally revised by Ofcom following a more appropriate split.

5.6.2.12 *Disaggregation of the cost of debt*

5.148 TalkTalk considers that Ofcom is correct to disaggregate the cost of debt for BT Group, providing for a lower cost of debt for less risky parts of BT such as copper access, and a higher cost of debt for riskier parts of BT such as Global Services.

5.149 TalkTalk agrees with Ofcom that other utilities are more highly geared than BT Group (§A21.153); we refer above to this in our rationale for using target gearing rather than actual gearing when calculating the WACC. As such, at 35% gearing (the level currently being used by Ofcom, which is *lower* than BT's actual gearing level) Openreach copper, with its very stable returns, would be expected to have much lower risk than areas such as Global Services (which would likely be well into junk grades at 35% gearing, given its long-term history of losing money). Ofcom states (§A21.154) that it assumes a one notch uplift for Openreach copper; however, it does not justify why it only uplifts the credit rating by one notch. Ofcom should conduct much more detailed analysis to attempt to determine what the increase in credit rating would be for Openreach copper compared to the other elements of BT (irrespective of whether it adopts a three or four part disaggregation) to place this on a firmer footing. At present it seems likely that the difference between the various parts of BT Group is lower than would be accurate.

5.6.2.13 *Summary*

5.150 As Ofcom has inappropriately disaggregated the WACC for the leased line charge controls, and has set an inappropriately low gearing level for Openreach, it is difficult to determine the precise appropriate WACC for Ethernet products. However, such a WACC will be considerably lower than the 7.9% proposed by Ofcom given the suggested changes:

- the real risk free rate should be reduced from -1.25% to -1.5%;
- the pre-tax cost of debt should be reduced from 4.0% to 3.0%;
- the real TMR should be reduced from 6.7% to 6.0%;
- the gearing should be increased to reflect the higher optimal gearing level of a separate Openreach; and,

[104] The argument in this section applies to CI inter-exchange dark fibre, but would not apply to dark fibre in CI access (which Ofcom does not currently propose). The appropriate beta for any dark fibre remedy proposed in the CI access market would be the same as the beta for 'Rest of Openreach' products, as the risk profile would likely be very similar to that for existing ethernet products.

- the asset beta should be reduced to reflect an appropriate four-way disaggregation of BT's business, removing the impact of BT Sport and EE on the estimated asset beta for leased line products.

5.151 It is unclear precisely what WACC this will lead to, as it will depend upon the estimates of gearing and asset beta. However, it will be at least 0.7% lower than the current WACC estimate (7.9%), and is likely to be over 1.0% lower once all changes are taken into account.

5.152 The appropriate WACC for dark fibre CI inter-exchange is somewhat easier to calculate, as the cost of debt and cost of equity are similar (indeed, the cost of equity is somewhat below the cost of debt). TalkTalk estimates that the appropriate WACC is around 3% nominal, on the basis of a cost of debt of 3% and, due to the lack of systematic risk associated with the product, a cost of equity which converges to the cost of debt, and therefore only takes company specific risk into account.

6 Quality

6.1 This section provides TalkTalk's comment on remedies related to quality including QoS standards and SLGs.

6.2 In general, TalkTalk supports Ofcom's proposals on QoS, which are proportionate and necessary to ensure that BT's market power is appropriately constrained. In the absence of binding QoS remedies, BT will have incentives and ability to earn supernormal returns by lowering its quality of service, as noted by Ofcom at §§15.4-15.5. This has been seen previously with BT, which made a substantial proportion of its engineering field force redundant, and then saw provisioning and repair times spike upwards.

6.3 However, effective regulation from Ofcom (including QoS targets) over the past regulatory period has resulted in substantial improvements in performance from BT. The goal over the upcoming regulatory period should be to ensure that there is no backsliding by BT, with incremental improvements to ensure further consumer gains to match consumers increasing quality expectations as they become more reliant on leased lines.

6.4 There are a large number of areas in which Ofcom's QoS regulation is appropriate:

- we welcome the introduction of tail reporting (§15.14), although we are sceptical that it will lead to meaningful improvements in performance in the absence of associated SLAs and SLGs.
- Ofcom is correct to apply QoS standards to Ethernet services with speeds above 1Gbps. These services are now to be made subject to charge controls, and as Ofcom correctly points out at §15.105, there have been historic problems with quality of service on Ethernet. Ofcom is therefore correct to ensure that BT does not reduce quality on these products. Ofcom is also correct to put in place KPIs on these products to increase its ability to monitor performance (§15.108).
- Ofcom is correct to apply QoS standards to dark fibre products from April 2020 onwards (§15.110). While in the first year after launch will effectively be in a testing phase, by the second year of the control period DFA should be moving towards becoming a more mature product. In the absence of QoS regulation BT is likely to

have significant incentives to lower quality in order to prevent take-up of DFA. Importantly degrading DFA quality will not be deterred by equivalence obligations since Ofcom has chosen (unlike all other major products) not to impose a requirement on BT to use DFA itself (a 'must-use' obligation). QoS obligations will also be important in providing the market with confidence to use the product.

- Ofcom is correct to monitor compliance with QoS standards on an annual basis (§15.114) and on a national basis (§15.115). These approaches balance the need adequately to monitor performance with the goal of ensuring proportionate monitoring costs for both Ofcom and BT.

6.5 The remainder of this section sets out the two significant areas in which TalkTalk disagrees with Ofcom's proposals.

6.1 Ofcom should maintain SLG obligations until agreement is reached on an alternative

6.6 Currently, many of the SLA/SLG obligations for Ethernet are contained within the 2008 SLG Direction. Ofcom is proposing transposing most of these obligations into the reference offer (§15.142). We agree that it is acceptable to move the location of obligations in this way.

6.7 However, in this process Ofcom is proposing to drop certain key obligations (BT would no longer require consent to set a CDD of greater than 57 days, would no longer be required to pay compensation for failing to meet the CDD, and would no longer be required to pay compensation for failure to repair lines within 5 hours) (§15.146).

6.8 [✂] (as Ofcom itself acknowledges at §15.152). We also therefore do not agree that it is appropriate for Ofcom not to specify SLAs and SLGs in as much detail as previously (§5.143).

6.9 As such, Ofcom should instead set out that its current SLG regulation will apply until [✂] The current regime will therefore act as a backstop to ensure that there is no regulatory lacuna.

6.10 This approach will also significantly reduce the prospect that [✂]. Allowing the current regime to act as a backstop pending agreement should ensure that there is mutual benefit in the arrangements.

6.2 QoS obligations in HNR areas

6.11 TalkTalk considers that QoS obligations are an essential element of effectively controlling BT's SMP in Ethernet markets. In the absence of QoS obligations, BT is likely to have both the incentives and ability to significantly reduce the quality of service which it provides, to the detriment of its customers and end-users.

6.12 Ofcom has found that BT holds significant market power in HNR (excluding the CLA). However, despite this, Ofcom currently proposes (Table 1.1) not to impose QoS standards in these areas.

6.13 This approach is wrong. Ofcom should impose QoS obligations in HNR areas, in the same way as in areas which Ofcom counts as having fewer competitors, for several reasons:

- Ofcom has not provided any evidence that such areas are currently effectively competitive. Indeed, as it sets out at §§10.9-10.10, '*In areas where BT faces competition from two or more rivals, we think there is a good chance that effective competition will emerge over time*... *However, even in these more competitive areas, greater competition is unlikely to fully emerge over the course of this two-year review*'. As such, there is currently ineffective competition, and will continue to be over the regulatory period.
- QoS regulation is less onerous than cost-based price regulation, and can still allow Ofcom to set prices in excess of costs if it believes it needs to do so in order to incentivise entry. Ofcom has not set out any evidence in its consultation that a relaxation of QoS obligations is necessary or sufficient to incentivise entry.
- With only two competitors in (part of) an area, there is significant scope for tacit collusion over quality standards, even if BT is not able to . While quality is very important to customers, many new entrants are likely to choose to match BT on quality, and then instead compete on price. As such, removing BT's QoS obligations in HNR areas may lead to a race to the bottom, as competing Ethernet providers seek to match BT's quality guarantees. This outcome would be detrimental to customers, and can only be overcome by Ofcom not deregulating until a market is sufficiently competitive that tacit collusion is not possible (taking into account judgements of the European Courts such as *Airtours* and *Sony/ BMG*).[105] With only three competitors in an area, BT's quality standards acting as a focal point, and substantial multi-market contact, there is likely to be very substantial transparency and considerable scope for punishment strategies to discipline firms to the collusive equilibrium. Ofcom does not appear to have considered this scope for tacit collusion when determining its QoS remedies.
- many end customers for business Ethernet products are national firms such as retailers. Such customers will place a high value on consistent quality being offered across all of their stores, and will seek contracts which provide for a consistent level of quality nationally. This will be difficult for providers such as TalkTalk to offer to customers if Openreach does not adhere to the same levels of quality standard in all parts of the country, harming consumers.

6.14 There is no material cost to consumers from setting QoS standards in HNR areas. Given that Ofcom currently proposes that there will be no price regulation in these areas, to the extent that adhering with QoS standards is costly, BT can simply pass these costs on to their customers. This will also allow for a price umbrella providing headroom for BT's competitors to pass on the cost of matching a high quality level to their customers.

6.15 This BCMR is set against a backdrop of a charge in some aspects of the way that Openreach provides services as encompassed in their 're-imagining Ethernet' proposals. We welcome many of these proposals which should bring Ethernet provision closer to the standards that consumers expect such as greater certainty of delivery date, more delivery time flexibility and reduced average delivery times. However, whilst Openreach's proposals are being discussed they are far from finalised. Therefore, prior to them being finalised and incorporated into contracts it would be inappropriate for Ofcom to presume that they will

[105] Respectively cases T-342/99 and C-413/06

happen. Therefore, Ofcom's regulations should reflect that the re-imagining proposals may be implemented but also that they may not be implemented.

6.3 QoS levels

6.16 The QoS levels proposed by Ofcom are largely appropriate. There are two areas, both of which involve the downgrading of the quality standards set in BCMR16, where Ofcom should reconsider.

6.3.1 *Upper percentile standard*

6.17 First, Ofcom has proposed moving the upper percentile standard sharply lower, from no more than 3% of orders taking over 118 working days in BCMR16, to 138 days in 2019/20 and 130 days in 2020/21. As such, Ofcom is not only delaying implementation of the standards in BCMR16, it is proposing that Ofcom will not even reach the 2018/19 standard by 2020/21.

6.18 Ofcom's justification for this move is weak. As it sets out in its consultation:

> *the proportion of orders requiring wayleaves and/or traffic management (key drivers of delay for tail orders) appears to be settling at a higher level than 2011 and is more comparable with 2012 and 2013, as shown in Figures 5.13 and 5.14, below. Types of delay differ in the extent to which they are within Openreach's control, and wayleaves and traffic management are examples where (depending on the precise circumstances) third party factors make some contribution to the delay…. Openreach can more effectively manage the process of obtaining wayleaves and arranging traffic management with the relevant councils and highway authorities.*[106]

6.19 We note that Ofcom has not presented evidence in its consultation document of the actual number of days within which Openreach completes at least 97% of orders. Rather, Figure 15.6 shows data which is not relevant to the precise setting of the standard, that just under 4% of orders take over 118 days. It is therefore possible, on the basis of the evidence presented by Ofcom in its consultation, that the standard proposed by Ofcom is below the standard which has been achieved by Openreach in the current year. Ofcom should present such data, so that stakeholders can comment on the proposed level of the QoS threshold, before reaching conclusions on this matter.

6.20 Furthermore, on the basis on the data set out at Figures 15.13 and 15.14, TalkTalk does not accept that the proportion of orders delayed by traffic management or wayleave issues is settling at levels above 2011. The proportion of delays due to both sources fell sharply during 2017, from around 10% to around 5% in the case of traffic management delays, and from around 8% to around 4% in the case of wayleaves. That is, in the last full year for which Ofcom had data, Openreach was able to approximately halve the proportion of delays due to both the categories which Ofcom has expressed concern about. There is evidence of continued falls, with the last month of data for wayleaves set out in Figure 15.14 being the lowest in over three years, and the last month of data for traffic management (Figure 15.13) being the second lowest since 2015. There is simply no evidence of flattening off in the data presented by Ofcom.

[106] Consultation, §§5.66-5.67

6.21 Moreover, even if there were any data to support Ofcom's position—and there is not—this is highly likely to be due to regulatory gaming. Openreach has the ability to influence its level of delays, including those due to traffic management and wayleaves, by improving or deteriorating the quality of its management process. If Openreach believes that it will be able to lower its regulatory quality standard by presenting data that shows that there has been a levelling off, then it will have strong incentives to do so. Ofcom has presented no evidence or analysis which would support a case that any levelling off there has been is due to factors other than Openreach's regulatory gaming.[107]

6.22 Finally, Ofcom's proposals will harm consumers. There can be significant harm to business customers who are unable to obtain a leased line for an extended period of time, and wider knock-on effects across the economy from these businesses operating less efficiently. Ofcom should require strong and supportive evidence before making such a change in QoS standards.

6.23 Ofcom's proposals on the upper percentile standard therefore create a strong risk of moral hazard. By underperforming over a period of just a few months, Openreach can earn itself lower quality standards in the long term, and therefore higher profits. This will create adverse incentives in the long term.

6.24 As such, there is no data supporting Ofcom's position that the upper percentile standard should be lowered, there is short term consumer harm from slower provision of some lines, and there are long-term moral hazard issues with the proposed regulatory approach. Ofcom should therefore choose an upper percentile standard of 118 days or lower in both years of the charge control period.

6.3.2 *Certainty standard*

6.25 Second, Ofcom has proposed to reduce the certainty standard in the first year of the charge control period, moving from a standard of 88% in the Temporary Conditions (§15.76) to a standard of 85% in the first year of the control period and 88% in the second year (§15.83).

6.26 This is a retrograde step. As Ofcom sets out (§15.77), Openreach is already achieving a performance of 85%, and has recently improved its performance against this standard. It is therefore unclear why Ofcom does not propose to set a higher standard for 2019/20, and Ofcom has provided no analysis of why a standard above 85% would be inappropriate. As Ofcom states:

> *We also expect Openreach to continue to improve its planning processes to enhance the accuracy of its delivery dates, with the aim of providing more certainty to customers. As set out above, we understand that Openreach has commenced further improvement initiatives with the aim of enhancing its performance against the current standards… so this suggests there is potential for further improvement relative to current performance.*

6.27 Ofcom should therefore require Openreach to meet a higher Certainty standard in 2019/20, above the current level of performance.

6.28 Furthermore, the proposal for an 88% Certainty performance in 2020/21 raises the same moral hazard issues as the proposal to lower the upper percentile standard. Once more,

[107] Although, of course, there has been no levelling off.

Openreach is able to gain long-term advantage from missing its quality targets. Ofcom should not create adverse incentives in this way.

6.3.3 *Other quality standards and KPIs*

6.29 TalkTalk generally supports the proposed quality thresholds for other standards, with some exceptions:

- we support Ofcom's proposal to set a stricter MTTP standard in this BCMR, moving from 40 days to 38 days. However, we think that Ofcom should go further and faster in this area, to avoid Openreach backsliding. As Openreach is already outperforming this level (§15.60), Ofcom should consider moving to 37 or 36 days in the review period, in order to incentivise further quality improvements;
- although we understand the reasoning underlying Ofcom's proposal to remove KPI (xv), concerning performance against the final CDD [✂]. Ofcom must ensure that the certainty of the initial CDD is improved considerably in order for removal of this KPI to be appropriate, and we are concerned that it is being removed before there is evidence that it has become obsolete;
- we do not support the removal of KPI (xvii) regarding the number of changes to contractual delivery dates, as we consider this to be a useful indicator of the workload which Openreach is imposing on its customers;
- we support the proposed level of 53 days for the mean initial CDD;
- we support the proposed repair standard of 94%;
- we support the proposal to include MBORC in the QoS standard metrics without an additional identified allowance;
- we support the proposal to exclude customer caused delays from QoS standards;
- we support the proposal for a tail orders reporting requirement for orders, although we consider that the threshold for submitting a report should be no more than 118 days, in line with the appropriate threshold for the upper percentile standard;
- we agree that there should be QoS standards imposed on dark fibre from April 2020 onwards, with no standards in the first year of DFA availability while the new product is being trialled in the market; and,
- we agree that the compliance period should be annual, reflecting relatively low ethernet volumes and the need to smooth short-term peaks and troughs.

7 Other remedies

7.1 In this section we discuss other aspects of Ofcom's consultation and proposals.

7.1 Other remedies

7.2 Ofcom has proposed to impose a 'fair and reasonable' charges obligation on Openreach access products which means that charges which are not charge controlled are solely

governed by this fair and reasonable obligation. Ofcom has guided that this means Openreach shall not margin squeeze (consistent with the margin squeeze test under ex post competition law) (§11.11). Whilst this might be adequate for products such as EAD rental charges which account for a large part of an end user charge, they are not useful in respect of ancillary charges which are not charged separately and instead make up a small part of the overall costs of a circuit (e.g. cablelink charges, multicast charges). For these Ofcom should provide further guidance. [✂] Ofcom should provide guidance on what it considers are fair and reasonable charges for ancillary type services.

7.3 We agree with Ofcom proposal that EOI should be imposed on Ethernet products – it is critical to ensuring high quality services and preventing discrimination.

7.4 One area where Openreach's Ethernet product portfolio could be improved is a stronger range of cost-based migration products between different bandwidths. Without these a wide basket (as Ofcom have proposed) allows Ofcom to exploit its dominance by altering rental prices but not allowing CPs to move easily between products. For example[✂]

7.5 Ofcom should impose an obligation on Openreach to provide efficient, reliable and cost reflective migrations between different EAD speeds. We consider that the price should be set at LRIC (with any common cost included in the products FAC being recovered elsewhere).

7.6 We have not commented on Ofcom's proposals regarding regulatory accounting given the limited time Ofcom made available for responding to this consultation. We will provide comments as soon as reasonably possible.

7.2 Lacuna

7.7 We are also concerned that the delays to Ofcom's consultation and the need to properly consider responses and (possibly) amend its approach will make it impossible for Ofcom to finalise its statement before April 2019 which will create a lacuna where all regulation falls away. Despite repeated requests Ofcom has provided no cogent explanation of how it would ensure that consumer interests will be protected during such a lacuna. Creating such uncertainty is unacceptable from a major regulator, and deters investment.