Promoting investment and competition in fibre networks

Approach to remedies consultation

TalkTalk submission

June 2019

NON-CONFIDENTIAL

1 Summary

1.1 This section summarises the key points of our response to Ofcom's proposed Access Review remedies, published on 29 March 2019.[1]

1.2 TalkTalk strongly supports Ofcom's objective to stimulate and accelerate investment in FTTP networks by both altnets and BT. FTTP is the only long-term solution to Britain's connectivity needs and will deliver transformative speed and reliability improvements to consumers and businesses.

1.3 Delivering nationwide FTTP is a shared industry challenge and TalkTalk intends to use its unique position in the market to help unlock the maximum amount of investment in two ways. Firstly, by bringing a new entrant, FibreNation, into the market to provide genuine infrastructure competition. Secondly, by working constructively with Openreach and altnet FTTP builders as one of the largest CPs to provide the volume commitments they need to accelerate their own investments. Subject to the right commercial and regulatory conditions, there is an opportunity for scale ISPs, such as TalkTalk, to help underwrite BT's investment. That requires BT to price FTTP services competitively and to construct a commercial model that makes it commercially viable – and attractive – for ISPs to migrate their customer bases. If such a model could be agreed, TalkTalk stands ready to play its full part in helping BT to accelerate their FTTP rollout. By underpinning investment by multiple networks, we will drive greater competition and ensure the maximum number of homes and businesses benefit from FTTP investment.

1.4 Ofcom's proposals, however, will undermine FTTP investment and damage the market in several ways:

- making it more difficult for altnets to enter the market and deliver the infrastructure competition Ofcom seeks;
- in turn, reducing BT's incentive to invest in FTTP as the competitive pressure on BT declines;
- providing BT with increased incentives to sweat its legacy copper assets;
- harming consumers through higher prices and capping improvements in service standards;
- eroding retail competition.

1.5 We are concerned by both Ofcom's proposals and the process through which they are being developed. In particular, Ofcom has not sought to conduct any modelling of the impact of its proposals, which means that it can have no confidence that these proposals will actually have the effects that Ofcom intents. We discuss the substance of the proposals first, before outlining our concerns that Ofcom's process falls short of both its own regulatory principles and its legal obligations.

1.6 Ofcom's proposed remedies differ in the three geographic areas Ofcom have designed (categories 1, 2 and 3). We discuss below first the broadband remedies (e.g. MPF, GEA-

[1] Ofcom (2019), *Promoting competition and investment in fibre networks: Initial proposals – approach to remedies*, 29 March

FTTC) for each category (starting with category 2) and then remedies for leased lines (e.g. Ethernet/DFA).

1.7 **Category 2** areas are those areas of the UK (totalling 70% of premises) where BT currently holds SMP but already faces competition from an altnet, or where Ofcom speculates that altnets *might* build FTTP in the next ten or more years. These are predominantly, but not exclusively, urban areas, which are more commercially attractive to network builders.

1.8 Ofcom's well-established regulatory approach has sought to set Openreach's wholesale prices at cost, and gradually increase the quality of service standards Openreach has to meet. This has ensured vibrant retail competition, ensuring consumers benefit from choice, low prices and improving service standards.

1.9 Ofcom is now proposing a radical departure from this well-established approach. From April 2021, Ofcom is proposing:

- increased prices, with price caps rising in line with CPI on the only two products Ofcom is proposing to regulate, MPF (copper broadband) and FTTC 40/10 (the lowest speed 'superfast broadband' product). This change of policy means consumers will pay about £1bn[2] more than they would have done if Ofcom had continued to align prices with cost;
- no price cap on higher speed products even though MPF and FTTC 40/10 will become increasingly less used and a weaker constraint on FTTP;
- no improvement in Quality of Service obligations from the 2018 level.

1.10 This will harm consumers compared to the current regulatory approach, let alone to an optimal regulatory approach.

1.11 In the short term Ofcom's proposals will mean that consumers will suffer higher retail prices and weaker competition yet will, in most areas, have no additional competition as an alternative to BT. A key weakness with Ofcom's approach is that in many areas prices will rise above cost years before any altnet investment is likely. This will leave consumers paying higher prices without the ability to move to a rival network.

1.12 There will be, in the longer term in many areas, less FTTP investment due to three factors arising from Ofcom's proposals:

- altnet investment is only viable if new networks can achieve high take-up in the early years of deployment. That will generally require non-BT ISPs to have scale customer bases that can be migrated in bulk to the new network (such as TalkTalk or Sky choosing to migrate their entire customer base onto a new network where it is built). Without a scale customer base that can be migrated in bulk, take-up may occur too slowly for the network provider to make a viable return on investment. By weakening retail competition and shrinking the market share of non-BT ISPs, Ofcom will therefore make it harder for any altnet to achieve the take-up required to be viable. This decreases the incentives for altnets to invest in FTTP;

[2] Over the regulatory period. This estimate excludes the indirect impact of above cost MPF/FTTC 40/10 prices on FTTP, G.fast and FTTC 80/20 prices.

- by setting a price cap, rather than a price floor, Ofcom's proposals allow BT to set predatory prices to deter competition. This increases risk and so will also deter investors;
- increasing FTTC prices will narrow the gap between FTTC and FTTP prices, making FTTP investment less attractive and so encouraging BT to sweat its copper assets.

1.13 The critical flaw in Ofcom's approach is that it fails to tailor regulation to the different competitive conditions found around the country. Ofcom is proposing the same regulation in 'prospectively competitive' areas irrespective of whether:

- BT faces no competition or whether competition is already established;
- additional competition has not yet emerged, or whether there has been recent entry.

1.14 Ofcom's proposed regulation simply does not reflect the wide variation in market dynamics that will exist in future and so will inevitably lead to ineffective and harmful regulation, and prolong the need for regulation in those areas where commercial altnet roll-out has been discouraged.

1.15 This concern of needing to ensure regulation is properly tailored is not unique to TalkTalk; it is shared by a range of altnet FTTP investors and ISPs. For example:

> "*Ofcom's current proposals pre-emptively relax regulation, by removing any the obligation on Openreach to set cost-reflective prices in most of the UK (Category 2 areas). This will directly harm consumers by allowing higher prices than if the current regulatory approach were to continue. This can only be justified if Ofcom can demonstrate that the higher prices will lead to sufficient increases in investment to offset the costs of those higher prices. Ofcom has not presented evidence to suggest this will be case" [UKCTA response to remedies consultation, June 2019, at* §7]
>
> *"we support the removal of regulation where there is effective and sustainable network competition" [Sky response geographic market consultation, Feb 2019]*

1.16 Therefore, in designing its remedies Ofcom must reflect that competitive conditions today vary across the UK and are also changing in an uncertain and unpredictable manner. Ofcom's static approach to regulation cannot be effective.

1.17 There are workable alternatives, that would unlock greater FTTP investment and protect consumers from unnecessary price rises and weakened competition, while also being more consistent with the regulatory approach which Ofcom has adopted to date. One option is to tailor regulation to changing competitive conditions through an approach we refer to as 'adaptive regulation'. Rather than weakening regulation years in advance of investment Ofcom thinks *might* happen, adaptive regulation would weaken regulation only when altnet investment *actually* happens, based on a trigger. Prior to this trigger being met, prices would be regulated via a price cap set at Openreach's costs; after the trigger a price floor would apply based the costs of an efficient FTTP entrant (known as REO costs). Consequently, unlike under Ofcom's proposals, the regulatory approach would be consistent with today's approach and only be amended if there is meaningful a change in market conditions.

1.18 An adaptive regulation approach would have significant advantages over Ofcom's static regulation approach where regulation is weakened in category 2 areas from the outset:

- there will be more altnet FTTP investment and it will happen sooner:

- the proportion of the market accounted for by non-BT ISPs (and thus available for volume migrations onto new networks) will be higher, making altnet entry more viable;
- investors will enjoy greater certainty that there will not be predatory pricing; and,
- the higher prices pre-entry (versus Ofcom's approach) will not deter altnet investment since prices pre-entry cannot affect investment returns.

- there will be greater incentives on BT to invest in FTTP: the return BT can make from FTTP relative to FTTC will be higher, incentivising BT to invest in new FTTP; and more widespread altnet entry will provide greater competitive pressure on BT to increase the scale and pace of its own rollout;
- consumer prices will be lower and competition stronger in both the short term and the long term.

Adaptive regulation is also far more robust to unanticipated market changes such as DPA not working effectively, or less (or more) altnet FTTP roll-out than expected.

1.19 Importantly, Ofcom has the legal powers to impose this model of adaptive regulation. Our response explains how adaptive regulation might be designed to be most effective and provide stakeholders with certainty. We request that Ofcom properly considers adaptive regulation as an option when it consults on its full set of Access Review proposals later in the year, including identifying to stakeholders any concerns Ofcom might have adopting this approach.

1.20 **Category 3** areas are those, typically more rural, areas which Ofcom refers to as 'non-competitive'. However, in practice because of the way in which Ofcom has chosen to define the categories there is some altnet FTTP Investment already existing and more planned in these areas (by operators such as Gigaclear and B4RN).

1.21 Whilst we sympathise with Ofcom's desire to ensure consumers and businesses in these areas benefit from FTTP investment, it is crucial that any policy to subsidise rollout that is otherwise unviable is fair to consumers, including older customers and the less affluent.

1.22 Ofcom's proposed regulation in this category is what it calls a RAB approach. This would see wholesale MPF and FTTC prices rise for consumers in Category 3 areas, in order to cross-subsidise the losses Ofcom expects BT to make on FTTP investment in these areas. Whilst this may increase BT's FTTP investments in these areas it has a number of detrimental impacts on consumers which will outweigh any benefits:

- in practice, due to capacity constraints any additional FTTP investment in category 3 areas stimulated by the cross-subsidy will 'crowd out' investment in other parts of the UK. Therefore, the total number of premises passed by FTTP across the UK will likely be lower than without the RAB approach;
- the cross-subsidy will distort investment and competition by deterring future altnet FTTP investment. Some altnets, such as Gigaclear, have built successful business models around investing in areas that Ofcom now deems 'non-competitive'. Ofcom's proposals would make those businesses unviable, as they would not be able to profitably compete with subsidised BT FTTP. That would not only curtail viable

investment, but would also undermine market confidence in Ofcom and reduce competition in rural areas.

- it will raise retail prices and weaken competition, inconsistent with two of Ofcom's stated objectives.
- Ofcom's approach will particularly penalise vulnerable and rural customers who take legacy products. Such consumers are disproportionately older, poorer and have had to wait the longest to benefit from earlier rounds of investment, such as FTTC. Ofcom's proposals would further penalise these customers, by forcing them to subsidise the FTTP prices for typically wealthier customers.
- the model is highly susceptible to gaming by Openreach to inflate its profits to the detriment of consumers, by means such as Openreach manipulating cost allocations or exaggerating cost forecasts to increase the cross-subsidy.

1.23 Though it would be harmful to set up a RAB type subsidy scheme in 2021, it may be appropriate to have some form of subsidy mechanism in future as the problems associated with the scheme will naturally diminish over time. In the medium term, capacity constraints will lift; the areas where altnets and BT intend to build will become clearer; and costs and revenue will be better understood and more predictable making the process less susceptible to gaming.

1.24 In this review period the appropriate regulatory approach for category 3 would be to apply the same adaptive regulation approach as we suggest in category 2. This would mean that prices in category 3 areas would be set at Openreach FAC costs (excluding HON) but would increase to an REO level if and when altnet FTTP investment occurs. This will have the benefit of incentivising both BT and altnet FTTP investment and reduce consumer prices and ensure effective competition. Applying the same approach across category 2 and category 3 areas will result in simpler regulation and will also avoid the risk of Ofcom's regulatory decisions distorting competition.

1.25 We understand, based on conversations with BT, that BT considers a greater proportion of the country to be commercially viable than Ofcom estimates. Clearly this has the capacity to reduce the amount of subsidy required. It is crucial Ofcom considers BT's alternative modelling, as well as evidence from Gigaclear and other providers active in Category 3 areas, that could ensure a greater proportion of the country is reached on a commercial basis without requiring cross-subsidy.

1.26 Ofcom has described **category 1** areas as those where there are two competitive networks and BT does not have SMP. We are yet to see Ofcom's approach to assessing SMP. However, given Ofcom's approach to assessing whether a network is present, we suspect that in some of these category 1 areas BT will in practice retain SMP due to the patchy extent of competition allowing BT to profitably prices in at least the less competitive areas. Therefore, we consider that at least a uniform pricing obligation may be necessary in these areas.

1.27 For **leased lines** (e.g. Ethernet and DFA) Ofcom's proposals mirror those for broadband products – weak regulation in category 2 areas from the outset (no DFA, and a CPI+0% cap on Ethernet products) and stronger regulation in category 3 areas (DFA at cost). Ofcom's approach fails to take any account of the significant differences between leased line and broadband markets which necessitate different regulation. In particular:

- there is much less benefit to leased line customers from additional full fibre networks, since there are already on average about two existing full fibre networks for leased lines (unlike broadband where is very little FTTP competition to BT);
- an additional FTTP network will impose a far weaker constraint on leased lines than on broadband services due to the nature of the market, customer inertia, the need for operators to have an extensive track record, and network design differences.

1.28 Given these differences, consumers' interests will be best served by imposing DFA (at cost) in category 2 areas. This will allow significant competition in the innovation-rich active layer for many customers. In contrast, Ofcom's approach of promoting network competition by not requiring DFA will only create additional investment and competition for a few customers and will come at a significant cost for other customers. This approach will effectively be the same as in category 3 areas allowing a single unified approach to regulation across the UK which will simplify regulation.

1.29 **Quality obligations**: Ofcom has proposed that there should be no increases in BT's quality obligations in the review period, but has not provided any analysis of the costs and benefits of increasing quality. Ofcom should conduct such analysis before deciding whether to increase quality standards, rather than relying on assertion alone.

1.30 **Copper switch off**: when determining its policy towards copper switch off, Ofcom should take account of the costs of migrating customers to a new FTTP network, and that many customers may not want to migrate in this way. Ofcom should therefore consider whether it would be appropriate to set a zero charge for migrations from MPF and FTTC to FTTP when copper is being withdrawn, with the costs of migrations recovered through FTTP rental charges.

1.1 Ofcom's process:

1.31 In addition to concerns about the substance of Ofcom's proposals, we also strongly disagree with **the process Ofcom is following**. We do not believe it is consistent with Ofcom's own regulatory principles and its legal obligations, and shows evidence of prejudice.

1.32 Ofcom's approach to developing its proposals has lacked the rigour and evidence that has typically defined its work. Ofcom's own regulatory principles are to be "*evidence-based*" in deliberation and outcome and to "*assess the impact of regulatory action*". There are good reasons for this – the most effective regulation can best be identified by keeping an open mind, considering a range of options and using evidence to compare impacts to ascertain the one option that best serves consumers' interests.

1.33 Instead, Ofcom has proposed a radical change in regulation from its well-established approach, considered no other options which might have been more consistent with current regulation, and has conducted no meaningful assessment of impacts. It is perhaps not surprising therefore that, on proper inspection, Ofcom's approach is harmful to consumers.

1.34 It appears from discussions with Ofcom that it is reluctant to consider alternative models that may better deliver its stated objectives. We would urge Ofcom to reconsider this approach and fully consult on other models, including adaptive regulation. If Ofcom has

conducted modelling and evidence gathering to inform its proposed approach that has not been published as part of this consultation, we would also urge Ofcom to publish it at the earliest opportunity and certainly well before a full consultation on the whole market review process. If respondents cannot see Ofcom's evidence, it is very difficult for them to offer meaningful comment on Ofcom's proposals.

1.35 FTTP infrastructure is a long-term investment, with pay back periods spanning multiple market reviews. Investors need to have confidence that regulation is stable, predictable and grounded in objective evidence. Investors will be justifiably concerned that Ofcom is embarking on a radical change of regulatory strategy, apparently without supporting evidence or proper consultation. Investors will question how they can have certainty that Ofcom will not perform similar pivots at the next market review, particularly given that changes to the senior leadership of Ofcom (and Government) are imminent. This uncertainty risks reducing FTTP investment by all firms.

1.36 Ofcom's capricious approach also leaves it exposed to successful appeals, which will exacerbate the uncertainty and further reduce investment incentives.

1.37 Our response is structured as follows:

- section 2 describes our concerns with the process which Ofcom has adopted, and proposed to adopt, in the current review;
- in section 3 we discuss the objectives Ofcom has set itself for the Access Review, and their appropriateness;
- in section 4 we highlight the remedies we think are likely to be necessary in category 1 areas, the areas where BT faces the strongest competition from other operators;
- in sections 5 and 6 we discuss Ofcom's proposals for regulation of MPF and FTTC in category 2 areas – section 5 provides TalkTalk's analysis of Ofcom's proposal and section 6 describes TalkTalk's adaptive regulation proposal;
- section 7 covers Ofcom proposals for MPF/FTTC regulation in category 3 areas and TalkTalk's suggested alternative in these areas;
- section 8 considers Ofcom's proposals for regulation of Ethernet and DFA products in category 2 and category 3 areas and TalkTalk's proposals for these products;
- section 9 covers Ofcom's proposals for quality of service regulation; and, finally,
- section 10 deals with Ofcom's proposals for regulation related to copper switch off.

2 Ofcom's approach to developing its proposals

2.1 TalkTalk considers that there are significant shortcomings in the approach Ofcom has used to develop its proposed remedies.

2.2 Ofcom has presented proposals for remedies without any meaningful or evidence-based consideration of its impacts or alternatives. Such an approach is prejudiced and closed to the various remedy options which it could pursue in order to further its objectives. As we describe below, such an approach is unlawful, inconsistent with Ofcom's own principles, erodes investor confidence and ultimately will lead to poor outcomes for consumers.

2.3 The most reliable way for regulators to identify appropriate regulation is for them to consider a range of options, comparing their impacts to ascertain the one that is most in consumers' interests. The evidence it uses to reach its conclusion should include submissions on these various options made by industry stakeholders, who are likely to be able to bring practical experience of the market which Ofcom lacks.

2.4 An open-minded and evidence-based assessment of options is key to promoting industry confidence and certainty since it engenders regulatory predictability. Confidence and certainty for investors is fostered by maintaining consistent policies and principles over time and only changing them after evidence-based consultation. Ofcom's proposals depart from this concept since they deviate, without justification or assessment of the likely impact, from its well-established policy of setting cost-based price caps.

2.5 Considering and assessing a range of options is particularly important in cases such as the current one, where Ofcom is proposing radical changes to the structure of regulation in the UK, alongside a longer market review period and, separately, a possible loss of valuable scrutiny by the EU.

2.6 There is no need for Ofcom to adopt such a cursory approach since it has and has had a long period of time and ample resources to conduct this review in a robust manner[3].

2.7 Adopting such an approach is inconsistent with Ofcom's own regulatory principles;- for example Ofcom should: "*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*" [4].

2.8 Ofcom has a public law duty to consult prior to reaching a decision and to do so in accordance with the Gunning principles which require an open mind. The principles are the following:

- consultation must take place when the proposal is still at a formative stage;

[3] We understand that Ofcom started work on the Access Review in early 2018 some three years before the regulation would come into force. Indeed the BCMR (consultation published 2 November 2018) was shaped by the Access Review e.g. §1.4 "*… we have included elements [in the BCMR] to ensure consistency with our longer-term direction*"

[4] For example, Statutory Duties and Regulatory Principles (https://webarchive.nationalarchives.gov.uk/20150106104457/http://www.ofcom.org.uk/about/what-is-ofcom/statutory-duties-and-regulatory-principles/); Enforcement statement, 26 October 2016

- 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.[5]

2.9 Ofcom also has a statutory duty to carry out an impact assessment under section 7 of the Communications Act 2003.

2.10 Below we highlight two particular failings, both of which TalkTalk has raised in previous submissions to Ofcom – particularly the response to Ofcom's geographic market analysis proposals (Jan 2019) and a submission on proper market analysis (April 2019)[6].

2.1 Flawed and prejudiced market analysis

2.11 Proper market analysis is a critical step to identify if, and where, market power exists and so ensure that remedies are imposed on the right products and geographic areas and are appropriate to the competitive conditions in various markets. Proper analysis also provides certainty and confidence to stakeholders and investors through policy consistency and by reducing the risk of disruptive successful appeals.

2.12 Further, Ofcom is legally required to conduct a proper economic analysis.

- The Communications Act 2003 requires that Ofcom pays regard to EC recommendations. For example, s79(2) states: "*In identifying or analysing any services market for the purposes of this Chapter, OFCOM must take due account of all applicable guidelines and recommendations which— (a) have been issued or made by the European Commission in pursuance of the provisions of a Community instrument; and (b) relate to market identification and analysis*." [emphasis added]
- There are a number of relevant guidelines which outline the required objective and evidence-based approach to market definition, including:
  - Communication from the Commission: Guidelines on market analysis and the assessment of significant market power under the EU regulatory framework for electronic communications networks and services (2018/C 159/01): "*Under the Framework, the definition of relevant markets and the assessment of significant market power should be based on the same methodologies as under EU competition law … When NRAs consistently apply established methodologies to define markets and assess significant market power, they contribute to ensuring regulatory predictability and limit regulatory intervention to cases of market failures identified by analytical tools. … When examining similar issues in similar circumstances and with the same overall objectives in mind, NRAs and competition authorities, should, in principle, reach similar conclusions.*" (§§9-10)
  - Commission Notice on the definition of relevant market for the purposes of Community competition law (97/C 372/03): "*Market definition is a tool to*

[5] [2008] CAT 22, *Vodafone v Ofcom*, at paragraph 94.

[6] See: TalkTalk submission on geographic market analysis (February 2019); and, TalkTalk submission on market analysis process (April 2019)

identify and define the boundaries of competition between firms … The main purpose of market definition is to identify in a systematic way the competitive constraints that the undertakings involved face."

2.13 However, in this market review Ofcom has omitted essential elements of the market analysis and incorrectly conducted other elements. We highlight the main deficiencies below.

2.14 First, Ofcom appears to have adjusted its decision on geographic market definition to support its desired remedy outcome. This is wrong. This stage of the market definition process is an objective exercise with no place for Ofcom's policy aims[7]. Furthermore, Ofcom has not so far conducted any type of SMP assessment, rather appearing to presume that it will find BT to hold SMP in certain markets and not in others.

2.15 Second, Ofcom has not conducted anything close to a proper product market definition, instead presuming a particular product market definition designed to support its desired remedy outcome[8]. Given the lack of a proper product market definition we consider that it is premature for Ofcom to formally 'propose' remedies – instead, at this stage, Ofcom can (and should) consider and analyse the merits and impacts of different types of remedies, which it can then apply and adapt to the market definitions which it finds to hold in due course.

2.16 Third, Ofcom's geographic market categorisation is unsound and ultimately unlawful. Ofcom has chosen to assign areas of the UK into three categories based on whether those areas meet certain arbitrary broad criteria such as whether, in Ofcom's view, an area is 'potentially competitive'. This is an incorrect approach. Instead, Ofcom is required to group areas into categories that are "*sufficiently homogeneous*". Ofcom's approach results in categories that have highly heterogeneous competitive conditions – for example, the so-called 'potentially competitive' category includes areas that have BT and two rival operators today as well as areas where there is only BT today and an additional network is not likely for more than 10 years[9].

2.17 This mistake will result in both under- and over-regulation since Ofcom proposes applying the same remedies in each category despite there being very different competitive conditions within each category. Such error is harmful, unnecessary and avoidable.

---

[7] It may be appropriate to reflect Ofcom's policy aims (such as accelerating FTTP roll-out) at the remedies stage when considering trade-offs between competing objectives, but the pros and cons of different remedy options must be objectively assessed.

[8] Ofcom's product market definition should be conducted on the following basis: use the hypothetical monopolist test; start from a narrow focal product; assess substitution using competitive price levels (thereby avoiding the cellophane fallacy); and, objectively consider whether product markets are asymmetric.

[9] The size of category 2 implies that Ofcom expects altnet FTTP build of 21m (i.e. 70% of UK premises). Ofcom is not clear (in either its geographic market consultation or remedies consultation) as to the timeframe over which it expects this level of altnet FTTP build and it has provided no forecast of altnet FTTP build. However, given current altnet FTTP level (<0.5m homes passed in total), current build rate (less than 0.5m homes passed per year) and likely future build rate (possibly, we estimate, up to 2m homes passed per year in peak years this implies that 21m homes will not be passed by altnets until the early 2030s even with an optimistic assumption for altnet FTTP build. Thus, it follows that there are parts of the category 2 where there will be no altnet FTTP build for more than 10 years.

2.2 Inadequate assessment of remedies

2.18 If Ofcom decides to diverge from its existing and well-established regulatory approach it must ensure that any future regulation serves consumer interests by objectively assessing the impact of alternatives. In particular, it should develop several options (including the status quo form of regulation) and then objectively and with evidence assess the costs and benefits of each to identify which is likely to deliver the best consumer outcomes. The options should reflect the particular context – for instance, in this case, the desire to accelerate FTTP investment and that competitive conditions are likely to quickly change but in an unpredictable way (e.g. location and timing).

2.19 Ofcom has done none of this. Instead it has considered only one regulatory option in each area (e.g. wholesale prices significantly above cost in category 2 areas) and its assessment of this single option is very limited, mostly partial and unsupported assertion rather than evidence-based conclusions. In particular, Ofcom has ignored the many adverse impacts of its proposals. Ofcom has not even conducted basic analysis of, amongst other things:

- what incremental altnet FTTP investment (if any) the option may stimulate;
- the mechanisms by which pre-entry prices and post-entry prices affect altnet investment incentives;
- the impact of the remedy option on BT's FTTP investment incentives;
- whether, and by how much, consumer prices will increase;
- whether leased line consumer interests are better served through competition based on DFA or network-based competition using DPA;
- distributional effects resulting from the cross-subsidy under the RAB approach;
- whether the benefits of its proposals outweigh their costs.

2.20 Not only does Ofcom's flawed approach lead to remedies that will harm consumers (as we describe in the rest of this submission), but it is also the antithesis of evidence-based policy making, and so will reduce the certainty for investors to be confident.

3 Ofcom's objectives for the Access Review

3.1 Before considering the details of Ofcom's proposed remedies, it is important to consider the objectives that Ofcom is attempting to pursue in the Access Review, and what the remedies are therefore designed to facilitate. It is in light of the objectives of the Access Review that its remedies must be assessed. Ofcom sets out at §2.3 of its document that it will have regard to four objectives when designing its remedies for category 2 areas:

- ensuring BT's competitors have appropriate conditions to support their FTTP[10] investments;
- ensuring BT has appropriate conditions to invest in FTTP;

[10] Ofcom is not explicit in §2.3 of its consultation that it is referring to FTTP investment but we consider that it is obvious from the rest of its document that this is what is intended.

- protecting consumers against excessive prices and poor quality; and,
- maintaining retail competition based on access to the Openreach network.

3.2 In setting out its objectives Ofcom must not lose sight of its principal duty "*to further the interests of consumers in relevant markets, where appropriate by promoting competition*". In this case, all of Ofcom's four objectives are consistent with this ultimate duty.

3.3 Importantly, Ofcom does not set out a hierarchy of which of these objectives it will give most regard to. It also does not acknowledge that there can be trade-offs between each of these objectives, and that certain regulatory approaches can serve one objective but harm another objective. Ofcom should set out how it will weight objectives when there are conflicts between them.

3.4 Notwithstanding this, TalkTalk agrees that these are appropriate objectives for Ofcom to pursue in the Access Review in category 2 areas for broadband products since, in particular, we agree that it is appropriate to accelerate FTTP investment by altnets and BT. Consumers will benefit from the provision of additional competing networks against BT, particularly where these are FTTP networks.[11] There will also be a benefit from BT investment in FTTP—although less benefit than from altnet FTTP investment since BT investment does not result in additional competition.[12] Consumers will directly benefit from lower prices and improved quality, and retail competition will lower retail margins, reducing consumer prices, and provide a greater range of services tailored to consumers' needs. Accordingly, we assess Ofcom's proposed remedies and TalkTalk's suggested remedies against these objectives.

3.5 In category 3 areas, Ofcom uses the same objectives other than the objective to promote altnet FTTP investment, which is not pursued. We disagree with excluding the objective to promote altnet investment since altnet investment is already viable to some degree in category 3 areas, although it is as yet unclear in how much of category 3 it is viable, and future innovation may expand the proportion of category 3 in which it is viable.

3.6 We think that these objectives are inappropriate when considering leased lines for business customers. Most obviously, the objective of encouraging BT FTTP investment is misplaced, since BT already have a nationwide fibre network serving businesses, which will not be improved by BT rolling out FTTP.

3.7 Because there are greater benefits from altnet FTTP investment than from BT FTTP investment, Ofcom should explicitly prioritise remedies which will increase altnet FTTP investment even if that comes at the cost of reducing BT's FTTP investment. This approach will maximise consumer welfare and the benefits to UK businesses from FTTP rollout. Ofcom should set out in any future remedies document that this is its approach.

3.8 Ofcom should explicitly recognise that investment by both altnets and BT will be promoted by reducing risk. This points to two subsidiary objectives that Ofcom should have:

[11] The benefits from other types of legacy networks, such as DOCSIS-based networks, are likely to be appreciably lower.

[12] There are two benefits from altnet FTTP investment—an improved quality network and increased competition between broadband networks. BT FTTP investment yields higher quality but does not increase competition, and indeed may foreclose potential entrants.

- reducing regulatory risk arising due to unpredictable regulation; and,
- reducing the risk of predatory behaviour by BT, which aims to deter altnet investment.

3.9 It is also notable that Ofcom does not have the encouragement of innovation in its list of objectives. This may be important, since it is as yet unclear what the best approach will be to improving fixed line connectivity; for example, there may be substantial parts of the country where fixed wireless access will in the end be preferable to self-build of duct/pole networks or DPA as a method for last mile connectivity. By definition, innovation is unpredictable, but in such a dynamic environment as FTTP roll-out, Ofcom should be attempting to support it as best it can. However, Ofcom could reasonably make innovation a subsidiary objective to the others, and particularly to the encouragement of altnet FTTP roll-out.

4 Category 1 areas[13] – proposed remedies

4.1 Ofcom does not consider remedies in category 1 areas in its consultation paper, presumably since it defines these areas those where BT does not hold SMP. It would be useful for Ofcom to clearly set this out in its paper.

4.2 In its December 2018 geographic market consultation, Ofcom described category 1 postcode sectors as follows (§2.17):

> *In areas where at least two existing networks are present in addition to BT, supplying ultrafast broadband and leased lines services, we would carry out further analysis, for example by looking at market share data, to determine whether these alternative networks provide sufficient competition to ensure that Openreach does not have SMP. Where this is the case, no regulation of Openreach would be imposed*

4.3 As TalkTalk pointed out in its response to the geographic markets consultation, Ofcom appears to have misunderstood what it means for BT not to hold SMP (see section 5.1 of that response). In order not to hold SMP, BT needs to be unable to act independently of its

[13] ***Note regarding terminology***

Throughout this document we refer to the geographic areas as category 1, category 2 and category 3 rather than the labels Ofcom has used of 'competitive', 'potentially competitive' and 'non-competitive'. This is because the Ofcom labels are misleading and confusing. For example:

• Parts of category 1 are almost certainly not competitive and BT holds, and will continue to hold, SMP in them

• Parts of category 2 will unlikely ever be 'competitive' since BT is likely to hold SMP in them for the foreseeable future

• Parts of category 3 already have some competition in them and altnet investment continues in these areas

Similarly, when referring to the relevant geographic unit for Ofcom's analysis, we refer in this document to a 'postcode sector' in line with Ofcom's proposal in its December 2018 consultation paper on geographic markets. This should not be taken to mean that TalkTalk considers this to be the appropriate geographic market; all of our comments in our 8 March submission about the lack of granularity of this geographic unit continue to pertain.

competitors and of its customers. In a practical sense, this can generally be taken to mean that it would be unable to profitably increase its price to some defined group of customers by more than 10% above the competitive level on a sustained basis.[14] Whether BT holds SMP is unlikely to be able to be determined solely by reference to market share data, and it is unclear what '*further analysis*' Ofcom would do in order to ascertain that BT was unable to act independently of its competitors and customers.

4.4 Notwithstanding this opacity by Ofcom we think that in practice – given Ofcom's 65% threshold for counting a network as 'present' – BT is likely to hold SMP in most parts of category 1. This is for two reasons:

- First, given the partial coverage of competitors it may be profitable to impose a SSNIP across a whole postcode sector[15].
- Second, even if it is not profitable to raise prices across a whole postcode sector then BT may raise prices (or reduce quality) in particular pockets of a sector where there is less competition, as no uniform price obligation is being proposed, providing BT with the ability to price discriminate in this way.

4.5 The potential for SMP described above arises since Ofcom counts a network as 'present' in a postcode sector if it covers 65% of that postcode sector. This means that there can be large parts of a postcode sector assigned to category 1 where there are fewer than two competitors.

4.6 In the broadband sector, it is unlikely that altnet FTTP operators will cover all premises in a geographic area, particularly if those geographic areas are large, as proposed by Ofcom in its geographic markets consultation where it proposes to use postcode sectors as its geographic units. This means that, for any coverage threshold set at less than 100%, BT will potentially continue to hold SMP over at least some premises in a postcode sector, even when two operators meet the coverage threshold.[16].

4.7 BT will therefore generally have the ability and incentives to engage in geographic price discrimination in order to exploit customers who do not have the option of an alternative provider (or only have one alternative). For example, as a basis of discrimination, BT could adopt differential charging by cabinet, based on the proportion of premises served by that street cabinet covered by altnet build. It could also harm customers and consumers by engaging in quality discrimination, fixing faults more quickly in some areas than in others by

[14] If it could do so, then this customer group would form a separate market, in which BT would be dominant due to the inability of its rivals to constrain it to competitive behaviour. Such a price rise is often referred to as a SSNIP – small but sustained non-transitory increase in price.

[15] Given that BT can price differently across postcode sectors in category 1 this would be effectively a form of price discrimination within category 1.

[16] This is also irrespective of the market share BT holds within the postcode sector. For example, consider a situation where one altnet covers 75% of premises within a postcode sector, and another altnet covers 90% of premises in that postcode sector. All the premises covered by the 75% operator fall within the footprint of the 90% network. In this case, BT will continue to hold a full monopoly over 10% of the premises in the postcode sector, and there will be a duopoly—and therefore ineffective competition—in a further 15% of the postcode sector. BT will therefore continue to hold SMP in that postcode sector, which it could exploit by engaging in price discrimination to the detriment of monopolised customers.

prioritising them in its work stack, knowing that in monopoly areas customers could not leave BT for another network.

4.8 In order for Ofcom to be able to find no operator holds SMP and so impose no remedies within a postcode sector, even if there are two other altnet networks present, it will need to conduct an appropriate assessment of the extent of competitive constraints on BT in that postcode sector. It will then need to find that the constraints on BT are sufficient that it would not need to impose even a uniform price obligation on BT.[17] This is a distinct issue from the main topics of this response, and TalkTalk envisages that it will provide further views on this to Ofcom in a separate submission paper over the course of this summer.

4.9 Whether or not BT will be able in practice to earn supernormal profits by geographically price discriminating will depend upon the costs of engaging in such discrimination. This may be disproportionately costly where the geographic area in which there is less competition is small (for example, a 6-digit postcode, containing 10-20 properties), but will be much more realistic when there is a larger area to be considered for discrimination, such as an FTTC cabinet which would have 250-300 lines.[18]

4.10 As a result of these factors, unless Ofcom adopts a very granular geographic market definition, BT is likely to have both the incentives and ability to adopt a policy of price rises—whether generally or on the basis of geographic price discrimination—in some parts of category 1. This implies that BT will continue to hold SMP in parts of category 1, and Ofcom cannot legitimately find that BT do not hold SMP in category 1 areas.

4.11 However, in light of the presence of BT and two or more alternative networks in these areas, a light package of remedies is appropriate. TalkTalk does not believe, for example, that it would be appropriate to put in place charge controls in such areas, or controls on the quality of service that Openreach is required to offer its customers. Both areas should be left to commercial negotiation.

4.12 Rather, there are two remedies which Ofcom should continue to impose even in Category 1 areas:

- a requirement on BT to continue to offer the FTTC 40/10 product to third parties on request in all parts of a geographic area on an EOI basis and on fair and reasonable terms, without a specified charge control; and,

[17] Likely implying a coverage threshold sufficiently high that the costs of geographic price discrimination against premises in uncompetitive areas demonstrably outweighed the potential incremental profits of such discrimination.

[18] For example, consider an FTTC cabinet of 250 lines, where BT faces no competition, but which is in a postcode sector which Ofcom otherwise deems to be competitive and is therefore fully deregulated. At such a cabinet, BT could choose to withdraw all but the 80/20 FTTC product, which when combined with MPF currently costs £205.21 per annum. BT could then impose a price rise on this product, knowing that it faces no competition for these premises and that elasticities of demand will thus be very low and may be zero across a substantial range of price increases. A 10% price increase would raise an additional £5,100 per annum profit from this cabinet, and it is likely that profit-maximising price increases would be well above 10% in a monopoly market. This means that price discrimination at an individual cabinet level is likely to be profitable where there is no competition for lines from that cabinet.

- a uniform pricing obligation within each a postcode sector (although BT can choose to set different prices in different postcode sectors within Category 1).

4.13 The combination of these two remedies would provide adequate safeguards against BT exploiting its SMP in some parts of category 1 areas. In the absence of such remedies, it is likely that BT will continue to hold SMP, and be able to exploit this SMP to the detriment of consumers.

5 Category 2 — Ofcom's MPF/FTTC proposals

5.1 This section covers Ofcom's proposals for regulation of broadband products (MPF and GEA-FTTC) in category 2 areas. TalkTalk's proposed improvements in these areas are dealt with in section 6 below. It only covers the proposed remedies for access lines; leased line remedies are considered in section 8.

5.1 Ofcom's proposals

5.2 Ofcom's proposals in category 2 areas of the country are as follows for access lines, as set out in Table 1 of the consultation:

- to set a price cap from 2021-2026 on a CPI+0% basis. This would apply for MPF, the FTTC 40/10 product, and the FTTP 40/10 'protection product' for premises where FTTC is not available;
- to set no charge controls on FTTC 55/10, FTTC 80/20 or G.fast products;
- not to set a charge control on FTTP wholesale products (except for premises where FTTC is unavailable);
- to bar BT from offering geographic discounts within parts of category 2;
- to impose non-discrimination requirements via equivalence of inputs (EOI) on MPF, FTTC, and FTTP wholesale products;
- to set a minimum quality of service standard on all products at the same level as set for 2021 in the WLA18, which are in turn at the same level as for the year ending 31 March 2018.

5.3 This is a substantial weakening of regulation from the current approach where prices for all major regulated products used are set at cost, and quality levels improve over time. In particular, Ofcom's proposals mean that:

- prices will increase above costs over the regulatory period, particularly for the FTTC 40/10 product where increasing volumes will result in reductions in average costs during 2021-26;
- the proportion of wholesale products whose prices are regulated will decrease. By 2026 the only price regulated FTTC product (FTTC 40/10) is likely to be inadequate to meet the bandwidth needs of a substantial proportion of residential customer demand. The decreasing use of FTTC 40/10 will mean that the constraint which the charge control on this product imposes on other products will diminish;

- quality of service improvements are likely to cease[19], and the price regulated products will become increasingly undesirable compared to the general increase in the quality of service across the industry as a whole which is seen over time.

5.4 The following subsections consider the impact of Ofcom's proposals on the objectives that Ofcom laid out, and consider the analysis underlying Ofcom's proposals:

- promoting altnet FTTP investment (section 5.2);
- promoting BT FTTP investment (section 5.3);
- ensuring low consumer prices (section 5.4);
- lack of modelling undertaken by Ofcom (section 5.5);
- ensuring competitive retail markets (section 5.6);
- lack of justification for Ofcom's specific price cap proposal (section 5.7).

5.2 Impact of Ofcom's proposals on altnet FTTP investment

5.5 In this subsection we discuss Ofcom's claims regarding the impact of its proposals, the justification for Ofcom's specific proposal, the likely impact of the proposals and how Ofcom could model the impact of the proposals.

5.2.1 *Ofcom's claims*

5.6 Ofcom's commentary on the impact of its remedy proposals on altnet investment in its remedies document is very limited; indeed, there is no factual evidence or quantitative modelling whatsoever presented by Ofcom that its proposals will have the effect of increasing altnet investment in FTTP access networks.

5.7 Ofcom's justification is set out at §§2.19-2.20(a) of its consultation paper:

> *2.19 Our initial view is that investment incentives will be best supported by maintaining a stable regulatory regime, with charge controls set consistently between successive market reviews. In light of this, we propose setting a charge control for the price of MPF + FTTC 40/10 such that the price at the end of the current charge control in March 2021 will be taken forward in inflation adjusted terms, with pricing flexibility for higher bandwidth WLA services.*
>
> *2.20 (a) ... This approach sets prices somewhat above BT's costs. We consider this is appropriate because entrants, who are likely to face higher costs than BT, need to be able to compete with Openreach's wholesale services. Further, our view is that our approach will give access seekers a stronger incentive to switch to an alternative supplier, enter partnerships with such suppliers, or deploy their own network connections. We consider this, along with the availability of DPA, will ensure appropriate incentives for competitive network build.*

[19] BT's profit maximizing behavior will be to deteriorate quality as far as possible given the regulatory constraint imposed by Ofcom.

5.8 Unpacking these paragraphs, Ofcom appears to make a number of assertions in support of its proposed remedies. We comment on these below:

- **investment incentives will be supported by a stable regulatory regime**—TalkTalk agrees that this will be the case. However, Ofcom's proposals do not result in a 'stable regulatory regime' – rather they create the exact opposite, undermining a well-established, well-understood and predictable regime of basing regulated prices on BT's costs without any detailed evidence or explanation why such a change is appropriate. By moving away from an evidence-based approach to regulation, Ofcom's proposals create uncertainty and instability, which may be further exacerbated in the event that one or more parties appeals against Ofcom's decision. Furthermore, there is no evidence provided why a CPI+0% price cap creates a more stable regulatory regime than, say, a CPI-2% price cap over the regulatory period. Ofcom's proposals in its current consultation therefore undermine a stable regulatory regime, and consequently will reduce altnet investment**.**
- **charge controls should be set consistently between successive market reviews to support investment**—once again, TalkTalk agrees that consistency in regulation is generally supportive of investment. This requires that the same underlying principles and broad approach to regulation are adopted between market reviews and that any changes in approach are supported by evidence. It is consistency of approach which is important, rather than consistency of outcome, as consistency of approach means that market participants can predict in advance of regulatory consultations what outcomes are likely to be. Consistency of outcome, unsupported by evidence, is more vulnerable to change of internal staff and regulatory appeal. However, Ofcom is moving away from consistent and evidence-based regulation in its current consultation, one in which it cites no quantitative or even qualitative data in support of its change in approach. Ofcom's inconsistency will therefore tend to reduce levels of investment.
- **setting charges above Openreach's costs is appropriate because entrants will face higher costs than Openreach and need to be able to compete**—Ofcom is correct to note that entrants need to be able to compete effectively with BT in order to create incentives to enter the market. However, it is unclear how much higher entrants' costs are above those of Openreach, and whether there are any offsetting efficiencies from using FTTP rather than FTTC to serve customers which might partially or wholly offset these higher costs. Further, as set out below, there are other ways to ensure that entry can be profitable.

  The fact that altnets are already rolling out their networks across the UK would appear to imply that the current price caps set by Ofcom provide sufficient headroom for altnets to find it profitable to roll out their networks in significant parts of the UK.

  Furthermore, Ofcom has failed to recognise <u>when</u> higher charges are most likely to incentivise altnet entry. As we explain below at section 6.3.1.1, prices prior to entry do not affect altnet investment returns or incentives. Ofcom has presented no evidence, or even asserted, in its consultation that prices need to be higher in advance of a network even being built, rather than only once the network is commercially launched. Therefore, Ofcom is wrong in its assertion that setting charges above Openreach's costs (prior to entry) will increase altnet FTTP investment.

- **setting charges above costs will provide stronger incentives for access seekers to switch to an alternative supplier**—this is broadly accurate. However, in order to switch, access seekers need not only incentives to do so, but an alternative network to be available to switch to. In most Category 2 locations, for most or all of the regulatory period, there will be no altnet FTTP network available, and so access seekers will be unable to switch networks. Ofcom appears to have failed to understand that both incentives and ability are required in order for demand to be able to migrate to other networks and thus this point is only relevant after altnet networks have entered. Prior to altnet entry, incentives to switch networks are irrelevant.
- **setting charges above costs will provide stronger incentives for access seekers to enter into partnerships with altnet FTTP builders**—Ofcom has provided no explanation of why this would be the case, nor any evidence in support of this proposition. Several major access seekers already have some partnership arrangements in place (for example, TalkTalk has its FibreNation subsidiary, and Vodafone has entered into a partnership with CityFibre, [✂]), and these partnerships were in place before Ofcom signalled its change of regulatory approach in this consultation. It is therefore unclear that there will be any material impact of higher prices on these partnerships, given that all major access seekers are likely to be in one or more partnerships by April 2021, and the present level of prices is therefore clearly sufficient to drive partnerships. If Ofcom believes that there will be an increase in the number of partnerships due to setting FTTC 40/10 prices above costs, it is incumbent upon it to present some evidence supporting this hypothesis, which otherwise appears likely to be wrong.
- **setting charges above cost will provide stronger incentives for access seekers to deploy their own networks**—once again, Ofcom has provided no evidence, qualitative or quantitative, for this assertion. Ofcom has provided no analysis of which larger access seekers would experience such stronger incentives in light of these existing measures to develop FTTP networks, or that the stronger incentives would actually lead to materially greater FTTP investment. Access seekers will need both incentives and ability to increase network deployment; increased incentives alone are not sufficient.

  However, Ofcom has not assessed the ability of access seekers to construct more FTTP networks, or larger networks, than they would if Ofcom set price caps in line with BT's costs. They may lack this ability for a number of reasons, for example financial constraints due to lack of free cashflow and debt covenants which restrict financing network rollout using higher debt; or industry-level capacity constraints, potentially due to restricted labour supply following Brexit. As with several of the other points above, it is no use Ofcom increasing the incentives on access seekers to roll out their own FTTP networks if they do not have the ability to do so.

  What matters to consumers is the actual incremental investment in FTTP networks due to above cost FTTC 40/10 charges, not purely notional incentives which do not in practice materially change firms' behaviour. In order to reach sound conclusions on remedies Ofcom should assess not just incentives—using actual evidence, rather than merely assertion—but also the ability of access seekers to act on these incentives and actually roll out networks.

5.9 Therefore, many of Ofcom's claims regarding the positive impact of its proposals are incorrect or overstated. Even if Ofcom's proposals have the effect of improving the incentive structure on altnets and CPs– and Ofcom has not demonstrated that this is the case– it has made no effort to determine whether the change in incentive structure will have any practical effect on the market.

5.2.2 *Likely impact of higher MPF/ FTTC prices on altnet FTTP investment*

5.10 In its assessment of the impact of BT pricing on altnet FTTP investment Ofcom has ignored a number of crucial impacts of higher MPF/FTTC prices. We discuss the key impacts on altnet FTTP investment below, several of which will tend to push altnet investment in different directions. In section 5.5 below we discuss how these effects might be modelled.

5.2.2.1 *Higher post entry FTTP prices will increase altnet investment returns*

5.11 A higher post-entry FTTC price will increase the profit-maximising altnet FTTP price and so increase returns on altnet FTTP investment. This will reflect that there will be some competitive pressure from FTTC 40/10 on FTTP, and therefore that there will be a positive cross-elasticity of demand between the two products. This effect will be greater the closer the products are as substitutes to one another. The extent of the competitive constraint imposed on FTTP by FTTC regulation will depend upon several factors:

- whether Virgin Media's ('**VM'**) cable network is in an area. In areas where there is a VM cable network (around 70% of category 2 postcode sectors) it is likely that the DOCSIS cable network will be the closest competitive constraint on the FTTP product, due to the ability of DOCSIS to offer speeds far higher than 40Mbps download, and therefore closer to the speeds offered by FTTP. To the extent that customers are taking FTTP predominantly for the higher speed, this will mean that they are more likely to be choosing between DOCSIS and FTTP than between FTTC and FTTP, reducing the competitive constraint imposed on FTTP by FTTC 40/10.
- the competitive constraint that FTTC 40/10 imposes on FTTC 80/20. This is important because there may be a chain of substitution from FTTC 40/10, through intermediate products such as FTTC 80/10 and DOCSIS 3.0, to full FTTP products. Each link in this chain will matter, and so the extent of both substitution between FTTC 40/10 and FTTC 80/20, and between FTTC 80/20 and full FTTP, will be important. The extent of substitution is likely to change significantly during the regulatory period.
- the proportion of consumers whose data demands are such that they cannot be met by 40Mbps download speeds. While relatively few customers currently fall into this bracket, the proportion is growing and will be a substantial proportion of the market before the end of the control period. For such customers, there is unlikely to be any potential to substitute between FTTP and regulated FTTC products, which will mean that a growing proportion of demand for FTTP products will be invariant to the regulated FTTC 40/10 price.
- the extent to which products other than fixed line broadband products impose a competitive constraint on FTTP. Although it seems unlikely that there is meaningful substitution at present, 5G mobile networks are likely to roll out during the period of the next charge control and may lead to increased fixed-mobile substitution.

5.12 In light of these various factors, Ofcom has not shown– and cannot assume– that FTTC 40/10 pricing will exert a strong influence on the profit maximising FTTP price even at the start of the regulatory period. It should produce evidence supporting this hypothesis before adopting it.

5.13 These factors also mean that the constraints on FTTP from FTTC 40/10 will weaken in the latter years of the charge control period, as Ofcom correctly notes at §2.20(c): "*we recognise that the strength of the constraint provided by the 40/10 product may diminish during the control period, but this will happen gradually, allowing time for competitive investment to emerge*". This means that the profit maximising FTTP prices (and so profitability of altnet FTTP investments) will become less sensitive to the FTTC 40/10 price as the regulatory period progresses. Thus, the benefit of higher FTTC 40/10 prices in increasing FTTP prices and investment returns will diminish. We discuss the reason for the diminishing constraint below.

5.14 The constraint from FTTC 40/10 will weaken since consumers' bandwidth requirements are continuously increasing. This means that for a substantial proportion of consumers– and potentially for a considerable majority of customers taking FTTP– a 40Mbps of download speed will be unable to meet their peak demand, leading to buffering of video and a poor customer experience. In effect, either consumers would need to be willing to experience a significant diminution in the quality of their internet experience in order to save relatively small amounts of money—likely less than £3 per month—or those consumers using less than 40Mbps in peak bandwidth will need to be very elastic to prices.[20]

5.15 This rising bandwidth demand can be seen in Figure 5.1 below, [✂]. This is not consistent with FTTC 40/10 imposing an effective direct competition constraint on FTTP products over the whole of the charge control period. Even FTTC 80/20 will be unable to meet the needs of a significant proportion of customers: [✂].

Figure 5.1: [✂]

[✂]

Source: [✂]

5.16 In light of these bandwidth demand increases, it is important that Ofcom provides an assessment of the extent to which FTTC 40/10 will constrain FTTP prices by the end of the period in 2026. The constraint will only be effective if a meaningful proportion of customers would be willing to switch from higher speed broadband services down to a FTTC 40/10 product in the event of a sustained price rise of 10% for FTTP services.[21]

5.17 The constraint will also weaken as a result of the asymmetric nature of switching whereby customers already on FTTP are unlikely to downgrade to FTTC 40/10 in response to a SSNIP on FTTP – we have seen this effect this with superfast broadband where the levels of switching from superfast broadband to standard broadband are very low. When FTTP

[20] [✂]

[21] The 10% is in line with the upper end of the usual range for a SSNIP, as used in market definition assessments, which themselves consider which products impose effective competitive constraints on one another.

volumes are small this effect has limited impact. However, as an increasing portion of customers are on FTTP the constraint from FTTC 40/10 on the profit maximising FTTP price diminishes, as FTTP providers focus on maximising profits on their existing customer base rather than encouraging more customers from legacy products to migrate to FTTP.

5.18 Notably, it is only the post-entry price that matters to FTTP investment incentives; rational investors will rightly recognise that pre-entry prices do not affect returns (see a fuller discussion of this topic at section 6.3.1.1).

5.19 Furthermore, the potential increase in viable FTTP investment resulting from higher FTTC 40/10 prices will be muted as a result of capacity constraints. This is because, even if further network build were rendered viable as a result of higher FTTC 40/10 prices, altnets may lack the capacity (capital, resources, management) to be able to increase investment levels. Ofcom has conducted no assessment of these capacity constraints.

5.2.2.2 *Lower market share will reduce FTTP investment returns*

5.20 Altnet FTTP investment is only viable if new networks can achieve high take-up in the early years of deployment. That will generally require non-BT ISPs to have scale customer bases that can be migrated in bulk to the new network (such as TalkTalk or Sky choosing to migrate their entire customer base onto a new network where it is built). Without a scale customer base that can be migrated in bulk, take-up may occur too slowly for the network provider to make a viable return on investment.

5.21 A higher FTTC price prior to entry will tend to reduce the number of customers at CPs which use the Openreach network such as Sky, Vodafone and TalkTalk. This is because these operators have to compete with Virgin Media (which will not experience any price increase) and BT Retail (which will notionally experience a price increase, but in practical terms will pay the cost reflective charge, as the regulated price is an internal transfer payment). Increases in the relative cost of supply for CPs such as Sky, Vodafone and TalkTalk will have to be substantially passed through to consumers, given that the retail broadband market is relatively competitive.[22] These CPs will therefore have a price disadvantage in the retail market, causing their retail market shares and absolute number of customers to fall relative to the counterfactual of cost-reflective charges. As a result, these CPs will have fewer customers to migrate to new FTTP networks reducing the profitability and therefore financial viability of these FTTP networks.

5.2.2.3 *Ofcom's price cap proposal will not provide certainty and will therefore deter investment*

5.22 There is also a question of to what extent Ofcom's current approach will actually have the effect of providing investors with certainty that BT will set higher prices than at present for its MPF/FTTC products, increasing the profits of investing in FTTP. At present, little such certainty appears to be provided. Ofcom is proposing a price cap. Given BT has an incentive to reduce its price to meet competition there is no guarantee to investors that prices will remain at the price cap level.

[22] Frontier Economics (2016), *The Impact of a Cost-based VULA Price'*, September

5.23 Ofcom may be relying on its uniform price obligation to provide incentives for BT to set prices at the cap within Category 2 areas. However, while this may be effective in the early years of the charge control when there is limited altnet FTTP build, there is far less certainty that it will be effective towards the end of the charge control in 2026, much less in the next regulatory period.

5.24 In its consultation, Ofcom has not presented any analysis demonstrating that BT would indeed find it to be the profit-maximising approach to charge as high as the price cap throughout the regulatory period across category 2 areas. In the absence of such analysis, there can be no certainty that BT will price up to the cap.

5.25 This is particularly important since the profit-maximising FTTC price for BT is likely to change over the regulatory period. There are multiple factors which are likely to drive this, to varying degrees of extent and importance:

- roll-out of alternative FTTP networks will abstract demand from BT in some areas, and increase the overall elasticity of demand facing BT's FTTP products across category 2 as a whole. As such, as more areas are covered by FTTP, the optimal wholesale price for BT to charge will reduce; the more successful altnet FTTP rollout is, the more this price will reduce. Consequently, altnet FTTP rollout will lead to the profit-maximising FTTC price falling over the regulatory period, and there can be no certainty, in the absence of detailed modelling by Ofcom, that the profit-maximising price will be above Ofcom's proposed price cap in the final year of the charge control. This is likely to be a crucial driver of BT's optimal FTTC price in each year of the regulatory period.
- the extension of Virgin Media's hybrid DOCSIS/ FTTP network under its Project Lightning programme will also abstract demand from BT's FTTC products, and therefore lower the profit-maximising price for FTTC 40/10. It is unclear how long VM intends to continue its network extension for; however, if this continues into the regulatory period starting in April 2021, then further network extensions will increase the elasticity of demand facing BT at all price points, and thereby reduce the profit-maximising price.
- further increases in the speed of VM's network, from their current standard speeds of around 300Mbps, would also be expected to increase the elasticity of demand facing BT's FTTC 40/10 product, by widening the already large quality differential between BT FTTC and VM DOCSIS. However, this would be expected to have a much smaller impact on profit-maximising FTTC prices than altnet FTTP and VM network extension.
- the advent of 5G networks across the UK—particularly, initially, in the urban areas which comprise the majority of category 2 premises—is also likely to lower the profit-maximising price for FTTC, by offering increased possibilities for customers to cancel fixed line subscriptions in favour of meeting all of their connectivity needs via mobile. As Vodafone has recently said when announcing it would roll out 5G to 19 towns and cities across the UK during 2019 "*5G promises device speeds around 10 times faster than 4G, meaning high quality 4K video calls and downloads will be delivered even quicker to smartphones and tablets. Data transfer of less than 20 milliseconds will be standard, which is great news for mobile users like gamers, who up until now have*

had to rely on home broadband when playing online."[23] This means that 5G will offer faster speeds than BT's regulated FTTC 40/10 product, potentially making it viable for some customers to save money by dispensing with a fixed line broadband product, lowering the profit-maximising price for BT. Over the course of the regulatory period, 5G services will be rolled out to an increasing number of cities by Three, Vodafone, and O2, meaning that over the period the profit-maximising FTTC and FTTP prices for BT to charge will reduce. Once again, there is no evidence in Ofcom's consultation that it has modelled 5G roll-out, and fixed/ mobile substitution, in order to determine that BT's profit-maximising price will remain at or above the price cap for the whole of the regulatory period.

5.2.2.4 *Overall impact of higher prices on altnet investment*

5.26 Overall, therefore, it is far from clear that increases in the FTTC price after entry (but whilst BT continues to hold SMP), will increase altnet FTTP investment. The effect is ambiguous, and relies upon the FTTP price effect (which will diminish over the control period) being greater than the sum of the effects of lower market share and reduced certainty. Ofcom has presented no evidence to demonstrate that this is the case; indeed, it has not even identified the various separate factors set out above. Ofcom must do so in order to have a solid evidence base on which to make its decisions.

5.27 However, higher FTTC prices prior to entry will unambiguously reduce potential altnet FTTP investment. Therefore, it is important for Ofcom's analysis of the impact of higher FTTC 40/10 prices to take into account of when altnet entry occurs. One of the main issues explored in section 6.3 below is whether there is a need for prices to change prior to investment being undertaken, or only once altnet investment has occurred.

5.2.3 *Conclusion - Ofcom's proposals are unlikely to increase altnet investment*

5.28 The central claim of Ofcom's proposals is that setting MPF and FTTC 40/10 prices above cost – and increasingly above cost – from 2021 will encourage altnet FTTP investment. However, there are a number of significant flaws and omissions in the limited reasoning that Ofcom has provided:

- there is no benefit from increasing MPF/FTTC prices above cost pre-entry – it is only higher post-investment FTTC prices that will increase FTTP prices and profitability and encourage switching to altnet FTTP networks. What is important to investors is certainty that prices after investment will be sufficiently high.
- the impact of higher FTTC prices on increasing FTTP prices and rollout will be muted due to the weakening constraint on FTTP from FTTC prices, and capacity constraints, both of which will limit additional investment.
- Ofcom has ignored that the weakening of retail competition resulting from higher wholesale prices will erode ISPs' market share and so reduce the viability of altnet FTTP investment.
- Ofcom's approach will not provide the certainty and confidence that investors need:

[23] https://mediacentre.vodafone.co.uk/news/5g-in-19-cities-during-2019/, accessed 14 May 2019

- consistency of regulatory approach is key to certainty, not consistency of prices – Ofcom's approach of so-called 'stable' prices reduces certainty as it represents a radical, unjustified change of approach;
- Ofcom has not even sought to justify the specific level of its proposed CPI+0% price cap;
- a price cap will not provide pricing certainty for altnet FTTP investors, since it may be in BT's commercial interests to reduce prices below the cap to meet competition.

5.29 Overall, Ofcom's proposals are unlikely to increase altnet FTTP investment, and may well have the impact of reducing altnet investment, while certainly harming consumers through higher prices. Ofcom can and should conduct analysis/modelling of the various impacts of its approach to assess the change in altnet investment that its weakened regulation might cause, and set this against the certain loss to consumers from FTTC prices being set in excess of costs.

5.3 Impact of Ofcom's proposals on BT FTTP investment

5.30 This section considers the impact of Ofcom's proposals on BT's incentives to invest in FTTP networks. Promoting FTTP investment by BT is the second of Ofcom's four objectives in category 2, as set out at §2.3(b) of its consultation. It sets out the manner in which its proposals will encourage investment by BT in cursory fashion at §2.20(b) of the consultation:

> *Investment/ potential investment in fibre by BT's competitors will put competitive pressure on BT to invest in fibre itself*.

5.31 No mechanism is identified for this 'competitive pressure', nor why competitive pressure will provide sufficient incentive for BT to invest in FTTP. As such, there is little to comment on in Ofcom's document, which essentially appears to make a leap of faith, unsupported by any evidence or analysis, that altnet FTTP investment will increase BT's levels of investment. This section therefore necessarily has to address this issue from first principles, given Ofcom's omission of any analysis on this topic. Furthermore, Ofcom has not considered any other effects of higher prices on BT's incentives to invest in FTTP. This section also seeks to address that omission.

5.3.1 *Ofcom's stated analysis relies on its proposals increasing altnet FTTP investment*

5.32 As Ofcom sets out at §2.20(b), the only mechanism by which it believes that BT's incentives to invest in FTTP will be increased is by increased competitive pressure from altnets building FTTP. As a matter of logic, this mechanism can only apply if Ofcom's proposals will have the impact of increasing BT's expectation of altnet FTTP construction and/ or the actual level of altnet FTTP construction, against a counterfactual of cost-reflective price caps being set on Openreach products.

5.33 However, as section 5.2 has set out in detail, there is little evidence presented by Ofcom that its proposals will in fact increase altnet FTTP investment, with Ofcom relying entirely on unevidenced assertion which appears unsupported by detailed economic analysis. Indeed, given the analysis set out at §5.20-5.23 above, there is a meaningful risk that Ofcom's proposals will reduce altnet FTTP investment compared to the counterfactual. Consequently,

if the analysis above is correct, then by Ofcom's own reasoning its proposals are likely to reduce the level of investment in FTTP by BT.

5.34 Even if Ofcom's proposals did increase altnet FTTP investment incentives, this will only increase BT's incentives to invest in delivering in new areas if BT and altnets get into "build races" where once one firm has committed to build, others demur. This is possible, but Ofcom needs to set out why they think it will take place, rather than, for example, targeted overbuild once altnets have entered; such targeted overbuild, by deterring entry, will mean that there is only a short term increase in BT FTTP investment. At present, there is simply an implicit assumption that network providers will adopt such behaviours.

5.35 BT's current approach to FTTP build does not necessarily conflict with any particular build strategy, as *incremental* changes in investment need to be considered. If BT would find it profitable to build FTTP in a particular region under the current regulatory structure, then it will do so irrespective of what exclusionary or accommodatory strategy it is otherwise adopting. The strategies above reflect, at the margins, how BT will choose to deter or accommodate entry. As this background level of FTTP construction is unrelated to Ofcom's regulatory approach, it should not be incorrectly treated as being due to Ofcom's proposals. Rather, it is changes above (or, indeed, below) this base level which should be considered.

5.3.2 *Ofcom's analysis omits the role of high FTTC prices in discouraging BT FTTP investment*

5.36 The sole sentence in Ofcom's consultation paper on BT's incentives to invest in FTTP refers exclusively to the role of altnet FTTP investment in increasing BT FTTP investment. It does not consider any other factors at all.

5.37 One such important factor is the direct role of increased FTTC prices and their impact on BT's incentives to invest in FTTP. This section explores those incentives.

5.38 As a matter of basic economics, firms will only invest in a particular project if the *incremental* discounted cashflows which are earned from that project exceed the investment cost of the project, with the discount rate being the cost of capital for that project.

5.39 For many projects, the incremental cashflows are the same as the absolute cashflows, as there is no reduction in cashflow in any other part of the business as a result of an investment. So, for example, if a firm with paper factories in Europe chooses to build one in the United States, there will be no reduction in demand for its pre-existing factories from its new one on the other side of the Atlantic, and the incremental profits are the same as the absolute profits from the new factory.

5.40 However, when BT is considering investing in FTTP, it is likely that the incremental and absolute profits from the project will be substantially different. This is because of the cannibalisation impact of building BT FTTP in an area where BT's FTTC network is already present (essentially, the whole of the UK). Building FTTP will divert demand from existing networks, and as BT Openreach has a national wholesale market share of around 75%, the majority of demand for the new FTTP network will inevitably come from BT's FTTC network. As broadband penetration is already well in excess of 90% of households in the UK, there would be expected to be little market expansion effect from the development of a new network.

5.41 Because of this abstraction effect, the majority of customers on the BT FTTP network would otherwise have been served over the FTTC network. The incremental profitability of a BT FTTP premises which would have been served over the FTTC network is thus:[24]

$$\Delta\pi = \pi(\text{FTTP customer}) - \pi(\text{FTTC customer})$$

5.42 While the profitability of an BT FTTP premises which would have been served over another network (principally at present Virgin Media) is:

$$\Delta\pi = \pi(\text{FTTP customer})$$

5.43 It is apparent from these equations that BT will be setting its prices to maximise its total profits across the two types of customer. For any particular area, the same price is likely to have to be set for any customer irrespective of whether, in the counterfactual, they would be served over the BT or the Virgin Media network.

5.44 Furthermore, Ofcom's proposals mean that BT will have to set the same price for all customers across the whole of category 2. That means that the FTTC price (and consequently incremental profitability of an FTTC customer) will be the same across all of category 2. Similarly, Ofcom has proposed that BT will have to set the same FTTP price across all of category 2.

5.45 Increasing the FTTC price will directly reduce the incremental profitability of customers switched from the BT FTTC network to the BT FTTP network. Whilst a higher FTTC price may increase the profit-maximising FTTP price the increase in FTTP price will very likely be less than the increase in the FTTC price. This is because cross-elasticities of demand for substitutes are invariably less than +1. This means that the profit-maximising FTTP price will rise by less than £1 and the gap between FTTC and FTTP prices will narrow. As such, an increase in the FTTC price, which will increase the profitability of FTTC customers, will reduce the incremental profitability of investing in FTTP for BT.

5.46 Furthermore, as Ofcom itself accepts FTTC 40/10 will become a weaker constraint on FTTP over the course of the regulatory period which means that the cross-elasticity of demand will decline over time – see section 5.2.2.1 above. This will decrease the impact on altnet investment of Ofcom setting an FTTC 40/10 price in excess of costs.

5.47 This important effect has been ignored by Ofcom. Ofcom should therefore seek to quantify the magnitude of this effect through modelling, and take it into account when determining the impact of its proposals on levels of BT investment in FTTP.

5.3.3 *Conclusions on the impact of Ofcom's proposals on levels of BT investment in FTTP*

5.48 Ofcom's scanty analysis of the impact of its proposals on BT's level of investment in FTTP appears deficient. It has presented no evidence to support its assertion that there will be an increase in BT FTTP investment, and there are many reasons to think that there may be no such increase, or indeed that Ofcom's proposals will reduce BT's levels of investment in FTTP:

[24] Using the standard economic notation, where π is profits.

- as set out at section 5.2 there are good reasons to think that Ofcom's proposals may not increase altnet FTTP investment, which would undermine the sole mechanism identified by Ofcom in its consultation for increasing BT FTTP investment;
- Ofcom has failed to reflect that higher FTTC prices, by reducing the incremental profitability of investing in FTTP for existing customers, will *ceteris paribus* reduce levels of FTTP investment by BT.

5.49 These are fundamental omissions. In the absence of Ofcom dealing with each of these points in its analysis, it can have no confidence in its unevidenced claim that its proposals will increase BT's FTTP investment levels.

5.4 Ofcom's approach harms consumers by setting prices above the competitive level

5.50 One of Ofcom's four objectives is: "*Protecting consumers against excessive prices and poor quality*" (§2.3). This is an appropriate objective. However, Ofcom's proposals fail to do this since the prices of the regulated MPF and FTTC 40/20 products are likely to be excessive and, by design, above the competitive level.

5.51 First, Ofcom's proposals to set BT MPF and FTTC 40/10 prices based on a CPI+0% price cap rather than BT costs unambiguously results in excessive prices while BT continues to hold SMP. We estimate that wholesale prices will be about £1bn[25] above cost over the period of the review. The majority (about 70%) of this will be passed to consumers through in higher retail prices.

5.52 Second, Ofcom's proposals to only price regulate FTTC 40/10, rather than any higher speed products, and to set regulated prices for FTTC 40/10 above cost will result in a weak constraint on FTTP prices particularly in areas where Openreach is the only investor in FTTP. FTTP prices above the competitive level will reduce take-up and consumer welfare.

5.53 Ofcom's regulatory approach as set out in its proposed remedies appears to be effectively to rely on regulation of FTTC 40/10 as a bridge to network competition between competing FTTx and DOCSIS networks across substantially all of category 2. This reflects Ofcom's comment at §2.20(c) that '*we recognise that the strength of the constraint provided by the 40/10 product may diminish during the control period, but this will happen gradually, allowing time for competitive investment to emerge*'.

5.54 For Ofcom to be able to rely on FTTC 40/10 regulation as a bridge to competition, at least one of two conditions needs to be fulfilled:

[25] This estimate excludes the indirect impact of above cost MPF/FTTC 40/10 prices on FTTP, G.fast and FTTC 80/20 prices. This is the difference in revenue in category 2 areas between prices set at CPI+0% and prices set at FAC plus HON (as now). Under TalkTalk's proposals some the price in some areas would be set at FAC excluding HON, and there would consequently be more than £1bn of benefits to consumers compared to Ofcom's proposal.

- there needs to be effective network competition in a substantial proportion of category 2 before the end of the control period;[26] or,
- the FTTC 40/10 product needs to remain an effective competitive constraint over the whole period, even when the FTTC 40/10 price is set above costs.

5.55 Ofcom has not demonstrated that the first of these two conditions holds – it has not shown that there will be effective competition across much of category 2 by 2026. Furthermore, Ofcom's proposals are not robust to unforeseen changes—or lack of changes– in network competition.

5.56 Ofcom has also entirely failed to assess the second condition, that FTTC 40/10 will remain an effective competitive constraint on pricing of higher speed Openreach products during the regulatory period. As we explain above – see section 5.2.2.1 – the constraint from FTTC 40/10 prices on FTTP prices will diminish over the regulatory period as bandwidth demand increases. Moreover, as the FTTC 40/10 price is set well in excess of costs, it is unlikely to be able to constrain the price of higher speed products to being close to the competitive level.

5.57 In light of these bandwidth increases, it is important that Ofcom provides an assessment of the extent to which FTTC 40/10 will be able to provide an effective competitive constraint on FTTP prices at end of the period in 2026. Such an effective constraint will require that a meaningful proportion of customers would be willing to switch from higher speed broadband services down to a FTTC 40/10 product in the event of a sustained price rise of 10% for FTTC services.[27]

5.58 Overall, however, it appears unlikely that FTTC 40/10 will impose an effective competitive constraint on 80/20 FTTC, and higher speeds by 2026.

5.59 Thus, both of these possibilities appear unlikely. However, they cannot be ruled out in the absence of data. Ofcom should therefore present its evidence base for its implicit claim that FTTC 40/10 will be sufficient to impose a competitive constraint on FTTP services throughout the lifetime of the next charge control.

5.5 Ofcom should properly model the impacts of its proposals

5.60 One of the most important omissions in Ofcom's consultation at present is the complete absence of any analysis or modelling of the impacts of its proposals. Modelling is vital in this case since it allows the overall impact of different effects of the proposal, which sometimes act in different directions, to be assessed. This section sets out how Ofcom should rectify this problem.

5.61 In order to properly assess the impact of its proposals, Ofcom needs to model and weight two factors:

[26] Effective competition means competition in an area that would be sufficient, if BT were setting a price in that area alone, to constrain BT such that its optimal price would be less than 10% in excess of the competitive level.

[27] The 10% is in line with the upper end of the usual range for a SSNIP, as used in market definition assessments, which themselves consider which products impose effective competitive constraints on one another.

- the impact of higher prices to consumers from both higher wholesale prices and reduced retail market competition. These higher prices will directly reduce allocative efficiency, and reduce consumer welfare. Some of this consumer welfare will be transferred to BT in the form of higher profits, and some of it will be a deadweight loss.
- the increase in FTTP investment due to Ofcom's proposals. This investment will come from a range of market participants, but primarily altnet FTTP builders and BT's Openreach division.[28]

5.62 Both of these factors will need to be assessed relative to a counterfactual. In this case, the correct counterfactual is the pre-existing regulatory structure, where Ofcom sets FTTC 40/10 and MPF prices in line with the costs of provision as is done now.

5.63 Building such a model will also provide Ofcom with the ability to model proposals put forward by market participants, such as TalkTalk's proposed regulatory model presented in section 6. This will be of considerable benefit as the review progresses, and different market participants submit various regulatory proposals, some of which are likely to be very different from Ofcom's proposals. Ofcom will also be able to model how robust the regulatory approach is to sensitivities such as a lower cross-elasticity of demand between FTTC and FTTP products.

5.64 The modelling undertaken by Ofcom can be undertaken in two steps. Ideally, these will then be integrated into a single model, but even separate modelling of the price impacts and the investment impacts will offer considerable additional clarity to market participants.

5.5.0.1 *Pricing impacts*

5.65 Ofcom's proposals entail higher prices to consumers than would have pertained under cost-reflective regulation.

5.66 In order to assess these higher prices, Ofcom should determine what the cost reflective price would be, on the basis of the fully allocated costs of providing MPF and FTTC 40/10.

5.67 The pricing uplift on each product in each year is therefore the difference between the cost reflective price, and the price proposed by Ofcom under its CPI+0% price cap. Ofcom should assume in the first instance that BT will price up to the cap in each year of the charge control; an add-on to this approach which Ofcom may wish to consider is to determine whether BT might have incentives to price below its cap at any point in order to deter entry. This type of modelling will be particularly important if Ofcom models TalkTalk's proposal, which sets a price floor as well as a price cap following entry, to provide certainty over pricing to altnet entrants.

5.68 The total cost to consumers will be the wholesale price uplift, multiplied by the volume of each of MPF and 40/10 FTTC in each year of the charge control and by the rates of pass-through of the price uplift from wholesale to retail pricing. Ideally, the volumes under

[28] Evidently, as explained above, the impact of Ofcom's proposals may in fact be to decrease the total volume of FTTP investment across the market. In this instance, there is no need to do any more modelling, as the impact on consumers will be unambiguously harmful.

different price caps will be slightly different to reflect an elasticity of demand effect as prices are increased. However, in practice the elasticities are likely to be low, at least until there is sufficient network competition in a postcode sector to impose a competitive constraint on BT, and there will be little loss of accuracy from using the same volumes at the cost reflective and CPI+0% price levels.

5.69 There will also be higher prices for consumers on other products, including FTTC 80/20, DOCSIS, and FTTP products, reflecting the reduction in competitive pressure due to higher price caps on MPF and FTTC 40/10. The extent of these higher prices will depend on the cross-elasticity of demand, and may change over time as customers' bandwidth requirements increase and the constraint on DOCSIS and FTTP from lower speed products wanes.

5.5.0.2 *Investment impacts- altnets*

5.70 Ofcom should undertake analysis which will enable it to form a quantified view on the elasticity of FTTP investment with respect to FTTC 40/10 prices. It is this elasticity which would drive a well rationalised cost-benefit analysis of Ofcom's proposals; in the absence of such analysis, it is difficult to determine whether Ofcom's proposals will on balance help or harm consumers' interests.

5.71 There are a number of evidential sources which Ofcom could draw on when conducting such analysis:

- various builders' business plans. These will likely contain assumptions on both prices and volumes. Sensitivity analyses incorporated in business plans will be particularly important, as these may be informative on the manner in which amending prices changes levels of investment. The plans may also indicate how different areas of the UK become profitable/ unprofitable as prices are changed.
- evidence from other countries, reflecting how much investment took place at different regulated price levels in those countries. In considering this evidence, Ofcom will have to be cautious given that there may be differences in planning laws, build costs, and consumer behaviours.
- historical evidence from the UK, on the extent to which, and areas in which, FTTP roll-out has already occurred, reflecting the areas in which investment is likely to be profitable at current regulated price levels. This evidence may be able to be supported by the business plans which underpinned the investment.

5.72 These sources should enable Ofcom to determine how much altnet FTTP investment there will be at the two price levels. Ofcom can then ascertain how much incremental investment its proposals will generate.

5.73 The analysis will need to reflect a number of other factors, including:

- that FTTC 40/10 is only a partial substitute for FTTP and so provides a limited constraint on FTTP prices, which will weaken over time, reducing the cross-elasticity of demand;
- that switching is asymmetric which, as FTTP volume builds, weakens the constraint from FTTC 40/10;

- that capacity constraints will mean even if FTTP investment returns resulting rise in FTTP investment will be small;
- higher pre-entry FTTC 40/10 prices will reduce the viability of retail operators, and so limit bulk switching to new altnet FTTP networks, impacting their profitability.

5.74 If Ofcom lacks the data to populate such a model, this is a fundamental weakness in its analytical process, which it should urgently seek to rectify. Ofcom cannot proceed with remedies without understanding their impacts.

5.75 In the event that there is little or no incremental investment generated by Ofcom's proposals, this provides powerful evidence that it should reconsider whether its proposals are appropriate, or whether a different approach would improve outcomes at less harm to consumers.

5.5.0.3 *Investment impacts – BT*

5.76 Similar to altnets, Ofcom should also model the impact of its proposals on the level of BT investment in FTTP which is due to Ofcom's regulatory proposals.

5.77 The factors that will need to be taken into account in this analysis are somewhat similar to those for altnets, with differences predominantly reflecting the asymmetry of incentives caused by BT's existing network assets:

- evidence of incumbent investment in other countries, and the extent to which that has been driven by competition and other considerations;
- historical returns on BT's previous rounds of investment in FTTP. By the time of the next review, there should be significant data on the performance of BT's first tranches of FTTP investment under the current regulatory structure;
- BT's business plans for FTTP, and the required prices and penetration rates for FTTP investment to cover its cost of capital;
- the impact of increased FTTC prices on FTTP prices, given the cross-elasticity of demand between them;
- the reduction in BT's incentives to invest in FTTP at higher FTTC price levels, as FTTP investment would cannibalise higher FTTC margins.

5.78 The incremental BT FTTP investment (if any) due to Ofcom's proposals can be calculated taking all these factors into account. Ofcom should ensure that it has adequate quantitative and qualitative data to model BT's investments to a reasonable level of accuracy.

5.5.0.4 *Weighting prices versus investment*

5.79 The analysis above sets out how Ofcom can determine separately what the impacts of its proposals on consumer prices and on levels of investment are. However, there are strong reasons to think that this type of modelling would not, on its own, be sufficient, and that Ofcom should be required to provide evidence that its proposals are, overall, beneficial to consumers, taking into account both price increases and incremental investment. If *any* increase in FTTP investment were sufficient, then it would be sufficient for Ofcom to demonstrate a £1m per annum increase in FTTP investment, even if this were at the cost of

£10m per annum of consumer price increases and sharp reductions in retail market competition.

5.80 The most complete way to model this would be to conduct a full cost-benefit analysis, with discounted benefits being used to trade off the future benefits from FTTP investment against the immediate costs from increased FTTC prices and reduced competition in the retail broadband market. In this full model, Ofcom would consider not only the level of FTTP investment, but how this translated into take-up of FTTP by consumers, and the extent to which consumers would benefit from being served by FTTP rather than FTTC or DOCSIS products.

5.81 Such benefits would include:

- lower fault rates, with an estimate of the cost to consumers and businesses per fault in terms of hassle, lost time, and (for businesses) lost revenue, along with lower costs to serve for retail CPs;
- faster speeds, with an estimate of the additional value created by higher speeds; and,
- where investment is by an altnet, the value to consumers of an additional competitor.

5.82 All of these benefits can be assessed over time in monetary terms, and discounted back to present values using an appropriate discount rate. This discounted value of FTTP could then be compared to the cost to consumers in higher costs from in increased charge control cap.

5.83 However, this is likely to be a relatively complex process, as it would involve modelling the impacts of FTTP networks on consumer welfare many years into the future. Instead, it may be more tractable for Ofcom to simply set out the costs over the current review period from FTTC prices above cost (and any higher DOCSIS/ FTTP prices due to the umbrella effect of the higher FTTC prices), and the extra volume of investment which it concludes will be levered in by these higher prices. This will then clarify the impacts of Ofcom's proposals, and enable stakeholders to comment sensibly on them. Ofcom can then set out what the cost to customers is of each million pounds of incremental FTTP investment.

5.6 Ofcom's proposals will weaken retail market competition

5.84 One of Ofcom's four objectives is: "*Maintaining retail competition based on access to the Openreach network*" (§2.3). We agree with this. However, Ofcom's proposals fail to do this.

5.85 Ofcom's entire assessment of the impact of its proposals on retail market competition is disposed of in two sentences, at §2.20(d) of its document:

> *We consider that retail providers will still be able to compete based on access to the Openreach network, as they will be able to have this access on similar terms as at present. Rival network deployment will give them more options for wholesale provision*.

5.86 This claim is wrong and misleading.

5.87 First, what is relevant is not whether an operator is "*able to compete*"– a phrase which has no obvious meaning in economics– but whether retail providers can compete effectively, enabling them to impose an effective competitive constraint on BT.

5.88 Second, Ofcom is incorrect to say that retail providers will have access to the Openreach network on similar terms as at present. Ofcom currently regulates both MPF and FTTC 40/10 products on a cost-reflective basis, ensuring that the average price paid by external retail providers such as TalkTalk is the same as the underlying cost incurred by BT. The alignment of the external price with the average internal cost ensures that external providers are able to compete on a broadly level playing field with the downstream BT brands, supporting effective retail market competition. If prices are set above cost, a provider may still be able to remain in the market, but competition will be less effective, and consumers will be harmed by this loss of competition.

5.89 Ofcom is now proposing to fundamentally change this regulatory structure and, as set out at section 5.7, below, to simply impose a CPI+0% price cap, without any underpinnings based on the costs of BT or entrants. This will mean that the internal average cost faced by BT's downstream retail divisions will diverge from the price paid by external retail providers.[29] As the average costs of offering FTTC 40/10 are expected to fall over the upcoming regulatory period, due to the increasing volumes of customers taking FTTC products, this means that BT Retail will face a lower per unit average cost than providers like TalkTalk or Sky.

5.90 Ofcom's price proposal is a very significant shift, which will create a meaningful competitive disadvantage for external retail providers against BT Retail. There is no economic sense underlying Ofcom's assertion that conditions will be '*similar*' to at present—merely setting the same price in real terms does nothing to ensure consistency of competitive conditions when underlying costs are changing.

5.91 There will be an unambiguous negative impact on retail competition, compared to versus cost-based prices. Ofcom should undertake a full assessment of the magnitude of the impact of its proposals on retail market competition. It cannot simply assert that there is no issue to be considered without any underlying analysis or evidence. Doing so indicates prejudice. This weakening of regulation will occur in most parts of category 2 many years before any additional or sufficient competition emerges to protect consumers' interests and ensure competitive prices and quality levels. Therefore, Ofcom's proposals will have the direct effect of harming consumers through higher prices, and will also weaken retail market competition, compared to the counterfactual of cost reflective wholesale MPF and FTTC charges for BT.

5.7 Justification for Ofcom's specific price cap proposal

5.92 Ofcom's claims regarding the impact of its proposals merely refer to whether or not the price cap on Openreach's MPF and FTTC access products should be set above its costs. They do not consider the precise level at which the price cap should be set, even if it is correct that it should be set in excess of costs. There is no evidence at all presented by Ofcom in its consultation in support its proposal of a CPI+0% price cap. A wide range of different actual price caps could be consistent with the considerations set out at §§2.18-2.20. Indeed, in principle any price cap which leads to prices above costs could be consistent with meeting these objectives.

[29] At least, as long as BT chooses to price in line with its price cap.

5.93 It is surprising that, at this stage in the review cycle, Ofcom has proposed a precise price cap without any evidence in support of that particular cap. That Ofcom has proposed a specific, single, price provides powerful evidence of its prejudice in this consultation.

5.94 If Ofcom wished to base its charge control on actual evidence, rather than prejudice, there are a number of factors it should take into account when setting such a price cap. Most importantly, Ofcom has set out that it needs to leave sufficient '*headroom*' for an entrant, which is likely to have a higher cost base than BT, to profitably enter the market. This is essentially an 'reasonably efficient operator' (or REO) cost level, although potentially with some adjustments, a cost concept which is commonly used in regulatory economics.

5.95 In the consultation (at §2.14(b)) Ofcom suggests that the current FAC+HON price may be close to the REO cost: "[In the WLA 2018] … *We found that BT's costs with a HON adjustment led to a price level which was within the achievable cost range of a "Reasonably Efficient Operator" (REO).*" Further, it appears from TalkTalk's discussions with Ofcom that setting a CPI+0% cap for MPF/FTTC may have been intended by Ofcom to reflect the REO cost. However, Ofcom's approach and reasoning in this consultation is opaque: this explanation was not included in WLA18, implying that this 'reason' may have been developed after the WLA18; there is no evidence presented on what the REO cost is or what '*within the achievable cost range'* means; there is no explanation of why even if the price set in WLA18 was in line with the REO then a CPI+0% cap would keep it in line; and, as we describe at §6.42 the appropriate price for MPF/FTTC is lower than the REO cost for FTTP, reflecting quality differences.

5.96 The REO cost level is the level at which an entrant, with the lowest cost base achievable by an entrant, will just be able to enter and earn a normal rate of return. Importantly, in markets where there are economies of scale, this means that the costs of the REO operator will be usually above those of the incumbent. Even if a fully effective, cost-reflective, DPA product is in place, there will remain a cost asymmetry between altnets and BT, as BT will only face the incremental costs of using its network, while altnets will face (considerably higher) average costs. On the other hand, a new entrant may benefit from technological progress since the incumbent built its fixed assets, and to the extent that technological progress leads to lower costs, this will reduce the REO benchmark and offset some of the disadvantage caused by loss of economies of scale.

5.97 It is unclear why Ofcom has not used REO costs as a benchmark in order to provide a data point underlying the level of the price cap which it proposes rather than setting a future price based on the existing price and an index. Using an REO benchmark as the basis for setting prices above cost would not only provide a suitable price level to incentivise entry by efficient entrants, but would also aid regulatory stability and certainty, further supporting investment, by adopting a concept which is well understood by firms operating in the broadband sector. Charges at an REO level would also provide appropriate and efficient incentives for access seekers to choose between different networks.

5.98 Therefore, the choice of CPI+0% as a charge control is essentially arbitrary and is not based on evidence. Even if Ofcom were to assess setting a charge control on an REO basis, and conclude that for some reason this was not possible or proportionate, then there appears no rational basis for setting the charge control at CPI+0%, other than it is a round number. It is unlikely that the optimal level of the charge control to meet Ofcom's objectives would be

exactly in line with CPI inflation in all five years of the proposed charge control, for a number of reasons:

- the actual level of prices critically depends on the initial price (in 2020/21). There is no evidence presented that this price level is suitable to promote investment, or where this price level sits in relation to either REO or EEO costs in 2020/21. Indeed, it is entirely possible, given the lack of analysis, that the price in 2020/21 may be above the level of REO costs.
- if Ofcom wishes to the price cap to track the likely progress of the cost of rolling out altnet FTTP networks, there is no reason to believe that a **Consumer** Price Index will be a particularly good measure of this. The CPI will generally diverge from construction costs. This can be seen by a comparison of ONS data on CPI and on new build construction costs (part of the OPI).[30] Between 2015 and December 2018, the CPI increased by 7.1%, while different elements of the OPI increased by divergent amounts: the infrastructure sub-index increased by 6.7%, while the private industrial sub-index increased by 13.5%. Ofcom has provided no reasoning why the CPI is likely to be a good approximation of the costs of rolling out FTTP networks over the next few years. This is usually adjusted for by applying an X value in the CPI-X formula which takes account of expected cost changes; however, Ofcom has chosen not to so this. This risks unpredictable errors in either direction, with either an excessive price cap leading to short term consumer prices being higher than required to stimulate entry, or lower than required to optimise altnet FTTP build.
- the proposed value of X is the same in all years of the charge control, resulting in the gap between prices and costs for FTTC products being wider in the final year of the charge control than in the first year of the control.[31] Ofcom has provided no reason why this is appropriate, or why greater incentives are required to stimulate FTTP build in 2026 than would be required in 2021. Indeed, if anything it seems likely that the appropriate approach would be the other way around, with greater incentives required in earlier years when consumers' bandwidth demands are lower and the technology of rolling out FTTP networks is less mature.
- no reasoning or evidence at all is given as to why 0% is the appropriate adjustment to CPI to stimulate altnet FTTP investment. In principle this could be higher (particularly in the early years) if the price control is below the REO level, leading to reduced levels of investment; or lower, if the current charge control is above the REO level of costs, where further increases in prices will only harm consumers through higher short run prices and stimulate inefficient altnet FTTP investment.

[30] See https://www.ons.gov.uk/businessindustryandtrade/constructionindustry/datasets/interimconstructionoutputpriceindices

[31] Reflecting both the increasing volume of customers on the FTTC network and opex efficiencies, both of which will result in the real cost per line falling over the charge control period.

6 Category 2 areas – TalkTalk proposed MPF/GEA remedies

6.1 This section considers whether and how Ofcom could adapt regulation of MPF and FTTC 40/10 in category 2 areas to accelerate FTTP investment while continuing to meet other consumer interests in line with its primary duty to protect consumers. This submission first considers the purpose and appropriate structure of future regulation, and then describes and assesses TalkTalk's proposal for adaptive regulation.

6.1 Purpose and structure of regulation

6.2 Given the legitimate desire to accelerate FTTP investment the two key aims of regulation should be to provide incentives for FTTP investment and to ensure that where BT holds SMP its market power is appropriately constrained. These two purposes, combined with the likely significant changes in competitive conditions over the control period, mean it is vital that regulation across the UK is adapted to the differing potential for FTTP investment and changing competitive conditions in different locations and at different points in time.

6.3 Ofcom has recognised this, and its proposed market analysis and remedies attempt to tailor regulation to differing competitive conditions. In its July 2018 statement Ofcom's highlighted the approach that it would take – "*We will vary our approach depending on the intensity of network competition in different areas*" and "*We will also tailor our regulation in different geographic areas to reflect the local competitive landscape*"[32]. It is right that Ofcom differentiates and tailors regulation to differing levels of competition in this way.

6.4 In light of this, in this consultation Ofcom has proposed three geographic 'markets'[33] with different remedies in each. Though this is a departure from the approach in WLA markets today where the same regulation applies UK wide[34], Ofcom has imposed geographically differentiated regulation for many years in the BCMR and WBA[35]. Ofcom's proposed approach is summarised in the table below.

[32] Ofcom (2018), *Regulatory certainty to support investment in full-fibre broadband: Ofcom's approach to future regulation*, July, at page 4 and §2.18

[33] In practice the geographic markets that Ofcom define are not separate markets in the economic sense since, for instance, they do not have the same number of operators across all of them, and there is neither supply- nor demand-side substitution across them which leads to similar competition constraints.

[34] Excluding Hull

[35] In BCMR CISBO market there are already three different degrees of regulation – no SMP and no regulation in CLA, and different regulation in London Periphery and rest of UK. In WBA there are now two markets – market A where BT does not hold SMP and market B where BT holds SMP and there is some regulation. Previously there were three different markets and degrees of regulation.

Table 6.1: Ofcom's approach to tailoring regulation

	Characteristics	Key regulation
Category 1 ('competitive')	BT and two rival networks and BT does not have SMP	No regulation
Category 2 ('potentially competitive')	Ofcom claims there is potential altnet investment. It effectively includes all areas except those in category 1 and category 3	Prices significantly above cost
Category 3 ('non-competitive')	Ofcom claims that no altnet investment is expected at any point in time	Prices at BT cost plus RAB mark-up

6.5 Notably category 2 includes areas with very diverse competitive conditions, including both areas where there is BT plus two rival networks but BT still holds SMP; and areas where there is only BT in 2021 and an additional network is not likely at any point in the next control period.

6.6 Ofcom's proposal is that in each area the same ('static') regulation applies throughout the five year review period irrespective of actual changes in competitive conditions. In an environment where competitive conditions are rapidly and unpredictably changing, such static regulation inevitably results in significant errors of under- and over-regulation (and therefore consumer harm).

6.7 The combination of a very broad and heterogeneous category 2 and static regulation means that Ofcom's proposals impose the same regulation in:

- areas with different competitive conditions; and,
- at different times in an area when the competitive conditions are very different.

6.8 In particular, in many category 2 areas there will be significant under-regulation over the period since weak and inadequate regulation will apply in situations such as[36]:

- at the start of the period in the many areas where there has been no or little FTTP investment;
- throughout the period in the areas where Ofcom forecasts that there is the potential for FTTP build during the 2021-26 period, but in fact no investment occurs before the regulatory period ends; and,
- throughout the period in the areas where no build is expected in this review period.

6.9 This under-regulation will harm consumers, diminish the incentives for Openreach to invest in FTTP due to concerns of cannibalising a profitable FTTC business, undermine the ability of

[36] Under-regulation in this period could be avoided by imposing strong regulation (e.g. cost based prices) throughout the period irrespective of whether entry occurs. However, this may also be harmful since it could result in over-regulation and might reduce altnet FTTP investment in some parts of the UK.

CPs to sponsor market entry from altnets, and make no positive impact on the economics of and incentives for altnet investment.

6.10 Ofcom's consultation hardly acknowledges the potential problems resulting from its proposals, let alone quantify them or discuss how they could be reduced or avoided. Ofcom has not addressed why it is in consumers' interests to adopt weak regulation many years in advance of altnet FTTP investment occurring.

6.11 It is vital, if Ofcom is to meet its objectives to promote FTTP investment and protect consumer interests, that it ensures that regulation is adequately tailored to changing competitive conditions to avoid both under- and over-regulation. This section discusses approaches to regulation that could better tailor regulation to rapidly and unpredictably changing competitive conditions and so reduce errors and harm.

6.12 One option to reduce the level of error is by taking a more granular approach such as:

- more geographic categories, better reflecting the different current and future levels of competition; and
- shorter review periods and/or mid period reviews to allow Ofcom to adjust regulation to reflect changes in competitive conditions.

6.13 A more granular approach would reduce errors by allowing regulation to better reflect the particular competitive circumstances, as they differ between geographies and across time[37]. It would also reduce inevitable errors due to incorrect forecasts.

6.14 Another alternative regulatory structure would be to impose regulation that dynamically adapts to reflect actual prevailing competitive conditions over the period of the market review, based on a trigger. We refer to this as 'adaptive regulation', and discuss it below.

6.2 Adaptive regulation

6.15 This section discusses adaptive regulation. It covers, in order, the overall approach, how it might be designed and finally how it performs in achieving Ofcom's objectives.

6.16 In summary, Ofcom has the powers to impose adaptive regulation and an approach can be designed that better meets each of Ofcom's four objectives than Ofcom's proposals: more altnet FTTP investment; more BT FTTP investment; lower consumer prices; and, more effective competition.

6.17 TalkTalk has proposed the broad parameters of an adaptive regulation approach in this section. At the very least, we believe we have established a credible proof-of-concept for the approach, and urge Ofcom to conduct a thorough comparison of how a system of adaptive regulation would compare to the proposed static model. Before doing so, Ofcom should of course conduct its own detailed modelling so that it is appropriately calibrated to yield the greatest possible net consumer benefits.

[37] In any case, Ofcom is legally required to adopt more geographic categories – as pointed out in TalkTalk's response to the market definition consultation, its current proposed approach is unlawful since its proposed categories are not "*sufficiently homogeneous*".

6.2.1 *Overall approach*

6.18 An example of adaptive regulation that could be suitable in the Access Review in category 2 areas is outlined below. This example is in an area (i.e. postcode sector) where at the start of the market review period (2021) only BT has network present; it sets out what would happen to the wholesale charge control in the case that an altnet builds an FTTP network during the next control period.

Table 6.2: Example of adaptive regulation

	Pre-trigger	Post-trigger
Altnet coverage of premises in postcode sector	<70%	>70%
Wholesale charge control type (for MPF and GEA)	Price cap	Price floor
Price level	BT cost	REO-based cost

6.19 Essentially when an altnet's FTTP coverage in a postcode sector reaches the trigger of (say) 70% of premises passed, then regulation switches from a price cap at BT's costs to a price floor (based on the REO cost level). Such a change in regulation would be mechanistic and based solely on the extent of altnet network coverage in that postcode sector.

6.20 The change in charge control mechanism from a price cap to a price floor is important. Once the trigger is reached then, by definition, the level of competitive constraint on BT will increase such that BT *might* not increase its prices to the higher cap given its incentive to compete strongly against the new entrant and deter future entry.[38] On the other hand, a price floor also gives certainty to altnets that after their entry the price will definitely be higher, enabling them to build higher prices into their financial modelling and achieve greater certainty over returns.

6.21 The benefit of this form of regulation is that the regulation adapts to the actual competitive conditions rather than imposing the same regulation throughout the period irrespective of actual build. In particular:

- higher prices occur post-investment when they are beneficial in allowing higher returns to altnet FTTP investment and in a situation where there is some competitive constraint on BT.
- the approach avoids higher prices pre-investment, when CPs have no alternative but to purchase from BT and consumers are harmed through higher prices and weakened competition. Higher pre-investment prices also reduce altnet FTTP investment.
- this approach will also result in stronger FTTP investment incentives for BT, by increasing the FTTC/FTTP price gap and raising the incremental profitability of investing in FTTP.

[38] Effectively, given BT's ubiquitous network, it faces a repeated game across the UK, and there can be reputational benefits from charging a low price to deter entry in other geographic areas.

6.22 We consider that an adaptive regulation approach such as described above is legally feasible, and can be designed to be practical and effective in meeting Ofcom's objectives. We discuss this below.

6.2.2 *Legal feasibility*

6.23 We consider that Ofcom has the legal powers to impose both adaptive regulation, whereby regulation is automatically changed in response to a metric being reached, and a price floor obligation.

6.24 The Communications Act 2003 (CA03) provides a broad discretion to Ofcom – for example at 87(1): Ofcom shall "… *set such SMP conditions authorised by this section as they consider it appropriate to apply …*". We consider, as we describe in this submission, that this adaptive regulation model is appropriate and consistent with its principal duty to "*to further the interests of consumers in relevant markets, where appropriate by promoting competition*" [CA03 s3(1)(b)] and the need for conditions to take account of "*the need to secure effective competition (including, where it appears to OFCOM to be appropriate, economically efficient infrastructure based competition) in the long term*" [CA03 s87(4)(d)]. Further, there is nothing in either UK law or EU law that expressly prevents the imposition of adaptive regulation or a price floor.

6.25 Appeal rights apply to a 'decision' by Ofcom (CA03 s192). The setting of an SMP Condition (which could contain the provision to change regulation in response to a metric being reached) would be subject to an appeal. However, the mechanical and objective application of that SMP Condition to change regulation would not in our view constitute an appealable decision.

6.26 We also note that there is various precedent that supports that adaptive regulation and price floors are legally feasible:

- the use of CPI–X price caps are a form of adaptive regulation since the maximum allowable price change in a period adjusts each year in response to an external metric (the CPI inflation measure). The price cap set in each year is not appealable (only the setting of the original SMP Condition);
- Ofcom has imposed 'cost orientation' conditions on BT that include a price floor i.e. that it should not price below DLRIC costs;
- the effect of Ofcom's proposed price cap combined with a uniform price obligation across a large area has the effect of creating a price floor;
- Ofcom has considered applying price floors before (for instance in WLA18[39]) and raised no concerns regarding their legal powers to do so.

6.2.3 *Design of adaptive regulation model*

6.27 Below we discuss how adaptive regulation might be designed and implemented in this case to best meet Ofcom's objectives. Inevitably, given that TalkTalk does not have all of the data

[39] WLA18 December 2017 Consultation §11.129

which are available to Ofcom, the precise design of the model will need to be refined, on the basis of detailed analysis. However, this section sets out TalkTalk's current conception of what the approach might look like, given data available to us at this point in time.

6.2.3.1 *The trigger metric and level*

6.28 An important element of adaptive regulation is the design of the trigger—both the metric used and the threshold for a change in regulation.

6.29 There are a number of factors that should affect the choice and level of the metric:

- the trigger should be based on a point at which the new network will likely impose a material competitive constraint on BT within a short period of time;[40]
- the trigger must be objectively assessed, which is important to ensure predictability and certainty for all market participants and to minimise the chance that the application of the trigger itself becomes an appealable decision;
- it should be based on reliable and up to date data that can be easily collected by Ofcom; and,
- whether and when the trigger will be passed should be reasonably predictable to market participants.

6.30 Consistent with these, we consider that there are a number of possible metrics for the trigger including:

- the proportion of premises passed by an altnet network in the postcode sector;[41]
- the proportion of premises marketed to by the altnet (or its partners) in the postcode sector; or,
- the market share of premises served by altnets in the postcode sector.

6.31 Though homes marketed and market share are better indicators of the level of constraint on BT's prices, these metrics have the disadvantage that they cannot be so objectively, reliably or easily measured and are not as predictable. Given this, in our view the trigger should be based on the proportion of premises passed by an altnet network.

6.32 Using a metric of the proportion of premises passed in each postcode sector would not impose a significant administrative burden on Ofcom in terms of data collection. Data on network coverage is regularly collected by Ofcom (indeed Ofcom gathered and used this data to identify the number of networks in each postcode sector in its geographic market analysis). This could be supplemented by other *ad hoc* updates[42]. Ofcom could collect this

[40] This is not the same as saying that the new network, on its own, will be sufficient to undermine BT's SMP.

[41] Or other geographic unit adopted by Ofcom during its market definition process. Postcode based areas would have the advantage that the number of premises in the postcode should be easily identifiable based on Royal Mail data.

[42] An altnet would have a natural incentive to provide up to date coverage information in order to enjoy relaxed regulation.

data, which is not difficult for network providers to collect, quarterly as part of a standard request to network providers.

6.33 In order to incentivise FTTP investment, rather than other types of investment which offer fewer benefits to consumers (such as FTTC or DOCSIS investment), and which do not fulfil Government's strategy of ensuring all UK consumers have access to FTTP broadband, Ofcom should only treat the trigger condition as having been fulfilled when there is a new FTTP network which exceeds the trigger threshold. Other network technologies should not be taken into account.

6.34 In deciding the particular proportion of premises passed that would act as the trigger threshold there are two countervailing factors[43]:

- a higher level will increase the likelihood that the altnet will provide a material constraint on BT at the point that the relaxation in regulation is triggered; whereas,
- a lower level may increase altnets' FTTP investment incentive, since more revenues will be earned during the period of higher BT prices which will increase returns.

6.35 We consider that there are benefits to the trigger level being set at the same level at the threshold used in the geographic market analysis to determine whether a network is present. Having the same level would provide consistency in that an area that was BT+0 and had entry by an altnet in one review period would automatically be a BT+1 area in the next market review. Ofcom's assumption of a 65% threshold is not appropriate, and is not grounded in evidence. For the purposes of this submission we have used a figure of 70% for threshold for determining whether a network is present and accordingly we use 70% for the trigger. Ofcom should determine the actual threshold and trigger by appropriate economic modelling.

6.2.3.2 *Process*

6.36 Below we discuss the process for gathering relevant data and the timing of change in regulation. The process could work as follows:

- Ofcom collects six monthly data on the locations (by postcode sector) of premises passed by each network builder (under s135 powers);
- Ofcom processes these data[44] and publishes a list of areas which have met the threshold and where regulation will be relaxed;
- regulation is then automatically changed around 2 months after this publication, allowing time for Openreach to inform its customers of price rises and alter its wholesale prices.

[43] Neither of these effects is likely to be linear. The change in constraint from moving from 50 to 60% of homes passed is likely to be considerably greater than the change in constraint from moving from 90 to 100% of homes passed. On the other hand, the decrease in investment incentives is likely to be much greater when moving from a 90% to a 100% threshold than when moving from a 50% to a 60% threshold.

[44] There would be no judgement required in this process.

6.37 This process will lead to a slight lag between the altnet reaching the 70% trigger threshold and regulation being amended and prices increasing of about 4-9 months[45]. This will not materially impact the returns from constructing a new FTTP network, which have an economic lifetime measured in decades, since the short lag will come at a time when the new network will have a low customer base, and so the lost revenues from a slight delay in relaxation of regulation will likely be small.

6.2.3.3 *Level of price floor (post-trigger)*

6.38 The level of the price floor for FTTC 40/10, after the entry of an FTTP altnet network, should be set at a level that increases the returns of altnet FTTP investment sufficiently to make efficient altnet investment viable. Ofcom describe this concept as allowing sufficient '*headroom*' for an entrant, which is likely to have a higher cost base than Openreach, to profitably enter the market.

6.39 This is essentially an REO cost level (potentially with some adjustments). It is a concept which is commonly used in regulatory economics. Indeed, it appears from the consultation (for example §2.14) and from TalkTalk's discussions with Ofcom that Ofcom intended a CPI+0% cap to reflect the REO cost – see §5.95 above. Further, Ofcom has suggested that it has estimated the REO cost already, but has chosen not to publish any of this analysis.

6.40 The REO cost level is the level at which an entrant, with the lowest cost base achievable by an entrant, will be able to enter and earn a normal rate of return. Importantly, in markets where there are economies of scale, this means that the costs of the REO operator will be usually above those of the incumbent. On the other hand, a new entrant may benefit from technological progress since the incumbent built its fixed assets, and to the extent that technological progress leads to lower costs, this will reduce the REO benchmark and offset some of the disadvantage caused by loss of economies of scale.

6.41 As well as incentivising efficient entry using an REO approach has a number of other benefits:

- Charges at an REO level would provide appropriate and efficient incentives for access seekers to choose between BT's network and altnets' networks, whereas charges above the REO level would provide an artificial advantage to altnets compared to BT, distorting network choices.
- Using an REO price would avoid entry by inefficient altnets and avoid consumers potentially paying prices higher than needed to incentivise altnets to enter.
- Using an REO cost would also aid regulatory stability and certainty, further supporting investment, by adopting a concept which is well understood by firms operating in the broadband sector.
- The adoption of an REO benchmark for any charge control set in order to permit entry also has the beneficial feature that if DPA is effective in lowering the cost of

[45] The shortest period of 4 months would be if (say) the trigger is reached in June, Ofcom collects H1 data in July, Ofcom publishes its report in August, and then regulation changes in October. The longest period of 9 months would be if the trigger is reached in January, Ofcom collects H1 data in July, Ofcom publishes its report in August, and regulation changes in October.

network build, the REO cost will move towards the EEO cost. At all points in time the REO price will, by definition, be sufficiently high to permit entry, but it will also minimise the short run cost to consumers, from higher prices, required to permit entry.

6.42 The level of MPF and FTTC 40/10 price caps should be lower than the central estimate of the REO cost (which is for an FTTP network). According to Ofcom (§5.19), FTTC and FTTP are not comparable products since the benefits of an FTTC product are lower than a FTTP product (of the same headline speed) since the FTTC product has less stable speeds, more faults, and results in higher costs to serve for ISPs. To reflect this, it is appropriate that the FTTC price is lower than the FTTP REO cost, with the difference being the sum of consumers' additional willingness to pay for FTTP and providers' lower cost to serve using FTTP. This effect is the corollary of Ofcom's proposal that BT should be able to charge for the FTTP 40/10 protection product at a premium to FTTC 40/10 – the adjustment to derive the FTTC prices from the REO FTTP price should be consistent with the 'mark-up' Ofcom proposed between FTTP 40/10 and FTTC 40/10.

6.43 There should not be a single REO cost; rather it will vary depending on the housing density in an area, and so per premise build costs, and on the starting number of networks (which affects market shares which can be achieved by an efficient entrant). To reflect this there should be a specific REO cost derived in (at least) each of three areas:

- initially BT+0 areas;
- initially BT+1 areas; and,
- initially BT+2 areas.

6.44 The REO cost used in each area should reflect that in practice and due to capacity constraints, altnets are likely to focus their initial build on the lowest cost parts within each area. If Ofcom assesses that capacity for altnets to build FTTP is (say) 40% of UK premises during the period of the next charge control, then it would be appropriate for the REO cost chosen to be the cost of the 40th percentile (on average) in each of the three (or more) areas.

6.45 When setting a charge control based on REO costs, Ofcom should conduct sufficient, and sufficiently detailed, analysis in order to estimate REO costs within a tight range. To the extent it can, given commercial confidentiality concerns, Ofcom should publish and consult on its REO model and the data populating it.

6.2.3.4 *Possible price cap post-trigger*

6.46 In addition to a price floor it may be appropriate post-trigger to have a price cap some way above the price floor in order to protect consumers' interests. Depending on the level of competition after entry, the trigger level and the geographic unit used, it may be possible for BT to exploit market power through excessive pricing in two ways:

- By raising prices across the whole postcode sector. As penetration of customers on the altnet FTTP network rises, an increasing proportion of Openreach's customers may be outside the footprint of the altnet FTTP networks. As Openreach's customers

are increasingly in areas with little or no competition, its incentives will shift towards increasing prices across the postcode sector as a whole.[46] This may become self-reinforcing, as incentives on Openreach to increase prices lead to further loss of what little Openreach demand remains in competed areas, then further increasing the incentives on BT to raise prices. Although this process may take a number of years, for purposes of regulatory certainty and consistency it would be better for Ofcom to now set a regulatory structure which is sustainable over time. Since the price-cap will only bite if BT adopts such a strategy, implementing it early will impose no meaningful costs.

- By price discriminating within the postcode sector by raising prices above the floor only for those premises where there is little or no competition

6.47 This risk of excessive pricing post-trigger would be greatest in BT+0 areas that experience entry by an altnet since in a market with only two players BT's market power is likely to remain strong.

6.48 Both of these concerns could be addressed through a price cap. This could be calibrated simply as the price floor level plus a margin of say 10%. If the altnet FTTP operator is imposing a meaningful competitive constraint on BT, then this price cap will never bind, as BT would not wish to set a price in excess of the price floor + 10%. The extent to which BT prices at the floor, rather than the cap, will be informative as to how strong a competitive constraint BT faces. If a cap (at a small margin above the floor) is imposed, then we consider that there is no need for a uniform pricing obligation. If a cap is not imposed, then a uniform pricing obligation will be necessary to prevent harmful discrimination. We consider that a cap is a better mechanism than a uniform pricing obligation since it can address both methods by which BT might exploit its market power, whereas a uniform pricing obligation does not address the first method for BT exploiting its market power.

6.2.3.5 *Level of price cap (pre-trigger)*

6.49 As set out in section 6.3.1.1 below, prior to launch of a new altnet FTTP network there is no benefit in setting prices in excess of BT's costs.[47]

6.50 Therefore, price caps before entry by altnet FTTP services should be set as low as possible whilst allowing BT to recover its efficient costs of investment, which will promote altnet and BT investment and reduce retail prices. This implies that the welfare maximising approach is to set wholesale prices at FAC without any HON adjustment.[48] The HON adjustment will no longer be required in order to incentivise entry as the incentive for altnets to invest in FTTP

[46] For example, assume that before altnet investment a particular area is BT+1, and the FTTP network covers precisely 70% of premises in an area. Initially, BT's pricing incentives will be based on 70% of its customer base being subject to competition. However, if the altnet FTTP network wins a 50% market share, then only 54% of customers will be subject to competition from the altnet provider (= 70%*50% / 100%-(70%/50%)). This may significantly impact BT's pricing incentives.

[47] The only exception to this would be if there was a material signalling effect; see §6.69 below for why the signalling effect in this instance will be immaterial.

[48] The HON, or hypothetical ongoing network, adjustment is an uplift to price caps which has historically been applied to BT to reflect the heavily depreciated nature of its network and encourage entry.

will instead be accomplished through adaptive regulation. Not including a HON adjustment is consistent with Ofcom's price proposal in category 3 areas (where it is expecting no altnet FTTP investment).

6.51 Arguably this approach (no HON adjustment) should apply in all areas where BT has SMP, irrespective of the number of other networks then present. However, there may be a case for allowing higher prices in areas where, at the time of the new charge control, there are other existing networks in addition to BT. This is because these investments were made on the basis of current pricing policy where prices were set at FAC with a HON adjustment, and there should be consistency of regulation over time to ensure that existing investments are not stranded and to enhance certainty. This would imply that, prior to launch of a new FTTP network, prices in BT+0 areas should be FAC without HON and in other areas (e.g. BT+1, BT+2) FAC plus HON.

6.52 However, in BT+2 areas we consider that it may be appropriate to apply REO based prices from the outset since those areas already have the potential to become fully competitive over time without additional investment. Another advantage of this would be that the price in BT+2 areas will be the same as in BT+1 areas where entry occurs.

6.53 Based on the explanation above our initial views on the appropriate price levels, depending upon initial number of networks and whether the trigger is met are summarised below:

Table 6.3: Price levels

Starting number of networks	Price cap (pre-trigger)	Price floor (post-trigger)
BT only	FAC	REO based
BT + 1	FAC plus HON	REO based
BT + 2	REO based	– [49]

Note: the FAC/HON/REO costs (and so prices) will be different in each area

6.2.3.6 *Geographic discounts*

6.54 Under TalkTalk's proposed approach, there would be no need to prohibit BT from engaging in geographic discounting via a uniform pricing obligation. This differs from Ofcom's proposals, where there is a specific prohibition of geographic discounting.

6.55 Pre-trigger, geographic discounting restrictions are not needed because of the effect of adaptive regulation. The reason, under Ofcom's approach, to prevent geographic discounts is to prevent BT deterring actual or potential altnet FTTP investment. However, potential investors will know that prices will rise at least to the price floor once they have entered the

[49] This situation is highly unlikely since it implies (say) that CityFibre and FibreNation both cover more than 70% (under TalkTalk's indicative trigger) of a postcode where BT and Virgin are already present. TalkTalk's view is that altnet FTTP providers are unlikely to overbuild one another.

market; this means that the pre-entry price and whether there are discounts will have no impact on altnet FTTP investment returns or incentives. [50] There is consequently no need for a restriction on geographic discounting pre-trigger.

6.56 Post-trigger, there will also be no need for restrictions on geographic discounting provided that a price cap (at a small margin above the price floor) is imposed. The price floor will prevent BT from setting predatory prices against entrants, while a price cap will prevent BT raising prices (either across some or all premises in the postcode sector) to earn supernormal profits.

6.2.3.7 *Regulation of FTTC 80/20 prices*

6.57 Another issue is whether it is sufficient to charge control FTTC 40/10 and its ancillary products, or whether there is a need to impose a charge control on higher speed FTTC products (and perhaps in the longer term, G.fast products).

6.58 Once again, TalkTalk's proposal on this issue aims to ensure regulatory consistency, that there is no stranding of existing investments, and that there are incentives for new FTTP investment, while protecting consumers until such a time as there has been competitive investment.

6.59 As such, prior to new FTTP investment:

- in BT+0 areas, where there is no concern regarding stranding existing investment or changing regulatory approach, 80/20 GEA prices should be regulated at cost without any HON adjustment[51];
- in BT+1 and BT+2 areas, there would be no regulation of 80/20 GEA prices (as now under WLA18).

6.60 Following the trigger being reached in BT+0 areas, price regulation of 80/20 GEA should be lifted. However, Ofcom must recognise that the need to regulate FTTC 80/20 will increase over time as the constraint from FTTC 40/10 weakens. This is consistent with Ofcom's proposals in category 3 areas.

6.2.3.8 *Other aspects of regulation*

6.61 There are a number of other elements of regulation which are imposed by Ofcom, including:

- equivalence obligations;
- network access obligations;
- rules around price publication;
- quality of service requirements

[50] In actuality, even with full credibility there will be a small effect, as there will be a 4-6 month period before the price floor comes into effect. However, in the context of the lifetime of an FTTP network this is likely to have a negligible impact on incentives.

[51] or any other approach which would inflate the charge control above the true level of BT's costs.

6.62 Under TalkTalk's proposal, these would remain the same pre- and post-trigger. These elements do not significantly change the competitive constraint imposed on new FTTP networks, with the sole exception of quality of service obligations, which can be reflected in the REO price floor and cap imposed by Ofcom and therefore taken into account. Other advantages of not changing these regulatory obligations are that this approach is simpler, does not create the need for transition measures and will aid regulatory certainty.

6.3 Effectiveness of adaptive regulation

6.63 Below we discuss whether TalkTalk's adaptive regulation proposal meets Ofcom's objectives. First, we discuss the four 'core' objectives Ofcom set out in its consultation and then we consider other issues that are relevant.

6.3.1 *Altnet FTTP investment*

6.64 Adaptive regulation is likely to result in greater altnet FTTP investment than Ofcom's proposals for two main reasons.

- First, lower pre-entry prices will allow non-BT ISPs to secure higher market shares and these will increase the returns on altnet FTTP investment which rely on a large non-BT customer base to generate early revenues.
- Second, a price floor will also engender greater certainty that BT will not predate than a price ceiling which BT could price below (whilst complying with a uniform price obligation).

6.65 The impact of post-entry FTTC prices on FTTP prices and so investment incentives may be greater or less than under Ofcom's proposals depending on whether CPI+0% FTTC prices are below or above FTTC price caps based on REO. However, assuming the CPI+0% and REO price levels are different, using REO based FTTC prices is superior to using CPI+0%:

- if CPI+0% prices are above REO based prices then CPI+0% prices will result in inefficient entry and excessive prices to consumers;
- if CPI+0% prices are below REO based prices then they will not appropriately incentivise altnet FTTP investment;
- furthermore, since REO based prices are based on well understood principles they will engender confidence and regulatory certainty, supporting efficient investment in FTTP.

6.66 As well as these two factors, a number of other issues that could affect altnet investment should be considered:

- whether pre-entry prices will affect post-entry prices;
- whether investors can rely on Ofcom commitment to change regulation post-entry;
- impact of adaptive regulation on incentives to commit to risk-sharing arrangements;
- the impact of adaptive regulation on overall certainty.

6.3.1.1 *Whether pre-entry prices affect post-entry price expectations*

6.67 In classical economic models, there should be no impact on investment of market prices prior to investment taking place. This is because rational firms will take account of the changed market conditions caused by their entry when deciding whether to enter, and any other changes in demand which they expect between the time of investment decisions being made and the time when they will commence selling.

6.68 It should be no surprise that firms will operate in that way. To do otherwise – to ignore predictable changes in demand or supply conditions – would reduce firms' profitability and therefore engage in what economists sometimes call '*myopic expectations*'. Profit-maximising firms should be assumed to use all information publicly available at the time that they are making investment decisions, in order to attempt to maximise returns.

6.69 The question is therefore whether there are any reasons why the FTTP market should differ from other markets, and that prices in advance of entry may affect post-entry prices. There are several potential reasons that need to be considered:

- *that there is some form of hysteresis[52] effect*—hysteresis usually occurs when a specific economic variable has time lag effects, so that the level of that variable in one period influences the level of that variable in future periods, even if other underlying factors change. This typically happens when there are feedback effects.

  There are no obvious hysteresis effects in broadband pricing in the UK. Providers (unless constrained by SMP regulation) remain free to change both wholesale and retail prices at any time, with only a minimal notice period[53]. Ofcom has not presented any evidence that there would be expected to be hysteresis effects in this market. As such, hysteresis appears unlikely to mean that prices before entry effect post-entry prices or profitability.

- *that there is some form of signalling effect*—a second possibility is that the pre-entry level of prices in some manner signal to investors what post-entry prices will be. However, this would require investors to be naive, and to fail to understand the manner in which markets and regulation work. Firms building FTTP networks will be sophisticated corporate organisations, with regulatory and commercial staff well able to understand Ofcom's regulatory decisions, and to factor it into their business plans. As such, if Ofcom announces a future regulatory price change (whether unconditional or under certain conditions), this will be taken into account by altnets as for other future variables. It is unclear that there will be any signalling benefit from changing prices in advance of entry, rather than changes prices at the time of entry, as long as investors can be sufficiently certain that prices will indeed change when entry occurs.

[52] Hysteresis, also sometimes called path dependency, is a process whereby the level of an economic variable depends upon its history, rather than just present circumstances. The classic example is unemployment, where high unemployment does not dissipate even if there is strong aggregate demand soon afterward, because unemployed workers' skills decay over time and they become less productive and able to fill empty roles. As such, wage inflation and unemployment can coexist with one another.

[53] And subject to the right of retail customers to leave providers within what would otherwise be their contractual periods.

- *that prices are sticky upwards*—the final reason why price controls may need to be relaxed in advance of entry is that prices are sticky. This is a common feature of labour markets, where the price of labour (i.e. wages) is commonly thought to be sticky downwards, due to workers resisting price cuts and, in many countries, labour laws restricting the ability to cut wages. However, it would be very unusual to find that prices are sticky upwards, and that, even when freed from regulatory constraints, they would not rise to the profit-maximising level. In reality, BT would, once freed from regulation, rapidly be able to increase prices to whatever level it chose.

6.70 Overall, therefore, prices in advance of entry are unlikely to be important to investors, as long as Ofcom is able to credibly signal to altnet FTTP investors that there will be higher prices in broadband markets following altnet entry.

6.3.1.2 *Whether investors can rely on Ofcom commitment to change regulation post-entry*

6.71 In order for altnets to have the maximum possible incentives to invest in FTTP networks, it will be important that they can rely on the commitment that prices will rise following their entry into the market. This section considers the manner in which Ofcom can best ensure that there is a high level of certainty for actual and potential investors.

6.72 Adaptive regulation can and should be included in SMP obligations which are legally enforceable. This by itself will provide a high degree of certainty that future regulation will amend in the way specified and that BT will comply with the obligations. This is similar to the way that there is certainty that the relevant CPI metric will be used in deriving the allowable price rise in each year.

6.73 There are several further measures which Ofcom should take in order to maximise the certainty which it provides:

- *trigger mechanisms for the change should be simple and objective*. This will ensure that they are easily understood by investors and other market participants; that well-informed participants can predict when the thresholds will be met; and that all firms are able to see that regulation has been relaxed at the appropriate time, in line with Ofcom's market review thresholds.
- *the decision to change regulation in an area should not be appealable*. By setting a regulatory structure where a change in regulation is automatic following the achievement of an objective trigger, Ofcom will be able to provide certainty over the decision to relax regulation in an area, with no further input required from Ofcom beyond ascertaining that the criteria are fulfilled, and no subjective elements. This will mean that there is no realistic prospect of an appeal against the change of regulation in an area, further increasing confidence by altnets that the post-entry price will be in line the SMP obligations Ofcom sets in the market review.
- *ensuring reviews are regular and comprehensive*. It will be important that Ofcom does not delay its reviews of the extent of altnet build in different postcode sectors due to appeals or litigation by BT. Ofcom should prioritise such reviews, and set out in its market review conclusions that it will only suspend or delay them if and when specifically ordered to do so by the CAT or other competent court.

6.74 None of these elements involve Ofcom fettering its own discretion. Ofcom would instead take all of the relevant decisions at the time of its review, and after then would carry out the outcomes of that review.

6.3.1.3 *Impact of adaptive regulation on incentives to commit to risk-sharing arrangements*

6.75 Altnets investing in FTTP networks typically secure risk-sharing or anchor agreements with one or more ISPs prior to committing to an investment in order to reduce their investment risk (examples of such agreements include those between CityFibre and Vodafone, and between FibreNation and TalkTalk). These agreements reduce risk and increase investment incentives. Thus, it is necessary to consider how different approaches to regulation (such as adaptive regulation) might affect the incentive of ISPs and altnets to commit to such deals.

6.76 A potential concern in this regard is that this adaptive regulation proposal might lead to a hold up problem, where ISPs' incentives to enter into risk-sharing agreements are weakened because by doing so, they can reduce the prospect that there will be entry, and thus can remain on BT's network at lower regulated MPF/FTTC 40/10 prices.

6.77 However, this is unlikely to happen in practice:

- there have already been a number of risk-sharing agreements entered into that will apply nationwide.
- it is unlikely that altnets will require all ISPs to sign up before investing, as seen in the underwriting of CityFibre's investment solely by Vodafone. As such, no single ISP will be able to hold up investment. By refusing risk-sharing proposals which would be profitable, an ISP runs a serious risk that another ISP will secure a risk-sharing arrangement and FTTP network build will occur in any case, leaving the obstructive ISP with worse commercial terms than the one with an agreement in place.
- indeed, altnets may invest without any ISP risk-sharing agreement in place (as Gigaclear and Hyperoptic have historically done). Therefore, even were there to be some tacit agreement between multiple ISPs to not enter risk-sharing agreements, there is no certainty that altnet FTTP rollout would not occur.
- ISPs who do not sign a risk-sharing arrangement with an altnet will not be able to rely on securing a risk-sharing arrangement with another altnet which overbuilds the first altnet. Altnets are highly unlikely to overbuild given that investment returns depend on scale, as has been shown by altnet behaviour to date.
- more generally, CPs have strong commercial incentives to finalise commercial deals well in advance of FTTP build so they can start planning customer migration and avoid higher BT charges once regulation is relaxed; and,
- any new risk-sharing agreement ISPs are likely to sign will be 'nationwide' agreements with altnets that, once agreed, will provide risk-sharing in all areas on the UK where the altnet builds.

6.78 Therefore, in this case, we think the evidence demonstrates that adaptive regulation would not create a hold up problem.

6.3.1.4 *Overall regulatory certainty*

6.79 One of the factors that encourages investment (by both altnets and BT) is regulatory certainty. Ofcom's current proposals suffer from being a radical change in regulation without any evidence base to justify it.

6.80 Adaptive regulation amounts to more of an evolution of the current regulatory model than Ofcom's approach. In particular, under adaptive regulation the current regulatory model only changes if and when there is evidence that competition has changed. The adaptive regulation approach will increase regulatory certainty and, consequently, supports altnet investment.

6.3.2 *TalkTalk's proposals will lead to increased BT investment in FTTP*

6.81 TalkTalk considers that its proposals will lead to meaningfully greater investment in FTTP by BT than Ofcom's proposals. There are two main reasons for this conclusion:

- under TalkTalk's proposals there will be a greater gap in prices between FTTC 40/10 and FTTP pre-entry. This will increase the incentives for BT to invest in FTTP since incremental returns on FTTP investment will be higher.
- under TalkTalk's proposals there will be a greater level of altnet FTTP investment than under Ofcom's proposals. Assuming that one of BT's goals is to deter entry by altnet FTTP operators, greater altnet FTTP build will provide BT with greater urgency to build out its own FTTP network and therefore reduce the attractiveness of altnet entry in key areas of the UK. This will tend to lead to BT both investing earlier in FTTP, and ending up with a larger FTTP network at the end of the regulatory period.

6.82 In addition, the high levels of certainty provided by TalkTalk's proposals, to all market participants, will tend to increase the level of investment by BT.

6.83 There appear to be no countervailing factors to these which would tend to imply that levels of investment by BT might be higher under Ofcom's proposals than under TalkTalk's proposals. Overall, therefore, TalkTalk's proposals will lead to an increase in the level of BT FTTP investment.

6.3.3 *Adaptive regulation will lead to lower consumer prices than Ofcom's proposal*

6.84 TalkTalk's proposals for adaptive regulation will lead to lower consumer prices than Ofcom's proposed remedies.

6.85 Before entry of altnet FTTP in a postcode sector, prices will be lower since they will be based on BT's costs. Given the relatively competitive retail broadband market (at least before the introduction of Ofcom's proposals), it would be expected that around 70% of any change in wholesale prices would be passed on into retail prices. As such, the lower wholesale prices implied by TalkTalk's proposals would be mainly passed into retail prices, along with the lower retail margins, to lead to overall lower consumer prices.

6.86 After the entry of altnet FTTP in a postcode sector, the wholesale MPF and FTTC 40/10 prices will be set based on REO costs; that is, it is the lowest price consistent with the entry of an efficient altnet FTTP network. MPF/ FTTC 40/10 prices set based on a CPI+0% price cap will

be different to REO based prices, and the impact will either be inefficient altnet FTTP investment and higher retail prices, or less altnet FTTP investment than is desired, albeit possibly with lower retail prices – see §6.65 above.

6.87 TalkTalk's proposals will lead to a more competitive retail broadband market than Ofcom's proposals, implying lower margins at the retail level and therefore, *ceteris paribus*, lower consumer prices.

6.3.4 *Adaptive regulation will lead to more effective downstream competition and greater consumer choice*

6.88 Ofcom's model of pre-emptive deregulation, as set out at section 5.4 above, will lead to higher wholesale prices for CPs using the BT Openreach network, such as TalkTalk, Sky and Vodafone. Also as set out above, this will lead to the market shares of such CPs declining, as BT and Virgin Media– neither of which pay the increased wholesale price– gain market share.

6.89 In contrast, under adaptive regulation non vertically integrated CPs will not see their market shares decline, as they will be protected by regulation before the trigger is reached, and will be protected by competition from the new altnet FTTP network after the trigger is reached.

6.90 Consequently, the adaptive regulation model will lead to a more competitive retail broadband market than Ofcom's proposals. Consumers will benefit from a greater choice of provider and of product. Such increased range and choice is seen as a standard consumer benefit in the PQRS model which prevails in competition economics.[54]

6.91 At the same time, the more competitive downstream market will place greater pressure on BT and Virgin Media to offer a high standard of customer service, compared to Ofcom's model where increases in BT's market share as competing CPs lose share or exit will provide BT with incentives to increase its profits through reduced service standards. This is a further consumer benefit compared to Ofcom's proposals.

6.3.5 *Other issues*

6.92 Below we discuss other factors regarding the effectiveness and appropriateness of adaptive regulation.

6.3.5.1 *Robustness to unexpected market developments*

6.93 The next 10 years are likely to be characterised by unpredictable changes in the market, particularly in the timing and location of altnet and BT FTTP network build. Therefore, any forecast of changes in the market made at this point is likely to be materially inaccurate. Ofcom's chosen regulatory approach must be robust to unexpected changes so that if the market develops in an unexpected way the regulation still protects consumers' interests.

[54] Price Quality Range Service.

6.94 Adaptive regulation is much more robust to unexpected market developments, such as DPA failing or altnets' strategies changing or lower levels of FTT build, than Ofcom's proposals.

6.95 Ofcom's proposals rely on DPA being successful. Ofcom appears rather over-optimistic about the degree of impact of DPA, since it claimed that DPA could reduce costs by 50%.[55] FibreNation estimates that the average cost reduction is likely to be around 4% on average across a build area, taking into account both the reduction for each premises passed using DPA and the proportion of premises for which DPA is likely to be practicable. Ofcom's proposals also rely on an accurate forecast for altnet FTTP roll-out being made years in advance of likely build. This effectively sets a boundary between category 1, category 2 and category 3 areas which holds for the entirety of the charge control period, and implies static regulation within each category throughout the market review period. This approach runs serious risks that events will transpire in a different manner from that expected by Ofcom, and regulation will be inappropriate well before the end of the five year period. Due to its adaptive nature, TalkTalk's proposals do not run the same risk, as regulation will automatically amend to actual market changes.

6.3.5.2 *Consistency of approach between category 2 and category 3 areas*

6.96 Another advantage of TalkTalk's adaptive regulation proposal is that the same regulation can apply to category 2 areas and category 3 areas. This means there is no need for Ofcom to determine whether a particular postcode sector falls in category 2 or category 3, as it can apply the same adaptive regulation approach to both these categories. Such a unified approach has a number of advantages:

- it is simpler and consistent and imposes lesser burdens on Ofcom and stakeholders;
- it avoids ossifying the boundary between category 2 and category 3 areas and deterring viable altnet investment. The placing of a particular postcode sector in category 3 will be a self-fulfilling prophecy; even if an area could be attractive for altnet FTTP investment and competitive at some point in the future, once it is assigned to category 3, that potential investment and competition will be removed, as it will not be commercially viable to compete against a subsidised BT FTTP network. It is premature to ossify areas in this review since it is not yet predictable which areas altnet FTTP build will be viable in, and which are unviable. Ofcom's approach is therefore likely to materially distort investment decisions;
- it reduces the risk of regulation becoming inappropriate due to unexpected developments such as DPA not being used at scale, or there being less altnet FTTP roll-out than anticipated.

6.3.5.3 *Deters exclusionary behaviour by BT*

6.97 Adaptive regulation deters exclusionary behaviour by BT. Ofcom's proposals will tend to create incentives for BT to exclude its rivals through overbuilding, threatening to overbuild, or other strategic behaviour, as by doing so it can retain higher prices, and therefore supernormal profits, throughout the review period without giving up its monopoly position.

[55] https://www.ofcom.org.uk/about-ofcom/latest/media/media-releases/2018/new-rules-boost-full-fibre

In contrast, TalkTalk's proposals mean that provide countervailing incentives for BT to accommodate entry in order to obtain a higher price (through the price floor post-entry being higher than the price cap pre-entry); if it successfully deters entry, it does not gain from higher price caps on MPF and FTTC 40/10 products. This is likely to lessen the level of exclusionary behaviour seen in practice.

6.3.5.4 *Price predictability*

6.98 It is important for all market participants that price levels are reasonably predictable, so they are able to forecast costs levels[56] with reasonable certainty, and therefore are able to plan their commercial strategies.

6.99 TalkTalk's proposal should lead to a high degree of predictability for market participants:

- the pre-trigger wholesale price level is known, as it is set by Ofcom through the market review process;
- the post-trigger wholesale price level is known, as it is also set by Ofcom through the market review process;
- the threshold proportion of premises in an area is known, as it is set by Ofcom in the market review;
- the locations where altnets are building FTTP networks are well known, as they are generally announced in the media well in advance of construction starting.

6.100 The only material area of uncertainty is the precise point in time at which an altnet FTTP network might pass 70% of premises in a postcode sector. This will be known by the altnet which is constructing in an area, but not by other market participants, who will not be aware of the precise number of homes passed.

6.101 However, while other market participants will not be aware of the precise number of homes passed, they are likely to be aware of the broad extent of rollout in each area in advance, through announcements by altnets, a general observation of the physical areas in which digging is occurring, and through council planning and road closure applications for the network build, which necessarily have to be made public. ISPs are also likely to be in regular dialogue with altnets in order to enter into supply agreements. Furthermore, to the extent that altnets use DPA in order to roll out their networks, Openreach will be aware of the number of premises passed using this approach.

6.102 As such, most significant market participants are likely to be reasonably aware 1-2 years in advance of the point at which regulation will be relaxed in a particular area, although they may be incorrect by a few months. Such a level of uncertainty will have a minimal impact on the overall national average price paid by an operator such as TalkTalk or Sky. Consider an operator forecasting the costs in the following year as part of a budget process, say, 6 months before the year start. In that year there may be, at most, 5% of UK premises which reach the trigger. Even if there were large price increases in these areas as a result of the trigger being reached, of perhaps 20%, this would still equate to an overall price increase on a national level of only 1%. The degree of uncertainty is still less than this, as ISP will

[56] Or in Openreach's case, revenue.

rationally expect and be able to forecast some price rises; even if the level of forecast inaccuracy was poor (say +/-20% of UK premises) this level of uncertainty will translate to only +/- 0.2% price uncertainty across the UK as a whole. This is no more than exists for price rises at present given the unpredictability of CPI inflation and its inconsistent correlation with CPs' costs.

6.103 The impact of any uncertainty in BT prices will be further diminished since, once an altnet has rolled out (and BT prices increase) many altnets will in any case purchase from the new entrant and so their costs will not be affected by the BT price. The lag between altnet build occurring and changes in price regulation (which is 4-9 months under the proposals above) will further reduce uncertainty and allow time for more accurate cost forecasts and business planning.

6.104 Consequently, TalkTalk's proposals are unlikely to lead to a meaningfully increased level of pricing uncertainty to that seen at present in the market. Well informed market participants are likely to be able to predict the average price levels which they will be facing to within +/- 0.2% twelve months or more ahead of time. Such low wholesale price uncertainty means that there should be no reason for adaptive regulation to lead to instability in retail prices particularly given wholesale prices typically only account for 30-50% of retail prices, and that not all wholesale price increases will immediately be passed on, in full, to retail prices.

6.3.5.5 *Difficult to game*

6.105 Regulation should ideally be robust to gaming by market participants who may attempt to manipulate the regulation to increase their own profits at the cost of undermining the objectives of the regulation.

6.106 Adaptive regulation cannot profitably be gamed by altnets in a way which harms consumers. In particular altnets could alter their FTTP roll-out in two ways to attempt to game TalkTalk's proposed scheme. The first of these is to build out to fewer premises in an area to avoid the trigger being met in order to avoid relaxed regulation.[57] However, this approach would leave BT with a lower price cap which would harm the altnet's levels of profitability, as well as foregoing rolling out to premises which would in and of themselves generate incremental profits, and therefore would not be a profitable strategy. The second would be for the altnet to build to more premises in order to ensure that it passes the threshold, and lead to the imposition of a price floor on BT. However, although this is a potentially profitable strategy, by ensuring a wider roll-out of altnet FTTP it will deliver some benefits to consumers, and be aligned with Ofcom's strategy of widespread FTTP roll-out.

6.107 Setting prices based on BT costs (pre-trigger) will also reduce the incentive for BT to game cost attribution between category 2 areas and category 3 areas. If category 3 prices are based on BT costs (as proposed by Ofcom and TalkTalk) but category 2 prices are not based on costs it creates a strong incentive to attribute more costs to category 3 areas to raise profits. This incentive is eliminated by TalkTalk's proposals.

[57] Of course, the altnet may build to fewer premises in an area than would be required in order to relax regulation when that altnet does not believe, even when BT faces a price floor following the trigger being reached, that those extra premises would earn incremental profits.

6.4 Adaptive regulation better meets Ofcom's objectives than Ofcom's proposals

6.108 As set out at para 3.1, above, Ofcom set itself four objectives for the remedies proposed in broadband markets. TalkTalk's proposals outperform Ofcom's proposals against these measures:

- *ensuring BT's competitors have appropriate conditions to support their FTTP investments*– adaptive regulation is better at ensuring that BT's competitors are able and incentivised to invest in FTTP. By only increasing prices once there has been investment, adaptive regulation ensures that retail CPs retain scale bases to support altnet FTTP returns. Setting a price floor following the trigger providers greater confidence that BT will be unable to set prices which make altnet FTTP unprofitable, while aligning this floor with the REO level provides correct entry incentives. Conversely, Ofcom's premature deregulation will reduce competing CPs' consumer bases, which will move to Virgin Media and BT; does not propose a price floor; and does not provide any explicit link between the REO price level and the charge control. Adaptive regulation clearly outperforms Ofcom's proposals on this criterion.
- *ensuring BT has appropriate conditions to invest in FTTP*– Ofcom's proposals rely on BT and altnets engaging in investment races, despite Ofcom presenting no evidence that such races will occur. BT's incentives to engage in FTTP investment will also be reduced by the high margins they will be able to earn on their FTTC products, due to lax regulation. In contrast, TalkTalk's proposals remove the high profits on FTTC products, enhancing BT's incentives to invest, and the greater level of altnet FTTP investment under TalkTalk's proposals will increase the threat of losing market share facing BT;
- *protecting consumers against excessive prices and poor quality*– TalkTalk's proposals are far ahead of Ofcom's in this regard. Ofcom's proposals allow BT to earn large supernormal profits on its FTTC product across category 2 areas, without the need for, or indeed threat of, regulation in large parts of the country. In contrast, until there is increased competition, consumers will not pay higher prices under adaptive regulation. Furthermore (as set out in section 9 below), Ofcom has also proposed a quality of service regime which will increasingly fall behind market standards. Ofcom's proposals offer little to protect consumers from excessive prices and poor quality; and,
- *maintaining retail competition based on access to the Openreach network*. Ofcom's proposals will allow such retail competition to diminish, as BT Retail and Virgin Media will not experience cost increases, but CPs such as TalkTalk, Sky and Vodafone will do so. In contrast, TalkTalk's adaptive regulation proposals will not see such a reduction in retail market competition, as price caps will not be set in excess of costs until there is scale FTTP entry, which would enable CPs to shift their customer bases to the new network.

6.109 In light of adaptive regulation outperforming Ofcom's proposals, adaptive regulation should be seriously considered by Ofcom as a package of proposals to be adopted in the forthcoming review period.

6.5 Category 2 areas - other issues

6.110 This section considers a series of other issues which arise from Ofcom's proposals in category 2 areas, but which are not dealt with in the various sections above.

6.5.1 *SoGEA*

6.111 Over the market review period (2021-2026) there is likely to be significant migration to SoGEA. This will be an important shift which will allow BT to remove its e-side copper, close WLR and its PSTN network and close exchanges. For this migration to happen efficiently and with minimal disruption requires ISPs to have clarity of SoGEA prices. Thus, it is critical that Ofcom provide clear guidance in this review regarding how SoGEA prices should be derived, and in particular how they should reflect the cost savings that BT will enjoy as a result of copper removal and exchange closure. Ofcom's current document does not deal with this issue.

6.5.2 *Obligation to provide new network access*

6.112 Ofcom has proposed (§2.11) that BT should not be required to provide new forms of copper network access e.g. new MPF products. New MPF products, particularly around migrations and ceases, are likely to be required to allow CPs to efficiently exit exchanges and migrate to either Openreach FTTx products or FTTP products provided over other networks. Thus, it is critical that Ofcom's proposals do not apply to these type of new products.

6.5.3 *Predatory overbuild*

6.113 The possibility of predatory overbuild by BT is one of the main factors which has the potential to deter altnet FTTP entry, even in areas which would otherwise be profitable. Predatory overbuild occurs when the following set of conditions is fulfilled:

- BT deliberately chooses to build its FTTP network to premises which are already served by an altnet FTTP network; or to premises where altnet build is expected in the near future, and the altnet has already begun to incur costs of building to those premises;
- BT's roll-out is expected to be unprofitable, in that the network is not expected to earn returns equal to or greater than its cost of capital;
- the altnet network which is being overbuilt by BT would, in the absence of overbuild, be expected to earn returns equal to or greater than its cost of capital; and,
- following BT's overbuild, the altnet FTTP network would be expected to earn returns less than its cost of capital.

6.114 Ofcom addresses predatory overbuild (which it terms 'strategic network deployment') at paras 2.35-2.39 of its consultation.

6.115 [✂]

6.116 [✂].[58] [✂].[59]

6.117 [✂]

6.118 There is no realistic prospect that any altnet deliberately overbuilds another altnet. Unlike BT, altnets do not have strategic incentives to overbuild one another; yet (as with FibreNation) they would make substantial losses from trying to compete head-to-head with another FTTP network. They will therefore make efforts to avoid overbuilding one another.[60]

6.119 Ofcom cannot simply ignore predatory overbuild as an issue which will reduce or undermine completely altnet FTTP roll-out, as it attempts to do in its current, seriously inadequate, proposals. Ofcom has nowhere in its proposals set out its expectations of the impact of potential overbuild on the profitability of altnet FTTP development, nor what it would propose in the event that overbuild seriously jeopardised altnet build.

6.120 Ofcom's proposals (para 2.39) on monitoring overbuild by BT are vague, and mainly amount to saying what Ofcom will not do. It should set out in detail the way in which, under the proposed new regulatory regime, it proposes to increase monitoring from the current level in order to deter predatory overbuild by BT.

7 Category 3 areas – MPF/FTTC regulation

7.1 In this section we discuss Ofcom's proposals for regulation of MPF and FTTC 40/10 in category 3 areas. Ofcom's proposals for leased lines in these areas are discussed in section 8.

7.2 Ofcom is proposing a radical change of regulatory approach in category 3 areas, moving to a RAB-based model whereby losses on BT FTTP are subsidised by wholesale prices above cost. Overall, Ofcom's proposals in category 3 areas will cause significant consumer harm. In particular:

- they will not result in significant extra overall FTTP investment across the UK as a whole, since FTTP investment in category 3 areas will crowd out investment in category 2 areas;
- they will deter new commercial altnet FTTP investments (by operators such as Gigaclear and B4RN) in these areas, and expropriate existing ones, by allowing a subsidised BT to compete against commercially funded FTTP networks;
- The scheme will create cross-subsidies from poorer and older demographic groups to younger and richer ones;

[58] [✂]

[59] [✂]

[60] In fact, the situation would be *less* profitable than with BT overbuilding a single altnet FTTP network, as where altnets overbuild one another there would be competition from both another FTTP network and BT's pre-existing FTTC network (and in some instances potentially also Virgin Media). These greater levels of competition would lead to even lower market shares and, hence, margins.

- the proposals will create subsidies between different geographic areas, with those areas with the worst broadband subsidising areas with the best broadband;
- they are highly susceptible to gaming by BT to inflate its profits, harming consumers;
- they will raise consumer prices and weaken retail market competition.

7.3 Further, on the basis of recent precedent in cases such as *Thames Tideway,* the proposals are arguably a form of State Aid to BT, and may therefore need to be notified to the European Commission for approval before they could be put into effect.

7.4 Moreover, the proposals for category 3 areas are unnecessary. The adaptive regulation approach proposed by TalkTalk in category 2 areas could also apply in category 3 areas. This would create a unified system which encourages FTTP investment by BT and altnets and allows Ofcom to wait and see where and how the market develops. If it becomes clear in the future that there is a significant problem in some parts of the UK, Ofcom can then address it in a targeted manner.

7.1 Introduction

7.5 In its consultation Ofcom proposes a model which it refers to as a Regulatory Asset Base (RAB) approach. It describes this as "*a version of the "regulatory asset base" (RAB) approach, a widely-used model in other regulated sectors*" (§3.6). TalkTalk's understanding is that Ofcom's RAB approach has two key features that distinguish it from Ofcom's longstanding approach of setting wholesale prices based on a forecast of BT's costs of those products:

- the price of non-FTTP products (MPF, WLR, FTTC) in category 3 areas will be inflated above cost to cover projected losses on BT's FTTP investments in category 3 areas. This uplift is referred to as the 'RAB mark-up'. This means that BT's FTTP investment in category 3 areas will be effectively subsidised by inflated non-FTTP prices in category 3 areas;
- the RAB mark-up (and so wholesale prices) will be based on *actual* or *outturn* FTTP capex[61] rather than forecast capex, whereas wholesale prices are currently based on forecast capex. This will require a different approach to price setting, such as a 'true-up' in subsequent periods where under- or over-recovery against capex is adjusted for in future periods. Conversely, we understand that the FTTP revenue and opex used to derive the RAB mark-up are based on forecasts (Ofcom is not specific about this though it is implied in Table 3[62])

7.6 Ofcom describe their approach as 'a version of the RAB approach widely-used in other regulated sectors'. This is not a fair representation. We are aware of only one other example where, as is proposed in this case, a RAB approach results in cross-subsidies between different customer groups and different products or where a RAB uplift is applied in a market that is partially competitive. This was the 'system approach' to regulation of

[61] Ofcom is not specific about cost recovery being based on actual capex but we presume this from the fact that Ofcom talk about 'certainty of cost recovery' (§3.16) and that this is a key feature of other RAB models.

[62] "*We would likely allocate a portion of the RAB directly to fibre services in non- competitive areas based on our forecast of how much of the investment BT could recover directly from fibre customers.*"

BAA's airports in the London area, which enabled Stansted to benefit from an explicit subsidy from Heathrow. The system approach was withdrawn by the CAA in 2003, as part of its Q4 review of BAA's airports, on the basis that BAA should be investing on a commercial basis, that if the Government wished to prioritise development at Stansted that it would be free to subsidise this, and that such a cross-subsidy would distort competition against Stansted.[63] In the succeeding Q5 review of BAA's airports, the CAA issued a separate consultation paper on the issue of cross-subsidies between airports, once again concluding that separate regulation was appropriate, and that there should be no cross-subsidies permitted.[64]

7.7 Rather, the typical RAB approach is in a natural monopoly market with no prospect of entry irrespective of future technological developments, such as water supply. In contrast, fixed line telecoms providers, even in rural areas, are subject to competition from altnet FTTP providers, mobile broadband providers and potentially in future fixed wireless access and satellite access.

7.8 In line with its rather perfunctory approach elsewhere, Ofcom has not provided any assessment of the impacts of its RAB approach. For example, there is no mention in its document that its approach creates a cross-subsidy let alone a discussion of the significant distributional impacts or the chilling effect the approach is likely to have on existing and future broadband competition in category 3 areas. Where Ofcom does mention a concern it glosses over it (for example, '*excessive pricing'* mentioned at §3.17). For Ofcom to formally propose a radical regulatory model with such limited and cursory consideration of its impacts is inadequate. In the next section we discuss the many issues with Ofcom's proposals.

7.2 Problems with Ofcom proposal

7.9 We consider that there are significant problems with Ofcom's approach – we discuss these below.

7.2.1 *Discourage existing/future altnet FTTP investment*

7.10 Although category 3 areas are labelled 'non-competitive', implying there is no altnet build now and there will be none in the future, this is factually incorrect. Although in many cases, these postcode sectors are not targets for large network operators such as CityFibre or Virgin Media, smaller operators (such as Gigaclear and B4RN) with different business strategies have already rolled out and plan to continue to do so to homes in category 3 postcode sectors. The reason Ofcom's approach ignores such operators is that:

- many existing FTTP networks or 'planned deployments' do not meet the threshold that a network needs to cover 65% of a postcode sector to be 'counted';

[63] CAA (2003), *Economic Regulation of BAA London Airports: CAA* decision, February, at §§3.18-3.22

[64] CAA (2006), *CAA's initial price control proposals for Heathrow, Gatwick and Stansted airports: Supporting Paper I, Separate Regulation of Airports*, December.

- Ofcom use of a 20,000 cluster size for forecasting future potential FTTP build misses out future plans of operators focussed on rolling out to individual villages or small rural areas (like Gigaclear and B4RN).

7.11 The impact of Ofcom's proposed RAB approach on current and planned altnet FTTP investment will be significant since BT will be able to build subsidised FTTP network to compete against altnet FTTP networks which lack such a subsidy. The main effects of this will be to strongly disincentivise future altnet FTTP build in category 3 areas, as these operators know that they may be overbuilt by a subsidised operator. Though existing networks may continue operating since the costs are sunk, these assets will effectively be stranded and returns expropriated. It would create significant perceived regulatory risk that Ofcom may take a similar approach in future to other sunk assets, and so will deter investment in other parts of the country, including category 2 areas.

7.12 Ofcom's approach will effectively create an artificial boundary between areas in the UK where altnet investment might be viable and where it will not be. The placing of a particular region in category 3 will be a self-fulfilling prophecy; even if an area could be attractive for altnet FTTP investment and competitive at some point in the future, once it is assigned to category 3, that potential investment and competition will be removed, as it will not be commercially viable to compete against a cross-subsidised BT FTTP network. It is premature to ossify areas at this time since it is not yet predictable which areas altnet FTTP build will be viable in, and which are unviable. Ofcom's approach is therefore likely to materially distort investment decisions.

7.13 Halting altnet FTTP competition in this way will be particularly problematic if BT's optimal strategy is to engage in investment races, since the increased incentives for BT to invest in FTTP created by the prospect of altnet FTTP entry will not arise (see §5.34 above).

7.14 In some areas, there is also the prospect that Ofcom's approach will result in two competing networks subsidised from different sources, with an altnet subsidised by the Scottish Government, BDUK, or some other state entity; and BT's FTTP cross-subsidised from MPF and FTTC products. The competition between these operators will, in turn, increase the subsidy which needs to be provided in an area where demand is, by definition, insufficient to cover the full costs of even a single operator.

7.2.2 *Ofcom has failed to consider whether its proposals amount to state aid*

7.15 Ofcom's proposals are, *prima facie*, very similar to a range of schemes which have previously been found to represent state aid to incumbents.

7.16 The proposals could be characterised is as a levy which is placed on MPF and GEA customers in category 3 areas, and which is then provided to BT in order to subsidise its FTTP rollout. In this light, the proposals can be assessed against the four cumulative criteria for a scheme to represent state aid:[65]

- *there must be aid in the sense of an economic advantage*– in the present case an economic advantage arises from the fact that, without the intervention proposed by

[65] As set out in Article 107(1) TFEU

Ofcom, BT would not roll out its fibre network in the non-competitive areas. Indeed, the premise of the proposal is that the additional costs included in the total RAB will only be those that relate to services that would not otherwise be profitable for BT to provide. BT's network rollout will therefore be funded by what is, in substance, equivalent to a subsidy, and this criterion is fulfilled;

- *the advantage must be granted directly or indirectly through State resources and must be imputable to the State*– there is no doubt that the advantage is imputable to the state. Whether it is granted directly or indirectly from state resources is less clear and case law in this area is complex. However, the Commission previously found in its *Thames Tideway Tunnel project* decision that a similar RAB-based approach did involve state resources[66];
- *the measure must favour certain undertakings or the production of certain goods*– the measure clearly, and only, favours BT, and this criterion is fulfilled;
- *the measure must be liable to distort competition and affect trade between Member States*– the threshold for this criterion is low, and it has previously been set out in the Commission decision regarding subsidies for rural broadband in the UK that these would impact trade between Member States.[67] As we explain above the RAB approach is highly likely to distort investment and competition by companies such as Gigaclear;

7.17 Consequently, three of the four criteria for Ofcom's proposals to represent state aid are clearly fulfilled, and the final one is partially fulfilled.

7.18 Ofcom should therefore undertake a full assessment of whether its proposed scheme—or any scheme like it—would represent state aid. If it would represent aid, then this would be a compelling reason to reject it, and instead adopt a scheme which does not raise state aid issues.

7.2.3 *Reduce total UK FTTP coverage*

7.19 The capacity of UK telecoms operators to construct FTTP networks is constrained at present, and is likely to remain constrained over the period of the next charge control. This is due to a number of factors including limits on management capacity, the need to trial new technologies, labour resources (for constructing the network) and access to capital and conditions for capital drawdown being met.

7.20 Labour resources to roll out FTTP have, given the UK's tight labour market and lack of scale FTTP rollout to date, historically been brought in from other EU Member States.[68] However, the ability to bring in such resources will potentially be constrained by Brexit over the course of the next charge control period. This means that the UK's FTTP industry is likely to face binding capacity constraints given the volume of rollout which is planned.

[66] Case SA.37045

[67] Commission decision of 26 May 2016 in SA.40720, *National Broadband Scheme for the UK for 2016–2020*, at §§174-176.

[68] [✂]

7.21 This constraint means that if, due to the RAB subsidy, BT rolled out FTTP networks in category 3 areas this roll-out would reduce roll-out in other parts of the UK as BT diverted capacity to build in category 3 areas. In economic terms, FTTP rollout in category 3 areas will crowd out FTTP rollout in category 2 areas.

7.22 Furthermore, the average cost (in terms of manpower and capex) per premises passed in category 3 areas will be greater than in category 2 areas, since they are areas with lower housing density. This implies that the resources—both manpower and capital —required per home in category 3 areas is greater than elsewhere in the UK (see §3.12), which in turn means that for every premise passed in category 3 areas there will be a reduction of more than one premises passed in rest of UK. Therefore, the likely impact of the RAB approach is to reduce total UK BT FTTP coverage, at least in the medium term until capacity constraints cease to bind.

7.2.4 *Distributional effects*

7.23 Under Ofcom's proposals, a mark-up is added to non-FTTP prices (for MPF and FTTC 40/10) to reflect the need to cross-subsidise FTTP rollout. This mark-up will, in part, be passed through to retail prices – we estimate that the pass through is likely to be about 70% (see §7.31). This means that customers taking these non-FTTP products will be funding BT's losses from constructing FTTP networks and reducing FTTP prices.

7.24 What this will mean in practice is that there will be systematic subsidies both between different areas of the UK and between different sociodemographic groups, for example:

- Customers in rural Northumberland who are unable to get FTTP subsidise roll-out and pricing for FTTP customers in rural Hampshire where FTTP is being rolled out. Whilst some of these Northumbrian customers may have access to FTTP in the long run, their networks may not be subsidised, since at some point there will an insufficient cohort of non-FTTP customers to provide a subsidy to cover FTTP roll-out losses. As such, Ofcom's scheme could not support FTTP roll-out for all category 3 areas; it is consequently unsustainable (see section 7.2.5 below);
- Customers who have no interest in FTTP services, who will often tend to be more elderly and poorer customers will subsidise the roll-out/price of FTTP, which is disproportionally likely to be adopted by younger, richer customers.

7.25 Ofcom must properly consider the harm from these distributional effects. This is particularly important in light of Ofcom's duties to conduct an Equality Impact Assessment (EIA) of its proposals. Given that its proposals will represent a subsidy from users taking older, legacy, lower cost products to those taking newer and generally more expensive products, they are likely to have the effect of increasing inequality in the UK. In particular, it is likely that they will discriminate against those with disabilities and older customers, and in favour of higher earning, younger, and able-bodied customers. To the extent that some ethnic minorities have lower levels of disposable income than other ethnic groups, and therefore tend to purchase ADSL or superfast products rather than more expensive ultrafast products, it may also act to discriminate between different ethnic groups.

7.26 If it wishes to proceed with the proposals of a RAB-based model which includes subsidies from non-FTTP products to FTTP products, Ofcom should therefore undertake a robust EIA analysis which looks at the impact on all demographic groups. TalkTalk considers that this

analysis will show that the proposals adversely affect poorer, older, disabled and ethnic minority customers while benefitting richer, younger, able-bodied white customers. Ofcom has presented no analysis of how it would seek to mitigate these problematic impacts.

7.2.5 *RAB approach is unsustainable*

7.27 Ofcom's proposed RAB model is, by definition, unsustainable in the longer term. This is because as the roll-out of FTTP in category 3 areas increases and the base of customers on non-FTTP products consequently declines the RAB mark-up per non-FTTP customer will continually rise. At some point, if the subsidy level is maintained, the price of non-FTTP products will rise above the subsidised FTTP price.

7.28 Such a rise in non-FTTP prices will accelerate the reduction in use of non-FTTP products (as customers shift to not having a connection, FTTP or non-fixed products such as 5G) thereby further increasing the RAB mark-up per customer. There will consequently be a vicious circle, with increased MPF prices forcing more customers across to FTTP, further increasing MPF/FTTC prices.

7.29 This means that Ofcom's model is inherently unsustainable, and cannot be seen as a long-term solution to rural FTTP roll-out. At best, it may work for a period of time which will be dependent upon the speed of FTTP roll-out in category 3 areas. However, even across a five year term, it contains the inherent contradiction that the more successful it is in stimulating investment in FTTP by BT, the more quickly the scheme will collapse. It therefore contains fundamental time inconsistencies.

7.2.6 *Increased retail prices and weakened downstream competition*

7.30 Two of Ofcom's core objectives are protecting consumers against excessive prices and poor quality; and, maintaining retail competition based on access to the BT network. Both of these will be harmed as a result of Ofcom's proposed approach in category 3 areas.

7.31 The impact of the RAB mark-up will be to increase wholesale charges for non-FTTP products. Some of this (we estimate about 70%) will be passed through into higher retail prices, reducing consumer welfare.[69]

7.32 The remainder of the increase (around 30%) will be borne by ISPs and will reduce margins for non-BT ISPs that use Openreach's wholesale products such as Sky, TalkTalk and Vodafone. It will not affect BT's downstream divisions (since they do not incur wholesale costs) or Virgin (who do not rely on Openreach wholesale products). This reduction in margins will weaken the incentive and ability of such ISPs to compete in downstream markets. Such a reduction in competition will have all of the standard impacts of reducing competition: margins at the retail level will increase; innovation in products and customer service will be reduced; and there will be fewer providers to choose from as they exit the market or cease selling to new customers. All of these factors will directly or indirectly harm customers.

[69] This pass-through figure can be derived from the Frontier Economics analysis referenced at footnote 22 of this document.

7.2.7 *The RAB approach may not be commercially viable given predatory pricing obligations*

7.33 Irrespective of any subsidy, BT will have to comply with the prohibition on predatory pricing as laid out in European and UK law. This effectively sets a price floor as BT could not legally set the FTTP price below the incremental cost of providing the service excluding the subsidy. This means that, particularly in higher cost areas, that BT might not be able to set the FTTP price low enough to create sufficient demand to cover the total cost, meaning that the investment would not be viable even with a subsidy.

7.2.8 *Subsidy provided for areas that were commercially viable for BT to build without subsidy*

7.34 Category 3 will include areas that are viable for BT to build without subsidy. This is because, though Ofcom considers that category 3 areas are not viable for altnet FTTP build, as BT has lower costs than altnets, FTTP build will be viable for BT in some parts of category 3.

7.35 Whilst theoretically BT should not attract a subsidy for build in these areas since they would not be loss-making, BT has the incentive and ability to overestimate costs, underestimate revenue, game cost attributions and gold-plate the network investment to make it appear loss-making and so attract a subsidy.

7.36 Thus, the impact of the RAB approach will be for consumers to subsidise BT build that would have otherwise occurred without any subsidy. A similar dynamic occurred with BDUK whereby BT was able to attract BDUK subsidy for areas which would have proven profitable on a fully commercial basis.

7.2.9 *Weakened capex efficiency incentives*

7.37 Under Ofcom's proposals, the size of the RAB mark-up is based on *outturn* capex (rather than forecast). The effect of this is to reduce incentives on BT to reduce capex costs (for any given level of output) and increase the incentive on BT to 'gold-plate' its investments. Though Ofcom could notionally disallow certain capex if this is *ex-post* considered inefficient, it is unlikely that Ofcom could reliably identify inefficient expenditure. Furthermore, it is likely that Ofcom would wish to be cautious in making such an assessment, as in doing so it creates uncertainty and risks undermining incentives to invest. There is consequently likely to be a bias towards Ofcom permitting inefficient capex to be recovered.

7.2.10 *Increased incentives on BT to deter entry in category 2 areas*

7.38 Ofcom's proposals in category 3 areas will also increase BT's incentives to engage in exclusionary behaviour to deter altnet FTTP networks from being rolled out in category 2 areas. By deterring entry would tend to lead more postcode sectors to be assigned to category 3 areas, rather than category 2 areas, at the next market review. This in turn will increase BT's profits, as it will be able to receive subsidies to support BT's FTTP roll-out in the areas which have been shifted from category 2 to category 3. This may be particularly profitable for BT, since these areas may be ones in which, absent BT's exclusionary behaviour, it would be commercially viable to roll out FTTP both for BT and for other operators. The subsidy granted in these areas will therefore represent pure excess profits to BT, which will not act to stimulate investment which would otherwise not have occurred.

These excess profits will strengthen the incentives on BT to engage in exclusionary behaviour.

7.2.11 *Gaming of RAB approach*

7.39 Ofcom's proposed RAB approach can be gamed by BT in a number of ways to increase its profits and harm consumers and competition. We describe three ways in this section; there may be others beyond these three.

7.2.11.1 *BT gaming revenue and opex forecasts*

7.40 Ofcom's proposed approach is based on use of revenue and opex forecasts to determine the RAB mark-up.

7.41 BT will have strong incentives to exaggerate FTTP opex forecasts and under-estimate FTTP revenue forecasts in category 3 areas to increase the RAB uplift applied to non-FTTP products, and therefore its profits.

7.42 In the past and for well-established products where revenues and costs are relatively predictable, Ofcom has frequently over-estimated BT's unit costs, typically through overestimating its costs or underestimating volumes. This has been a key factor that has led to BT enjoying returns materially above its cost of capital in recent years[70].

7.43 The risk of Ofcom overestimating opex and underestimating revenue is higher in this case since FTTP is relatively new, with uptake levels, prices and cost levels all somewhat unpredictable. Therefore, there is a significant risk of BT gaming these forecasts. These features will also make it harder for Ofcom to verify its estimates of the appropriate uplift to the RAB, as they will mean that there is less objective evidence for Ofcom to base its audits on. This is likely to make Ofcom more willing to accept BT's estimates, enhancing the effectiveness of regulatory gaming by BT.

7.2.11.2 *BT gaming cost attribution between geographic categories*

7.44 BT will have a clear incentive to increase the attribution of costs from category 2 areas to category 3 areas. Doing so will benefit BT since:

- it will allow BT to recover more costs through the RAB mark-up; and,
- there will be no impact on BT's revenue in category 2 areas since FTTC prices are (under Ofcom's proposal) not based on cost and thus if less cost is attributed to category 2 areas there will be no change in price levels.

7.45 There are two broad ways in which Ofcom could game the attribution.

[70] BT has enjoyed excess returns on regulated wholesale products of about £1bn a year for the last 10 years – see Frontier Report, Profitability and the Incentive to Invest, 28 September 2017, Figure 1 (https://www.ofcom.org.uk/__data/assets/pdf_file/0018/107118/Vodafone-Frontier-report.pdf). We estimate that around £300m of this was due to poor forecasting.

7.46 First, BT could attribute more of the total costs to category 3 areas. Category 2 and category 3 areas are formed of relatively small units (postcode sectors) and so it will be difficult to accurately identify which costs are incurred in which postcode sector (allowing BT a wide degree of discretion in its cost allocations). A single exchange may cover both category 2 and category 3 areas, and it is unlikely to be possible for Ofcom to observe cost allocations below the level of an individual exchange, enabling BT to allocate costs to category 3 areas. Notably, it took Ofcom almost ten years to design and implement into charges a revised and appropriate cost attribution approach for BT Group central overhead costs[71].

7.47 Second, BT could use its higher cost resources in category 3 areas. BT could use more costly engineers in category 3 areas by using those on legacy—more expensive—terms and conditions, implying a higher cost per hour for unchanged output.

7.2.11.3 *Gaming capitalisation rules*

7.48 Under a RAB structure where the recoverable costs are *actual* capex costs and *forecast* opex costs, BT has an incentive to game which costs are capitalised. In particular, BT could increase its profits by, after a market review, capitalising more costs than were originally capitalised in the market review, reducing opex and increasing capex. By doing this actual capex would increase (and the additional capex would, through the true-up, be recovered in the future RAB mark-up) whereas forecast opex would remain unchanged. This would increase the RAB mark-up and profits.

7.49 Theoretically, Ofcom might be able to discourage this by having a very prescriptive set of rules for which costs can be capitalised and which cannot and then auditing that this approach has been followed. However, such an approach is likely to be costly, involving intrusive and detailed regulatory intervention in a manner which Ofcom has previously avoided.

7.3 Comments on Ofcom's design proposals

7.50 Ofcom has posed a number of questions about the design of its RAB model. Though we fundamentally disagree that a RAB model should be introduced in this market review, we comment in this section on the design options Ofcom discusses, in case Ofcom chooses to adopt the RAB model (§3.24*ff*).

- TalkTalk agrees that the charge control should apply to all broadband services excluding G.fast and FTTP i.e. including GEA80/20. However, we consider that there will in the medium term be a case for regulation of FTTP prices given that many category 3 areas are not contestable, BT's FTTP investment will be subsidised, and the constraint from FTTC prices on FTTP will weaken as bandwidth demands increase.
- TalkTalk agrees that there should be no HON adjustment given that in the case that the RAB approach is implemented competitive build is unlikely, and, as set out earlier in this submission, higher FTTC prices reduce BT's incentive to invest

[71] See for example, Review of BT's cost attribution methodologies, 13 November 2015. The issues underlying this were first raised with Ofcom around 2012. The corrected charges will not be fully implemented until 2021.

- TalkTalk agrees that the maximum costs that should be included in the RAB mark-up are the FTTP losses based on a near risk-free cost of capital, given the very limited likely extent of competition in these areas if the RAB approach is implemented. In particular, the cost of capital should be lower than the existing BT copper WACC, which needs to take account of the impact of competition from Virgin Media in half of the UK, competition which does not exist in category 3 areas.
- Ofcom should consider whether it would be preferable for any subsidy to be recovered more widely across, for instance, leased line services.
- in point 5, Ofcom suggests that it should err towards over-estimating BT's losses on FTTP to increase investment incentives: "*we may need to consider setting the RAB based on assumptions that increase the probability of BT making profits above its cost of capital".* We disagree. Given the incentive and ability of BT to manipulate the RAB approach to increase its profits and harm the RAB approach causes Ofcom should not further bias its analysis in this manner. In addition, given that most investment in category 3 in the medium term will merely substitute investment from other areas of the UK then no benefit from erring in this way, and may indeed be net costs to consumers from doing so. In any case, if Ofcom considers that there is a benefit to consumers to deliberately 'err' to the upside then (a) it should provide evidence that such bias is in consumers' interests and (b) should not distort multiple assumptions in an opaque manner but rather use the central estimate for each assumption and then make an explicit aggregate adjustment (such as adding 5% to the RAB mark-up amount) to create the desired bias.
- in point 6 Ofcom discusses how to ensure that BT delivers the investment. We presume that Ofcom's approach will anyway ensure that if BT do not deliver the level of FTTP investment that was initially forecast that inputs into the RAB mark-up will be reduced accordingly – i.e. actual capex will be lower and the forecast revenue and opex will be adjusted to the actual level of build through a true up. Thus, we assume that this question relates to the question of whether there should be other incentives (possibly financial) for BT to deliver the level of FTTP initially forecast. It is unclear from Ofcom's document why such incentives would be needed, and hence TalkTalk does not support them.

7.51 For the avoidance of doubt, even if our suggestions as regards the design were adopted we still consider the RAB approach would be harmful and should not be adopted irrespective of the amount of design 'tweaking' that is done.

7.52 Ofcom discusses at §3.18*ff* the options for implementing a RAB approach. Ofcom does not appear to have recognised the significant risk that of the scheme could be gamed and therefore the effort required to design capitalisation and attribution rules, forecast costs, adjust for under- or over-build and calculate any true up[72].

[72] To derive the RAB mark-up forecast opex and forecast revenue will need to be adjusted to reflect actual build. This creates significant opportunity for error and gaming and will result in unpredictability.

7.4 Alternative regulatory approach in category 3 areas

7.53 Below we discuss alternative models for regulation in category 3 areas that will better meet Ofcom's objectives (FTTP investment, consumer prices and competition) and avoid the significant problems inherent in the RAB approach.

7.54 First, we recap below the reasons that the RAB approach will result in significant harm to consumers since it is in light of these weaknesses that alternative options need to be considered.

- The 'benefit' from additional FTTP investment will be small (or more likely negative) since all/most incremental BT FTTP investment in category 2 areas will crowd out BT FTTP investment in other parts of the UK due to capacity constraints.
- The costs and harm of the approach are significant:
  - it will halt potential altnet FTTP investment in category 3 areas and expropriate existing investment reducing industry confidence;
  - in turn the lack of potential additional altnet investment in these areas will reduce BT's incentives to invest in FTTP on a commercial basis;
  - the RAB approach will result in significant and potentially unfair cross-subsidies from lower income groups to higher and from one rural area to another;
  - it may result in customers and ISPs subsidising BT investment in areas that BT would have anyway built without any subsidy;
  - the approach is likely to be gamed and manipulated by BT to increase the subsidy RAB uplift and its profits

7.55 In future (possibly in the 2026 market review) it is likely to be more appropriate to consider a form of subsidy model since the net benefit from doing so will be more favourable:

- capacity constraints are likely to be reduced, meaning that subsidising BT FTTP investment in category 2 areas will result in incremental overall FTTP investment (rather than diverting investment from elsewhere in the UK);
- the existing and future extent of altnet FTTP build in category 3 areas will be much clearer, meaning there will be much less risk of subsidies deterring altnet build;
- the potential for BT FTTP investment that does not require subsidy will be clearer reducing the risk that subsidies are paid for investments that were anyway viable;
- Ofcom will have a better understanding of FTTP revenue and costs meaning that the potential for BT gaming and manipulation will be reduced.

7.56 We consider that the appropriate regulatory approach in this market review period (2021-2026) for category 3 areas is the same adaptive regulation approach as TalkTalk has proposed in category 2. This would mean in category 3 areas (given there are by definition no other networks with 65% coverage) that the regulation would be as for BT+0 areas in category 2 areas:

- a price cap for MPF and FTTC 40/10 services set at BT's FAC costs (without any HON adjustment); and,
- if altnet FTTP investment occurs in an area, then a price floor on FTTC 40/10 prices based on REO costs.

7.57 This adaptive regulation model will improve incentives for altnet FTTP investment compared to Ofcom's proposal, since an REO based price floor will apply once the investment is made allowing them higher returns with a high degree of certainty. BT's investment incentives will be higher than under the current model since lower FTTC prices widen the gap between FTTC and FTTP prices. Adaptive regulation can be designed to encourage investment in category 3 areas by setting the post-entry price for areas where entry occurs to reflect the higher REO costs in category 3 areas.

7.58 Having the same regulation across category 2 and category 3 areas has a number of other benefits:

- simpler than Ofcom's proposals, as there is no need to operate two different regulatory structures;
- consistency of approach in all parts of the country;
- it avoids ossifying an artificial boundary or a sterile and ultimately unnecessary debate about areas which are 'potentially competitive' and those which are 'non-competitive';
- it reduces the risk of regulation becoming inappropriate due to unexpected developments such as DPA not being used at scale, or there being less altnet FTTP roll-out than anticipated.

7.59 Ofcom should also explore what other steps it could take to facilitate investment in category 3 areas. A key area of focus should be on risk-sharing since many of these areas could become viable if ISPs committed large numbers of customers to quickly migrate to FTTP and allow copper services to be withdrawn.

7.60 We note that BT in its responses to the geographic market consultation (§4.5) suggested that Ofcom should both expand category 3 areas and impose "*measures to prevent or discourage overbuild [by altnets], for example, lifting the requirement on Openreach to offer duct and pole access in this area or putting in place a licensing regime*" in category 3 areas. BT is effectively asking for regulatory protection from competition. Such a request only serves to demonstrate the willingness of BT to support measures that harm consumers but benefit their shareholders.

8 Ethernet / DFA remedies

8.1 Sections 5, 6 and 7 above considered Ofcom's proposals for MPF and FTTC 40/10, and TalkTalk's improved proposals for those products. In this section we discuss the appropriate remedies for wholesale leased lines in category 2 and category 3 areas and, specifically, wholesale Ethernet[73] and DFA services which are based on dedicated fibre circuits. These services are typically used by larger businesses and for backhaul for mobile and LLU networks.

[73] In the BCMR wholesale Ethernet is referred to as a CISBO service (contemporary interface symmetric broadband origination)

8.2 We initially discuss Ofcom's proposals for leased lines in category 2 areas, then TalkTalk's proposed approach, and then the approach in category 3 areas. The key points made in this section are as follows:

- Ofcom has provided no reasoning or evidence to support its proposed approach;
- Ofcom has failed to take account of the significant and highly relevant differences between the leased line market and the broadband market which necessitate different remedies;
- there are clear and significant benefits to consumers from imposing DFA in category 2 areas.

8.1 Ofcom's proposals

8.3 Ofcom has proposed in category 2 areas that, alongside DPA, BT should provide wholesale Ethernet services with a price cap set at CPI+0%. DFA is not proposed in category 2 areas.

8.4 Ofcom has provided almost no analysis to justify these proposals.

- the totality of Ofcom's commentary on the approach for leased lines is contained in 1½ pages most of which is a statement of its approach (§2.22-§2.32);
- the potential imposition of DFA is rejected in two short sentences: "*We do not propose to introduce dark fibre in potentially competitive areas because our approach is to encourage competition in rival networks upstream of dark fibre. Introducing dark fibre is not consistent with that approach*" (§2.26). No rationale is given for why Ofcom's approach of encouraging network competition (upstream of dark fibre) will be more beneficial for consumers than imposing a DFA remedy, nor why DFA is inconsistent with Ofcom's approach;
- it appears that the CPI+0% charge control was chosen simply to mirror the proposed CPI+0% cap for MPF and FTTC 40/10. No justification is given for why the price cap is set at this level, which implies price caps much further above costs for Ethernet products than for MPF/ FTTC 40/10 since:
  - based on the draft BCMR statement which set prices at CPI–CPI for 2020 and 2021, prices for leased lines with speeds up to 1Gbps in 2021 are likely to be materially above costs, despite a cost-based charge control being applied up to 2019;
  - prices for 10Gbps circuits are likely to be even further above cost (we estimate about 50% above cost in 2019), as there has never been cost-reflective price regulation imposed on this product; and,
  - unit costs for Ethernet products are likely to fall rapidly due to volume increases over the control period.
- The apparent lack of thought that has gone into developing these remedies is well illustrated by Ofcom's proposal that there should be separate baskets for products below and above 1Gbps. There is no justification provided for this—and, indeed, it is difficult to conceive of what such a justification could be given Ofcom's finding that all products are part of the same economic market. There is also no consideration of the difference between access and inter-exchange services which are considered as separate product markets in the most recent BCMR19. Ofcom has set out no

explanation for this change in definition (e.g. that the BCMR19 is wrong, or why there will be sufficient market changes over an 18-month period that the product market definition will change).

- At §2.23 of its consultation, Ofcom states that it considers that "*from 2021, our regulation of leased lines services should reflect what we expect to be increasing use of unrestricted DPA*". Ofcom has set out no reasoning underlying this expectation, nor how much actual use of DPA there will be. If there are 1,000 new leased lines per annum based on DPA clearly has very different policy implications from 20,000 new lines per annum. If Ofcom wishes to take this factor into account, then it should quantify the amount of DPA usage for leased lines over the time until the end of the period, set out the competitive effects of this level of DPA usage, and then be prepared to amend its proposed remedies in the event that DPA usage is less widespread than expected.

8.5 Another significant flaw in Ofcom's approach is the circularity in reasoning between the BCMR19 and the Access Review.

8.6 In §2.25 of its consultation, Ofcom sets out that "*we are keen to provide a level of continuity with the regulation that applies up to 2021*". It then goes on in §2.27 to say that "*In our BCMR 2018 consultation we proposed to set a leased lines charge control to 2021 at a flat (nominal) cap at current (regulated) prices for services at 1Gbit/s and below, reflecting our prioritisation of price stability for the short period of that charge control*", and at §2.31 that "*Our view is that ensuring regulatory stability from 2021, will be a significant factor in preserving the investment incentives faced by competitors to build their own networks*". From the combination of these paragraphs, it appears that Ofcom's approach of choosing a CPI+0% price cap in the Access Review is substantially based on being consistent with Ofcom's proposed price caps in 2019/20 and 2020/21 from the BCMR19.

8.7 However, this is not a legitimate approach for Ofcom to adopt. This can be seen from §§2.5-2.6 of the Draft Statement in the Business Connectivity Market Review:

> *In our Strategic Policy Position, we set out how we plan to reform the way in which we carry out competition assessments in telecoms markets to further support network investment in the long term. In 2021 we will, for the first time, align our reviews of business and residential markets. We also said we would look to vary our regulation by geography depending on the level of competitive intensity.*
>
> *At this stage, the path that future prices might take under our revised approach is not clear. With greater geographic differentiation in our regulation, and given the short timescale of this review, we are placing the greatest weight on price stability and regulatory certainty over other factors we take into account when setting charge controls.*

8.8 Thus, the charge controls set in the BCMR were themselves based on the charge controls that were expected to be set in the Access Review. However, the Access Review proposals for leased lines markets were set to maintain stability of regulation with the BCMR proposals.

8.9 This leads to a circularity in the remedies proposed for leased lines. BCMR proposals are based on the anticipated Access Review proposals, and the Access Review proposals are justified on the basis of maintaining consistency with the BCMR proposals. This is illegitimate, and amounts to prejudice by Ofcom. In light of this circularity, there is

effectively no justification of either of these proposals, as they are ultimately based on themselves. The prejudicial effect is that Ofcom is free to choose whatever remedies it desires, without evidence, as the remedies will be their own justification.

8.2 Differences in markets and remedies

8.10 For leased line services, Ofcom has effectively proposed a similar form of weak regulation in each geographic area as for MPF and FTTC 40/10 products: a CPI+0% price cap on active wholesale products in category 2 areas and FAC based price caps in category 3 areas. This is inappropriate since it fails to recognise the significant differences in the leased line and broadband markets and the consequential need for different remedies.

8.11 Ofcom's earlier geographic market analysis proposed a single 'converged' approach to broadband and leased line markets[74] – for example, by having the same geographic market definitions for both. This means that remedies in leased line markets depend on the level of competition from new altnet FTTP networks[75] – for example, Ofcom proposes DFA where no altnet FTTP is expected (category 3 areas) and does not propose DFA where altnet FTTP investment is expected (category 2 areas).

8.12 Ofcom's approach is flawed – the broadband and leased line markets have significant differences that need to be reflected in the market analysis and remedies.

8.13 Most obviously, the products are in separate markets, and indeed until now have been considered in separate market reviews. Ofcom's error results in part from its failure to undertake an appropriate product market definition exercise before assessing remedies, which TalkTalk has previously highlighted to Ofcom.[76] As we set out there, Ofcom cannot simply ignore product market definition because it leads to inconvenient findings which are at odds with Ofcom's prejudged conclusions of the appropriate remedies.

8.14 Furthermore, there are several key differences between the broadband and leased lines markets that lead to a need for different remedies. In particular: there are existing full fibre networks serving the leased lines market; any additional altnet FTTP network will provide little constraint in the leased line market; and there is a better remedy (DFA) available in the leased line market that is not available in the broadband market. We discuss each of these points below.

8.2.1 *Full fibre networks already exist for leased lines*

8.15 There are already on average almost two full fibre networks in each area serving leased line customers. BT has a national network, Virgin covers a substantial proportion of UK business

[74] We agree that conducting the WLA, BCM and PI market reviews at the same time has benefits since, for instance, it can ensure consistency of approach. However, there is no requirement to impose, or benefit from imposing, the same or similar remedies across different markets.

[75] There is an exception to this approach since Ofcom has proposed that BT will not hold SMP in the CLA (central London area) for leased lines and so there would be no regulation of leased line services in category 2 areas that are in the CLA.

[76] TalkTalk (2019), *Promoting investment and competition in fibre networks: TalkTalk submission*, March, at section 3.

premises and there are additional dedicated leased line networks covering around 30% of UK businesses[77]. Each UK business has on average 1.8 full fibre networks serving it[78].

8.16 In contrast, there are no scale FTTP networks serving residential broadband customers at present – which is reflected in Ofcom's desire to accelerate FTTP build.

8.17 Thus, the benefit of additional fibre networks for leased line customers is much lower than for broadband customers where additional FTTP networks deliver significant benefits, both by offering higher quality of service than the BT and Virgin incumbent networks, and by offering much greater incremental competition.

8.2.2 *FTTP networks will provide a limited constraint on leased lines*

8.18 In its remedies, Ofcom effectively presumes that a single altnet FTTP network will impose a sufficient competitive constraint to justify substantially weakened leased line regulation, with price caps set well in excess of costs, and no DFA available[79].

8.19 However, an additional altnet FTTP network will provide significantly less competitive constraint on leased lines than it provides on broadband services due to customer preferences, differences in network structures and need for track record. Thus, an FTTP network is likely to have little impact on BT's market power in leased lines.

8.20 This is clearly apparent from the existing situation in the leased line market today in the CLA where – even though there are more than four competitive networks[80] – BT retains SMP given its 61%-70% market share. There are a number of reasons as to why an additional FTTP network is unlikely to impose a material constraint:

- the type of network needed to serve leased line customers differs from that for broadband customers in its physical nature. In particular, cables are often laid deeper in the ground to provide added fault resistance, and overhead fibre cannot be used (either in the final drop or in the spine).
- in many cases an FTTP network built to service broadband customers will not offer any commercial advantage in serving business customers since little sharing of the network is possible. This is because a substantial proportion of businesses requiring[81]

[77] Based on whether the network is within 50m of a premise

[78] Based on BCMR19 – Consultation Nov 18 Tables 5.2, 5.8 and 6.3. Weighted by location of new circuits there are 2.1 full fibre networks

[79] This is implicit since in category 3 areas where no competition is expected DFA is imposed at cost whereas in category 2 areas where competition from at least one other network is expected no DFA is imposed and Ethernet is priced above cost.

[80] In leased lines BT is able to maintain market power even in the presence of multiple alternative networks whereas in broadband Ofcom presumes that 1 or 2 rivals are sufficient to constrain BT. For example, in the CLA area there are on average 4.3 rival networks within 50m of sites yet BT retains 61%-70% market share (BCMR Consultation November 2018 §6.107 and Table 6.9)

[81] It is entirely possible that even though an FTTP network covers 70% (for example) of total premises in a given postcode sector, it passes far less than 70% of business premises in that area. For example, the altnet provider may choose not to roll out in CBDs or business parks, because of difficulties in access and wayleaves and/ or a strategy which does not focus on this customer segment. This means

leased lines are likely to be located in CBDs and business parks where there are few residential customers. In these cases, the only part of the network that might be shared is backhaul elements from cabinets/ POPs back to the exchange, which accounts for a small portion of total costs;

- future altnets building FTTP networks may choose not to offer leased line services:
  - FTTP providers such as FibreNation, Gigaclear and Hyperoptic[82] do not provide leased lines over their network. The primary exception to this is CityFibre though they appear to only serve part of the market, particularly small business and public sector customers.
  - an FTTP network operator will need to invest in product development, marketing and sales in order to be able to offer leased line products.
  - it is difficult for new network providers to build a strong presence in the leased line market since credibility and track record (which new entrants lack) are very important for many leased line customers

8.21 Even if a new FTTP network does provide leased lines it is likely to have limited impact on BT's market power, reflecting that It is more difficult and slower to win leased line customers than broadband customers. There are several reasons for this:

- customers are more resistant to change in their services;
- to win enterprise customers, networks require vendor credibility and therefore a track record of successful provision of business grade services for an extended period of time;
- both wholesale and retail contracts are generally longer than in consumer broadband markets;
- entrants have to overcome the cost and delay of extending their networks into buildings, which can be exacerbated by wayleave issues; and
- in-building cable trays may lack spare capacity.

8.22 This is reflected in the market shares of existing leased line networks. For example, in central London where there are on average 4.3 rival networks within 50m of a business premises[83], most of which have been present in the market for 5 years or more, rivals to BT have on average 30% - 39%[84] market share implying less than 10% share each. This is much lower than the market share that altnet FTTP networks are forecast to achieve– and, indeed, will require to break even– in broadband of [✂] within 5 to 7 years.

---

that even if the FTTP provider were to offer business grade products on its network, they may not impose an effective constraint on BT.

[82] We understand that Hyperoptic resell Openreach EAD circuits rather than using their own FTTP network.

[83] BCMR Consultation Nov 2018 §6.112

[84] BCMR Consultation Nov 2018 §6.107

8.23 Thus, though Ofcom expects all FTTP networks to be multi-functional and offer both broadband and leased line services,[85] this ignores the evidence:

- at present most FTTP networks are not multi-service;
- it is unclear when or if this will change;
- even if FTTP networks were multi-service in future these FTTP networks will not provide a strong constraint in the leased line market for many years.

8.24 The limited competitive constraint which FTTP networks impose on leased line providers is reflected in actual recent market experience in Europe. For example, in Spain and Portugal FTTP providers have only a small presence in the leased line market after seven years of marketing their services; and, the EC proposed recommendation has not merged the WLA (market M3a) and BC (M4) markets.

8.25 Thus, even if an altnet FTTP provider does provide leased line services over its network and builds its network into business areas, the competitive constraint it provides will be at most limited, and may in practice be negligible.

8.2.3 *DFA is an option in the leased line market and is superior for consumers*

8.26 Unlike broadband, in the leased line market there exists a passive product downstream of DPA that can deliver similar benefits to network competition at a lower cost. BT does not offer a passive product downstream of DPA that can be used to provide broadband services.

8.27 As we explain below DFA is superior to other forms of competition for leased lines, and incentivising and increasing its usage should be a priority for Ofcom.

8.2.4 *Summary of Ofcom's proposals*

8.28 Overall, we consider that Ofcom has provided no cogent reason to justify its proposals nor demonstrated that the proposal is in consumers' interests. The mirroring of the approach to broadband remedies is unjustified since there are significant differences in the market that necessitate different remedies, as well as there being meaningful differences in product and geographic market definition.

8.29 Below we discuss an approach to regulation that will better serve consumer interests than Ofcom's approach. Obviously, this would need to be refined once Ofcom has conducted a proper market definition and SMP assessment exercise, but we believe that this form of regulation is likely to be appropriate in all or most areas where BT have SMP.

8.3 Suggested remedy approach

8.30 This section discusses TalkTalk's view of the appropriate remedies for leased line services. Throughout the section it is assumed that DPA is unrestricted and can be used to provide leased line services, in line with Ofcom's proposals in PIMR19.

[85] Ofcom (2018), *Regulatory certainty to support investment in full fibre broadband: Ofcom's approach to future regulation*, 24 July, at §§3.3-3.4

8.31 For the last 12 years leased line regulation has been focussed on wholesale Ethernet products, with a requirement placed on BT to offer Ethernet services at cost and on an EOI basis. This reflected the well-established logic that wholesale prices should be set at BT's fully allocated cost unless, for instance, there was a desire to promote competitive investment by operators that had higher costs than BT due to some unavoidable disadvantage.

8.32 In the 2016 BCMR, widespread DFA was imposed, but was subsequently withdrawn following an appeal by BT. In the recent BCMR draft statement, cost-reflective DFA was proposed as an additional remedy in certain circumstances[86]. These decisions and proposals reflect Ofcom's view that DFA provides material innovation and efficiency benefits over Ethernet, by opening the active layer up to competition. This reasoning has been repeated in this remedies consultation where Ofcom has reiterated the benefits of DFA over Ethernet in category 3 areas – see consultation §§3.33 - 3.37. However, Ofcom has not proposed DFA in category 2 areas. Ofcom said that the main reason (its "*primary concern*", §3.36) for this was that DFA might reduce network investment incentives.

8.33 Thus, in determining the appropriate remedies for leased line services a key question is whether weaker regulation (e.g. no requirement to offer DFA and/or wholesale Ethernet prices above cost) in category 2 areas would advance consumers' interests by encouraging additional competitive network investment, and whether the benefits from increased network investment are sufficient to offset the harm from higher retail prices and lost innovation as a result of no DFA and higher wholesale prices. We consider that consumer interests will be best met through imposing DFA with prices at cost across all of the UK, and transitioning away from the regulation of Ethernet products. We describe our proposal and its impacts below.

8.3.1 *TalkTalk's proposals*

8.34 TalkTalk's core proposals for leased line products in category 2 areas are as follows:

- Ofcom's primary remedy should be to impose an unrestricted dark fibre remedy, with a regulated price aligned with the underlying costs of dark fibre.[87] The dark fibre would be able to be used in both inter-exchange and access markets and for any bandwidth of product.
- as it will take some time for the market to transition to using dark fibre, there will need to be a charge control applied to Ethernet products until the dark fibre product has been launched and has a sufficient competitive effect to constrain Ethernet pricing.

[86] For CISBO inter-exchange connectivity to or from exchanges that were classified as BT+2. See Ofcom (2019), *Draft statement: Promoting competition and investment in fibre networks – review of the physical infrastructure and business connectivity markets*, 24 May, at Volume 2, page 4.

[87] The approach for calculating the charge control for dark fibre would need to be consulted on separately; this would anyway be the case under Ofcom's proposals, which envisage that there will be a dark fibre remedy applied to category 3 on a cost-reflective basis.

8.35 Such an approach would rapidly transition competition in leased line markets to being based on DFA. This would be superior to the alternatives:

- compared to competition based on Ethernet (as today), DFA is superior since there will be greater innovation and efficiency due to competition in the active layer, (as Ofcom itself accepts, §3.33);
- compared to network based competition (using DPA where possible) DFA is superior since many more customers will benefit from the innovation and efficiency benefits that derive from competition in the active layer; any additional network investment will bring limited additional benefit but come at a cost in inefficient cost duplication.

8.36 These proposals would not envisage any reduction in DFA or Ethernet regulation as a result of altnet FTTP entry since, as explained above, entry by a FTTP network does not provide a significant increase in the competitive constraints facing BT's leased lines business. Further, there is little benefit from encouraging network competition since the majority of benefits of network competition—which are due to competition in the active layer— can be gained through DFA[88]. This model of regulation should therefore be maintained until such a time as the market becomes fully competitive, there is a finding of no SMP, and regulation falls away completely.

8.37 It is important that the charges for the DFA product are set at cost. There are a number of reasons for this.

8.38 **Direct impact on consumers.** Some of the wholesale DFA price rise (we estimate about 70% in this case[89]) will be immediately passed through into higher retail prices. Higher retail prices result in direct welfare and allocative efficiency losses to consumers.

8.39 **Impact on DFA-based operators.** Any wholesale DFA price rise that is not passed through (around 30% of the increase) will necessarily be absorbed by reductions in CPs' margins. Margins in the markets downstream of DFA are likely to be low for most circuits, due to a combination of:

- low barriers to entry;
- high proportion of overall costs which are variable;
- a downstream price structure (Ethernet) which is very similar to the upstream input cost structure (DFA)[90] – a flat price per circuit irrespective of access length and per km mainlink.

[88] As previously set out, because FTTP offers a higher quality product than existing BT FTTC or Virgin Media DOCSIS products, whereas new leased line entrants will offer products which are similar in quality to BT.

[89] 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% is a reasonable estimate of the extent of pass-through.

[90] This contrasts with network based competition where altnet costs vary significantly by circuit (e.g. due to circuit length, amount dig required).

8.40 Low margins mean that even a small DFA price increase above costs will result in it being unprofitable for competitors to compete for the majority of Ethernet circuits,[91] resulting in a significant reduction in competitor market share and competitive impact. The competitive impact will be much larger than on network investment where margins are higher and broadly distributed.

8.41 DFA price increases above cost are therefore likely to have significant impacts on the ability of DFA-based operators to impose effective competitive constraints on BT. In turn this will:

- reduce innovation in the active and downstream layers;
- reduce productive efficiency due to lessened competitive pressure;
- result in a minor cost saving from reduced duplication in the active layer, from economies of scale.

8.42 **Impact on network build.** Setting DFA prices above cost will have little impact on incentives to build networks which provide leased lines.

8.43 Raising DFA prices would increase the returns from investing in altnet FTTP networks which intend to offer leased line services, since the downstream price for leased line circuits will be somewhat higher. However, the impact on network build will be small since the viability of few circuits will be affected by a DFA price change:

- some circuits are already provided by a rival to BT which operates its own network (since entry is likely to focus on areas of high business density that already have competitors), and prices are therefore already set by competition to a greater extent than in wholesale consumer broadband markets;
- circuits are not contested regularly – typically once every 3-7 years – reflecting long contract periods, low churn rates and a reticence to use networks without a substantial track record of providing leased lines;
- many circuits that were previously unviable will remain unviable after the price change. This is because the underlying cost of circuits have a wide distribution since altnet costs vary significantly by circuit, as circuit length significantly affects dig costs, but DFA/Ethernet prices are per circuit irrespective of circuit length which means that there is a wide distribution of profitability of circuits. This means that a change in downstream prices will have a relatively small effect on the number of unviable circuits that become viable;
- leased line margins for altnets will be subject to competition from BT and Virgin Media, both of which are vertically integrated, and therefore unaffected by the price

[91] 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% on average. Thus a 20% increase in DFA prices will result in a 6% points reduction in margins eradicating all or most of operators' average margins. 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. Further, 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 number of lines unviable.

that is set for DFA. DFA is therefore likely to be a secondary factor in setting the market price for leased line circuits;

- even this small increase in leased line network build will be offset to some degree since competitors will lose customers due to the higher DFA price which will reduce the viability of investing in network[92].

8.44 This is reflected in actual market behaviour in the last 10-15 years where PPC and Ethernet prices have been substantially above cost, but entry has been limited and the effect on BT's market share has been small.

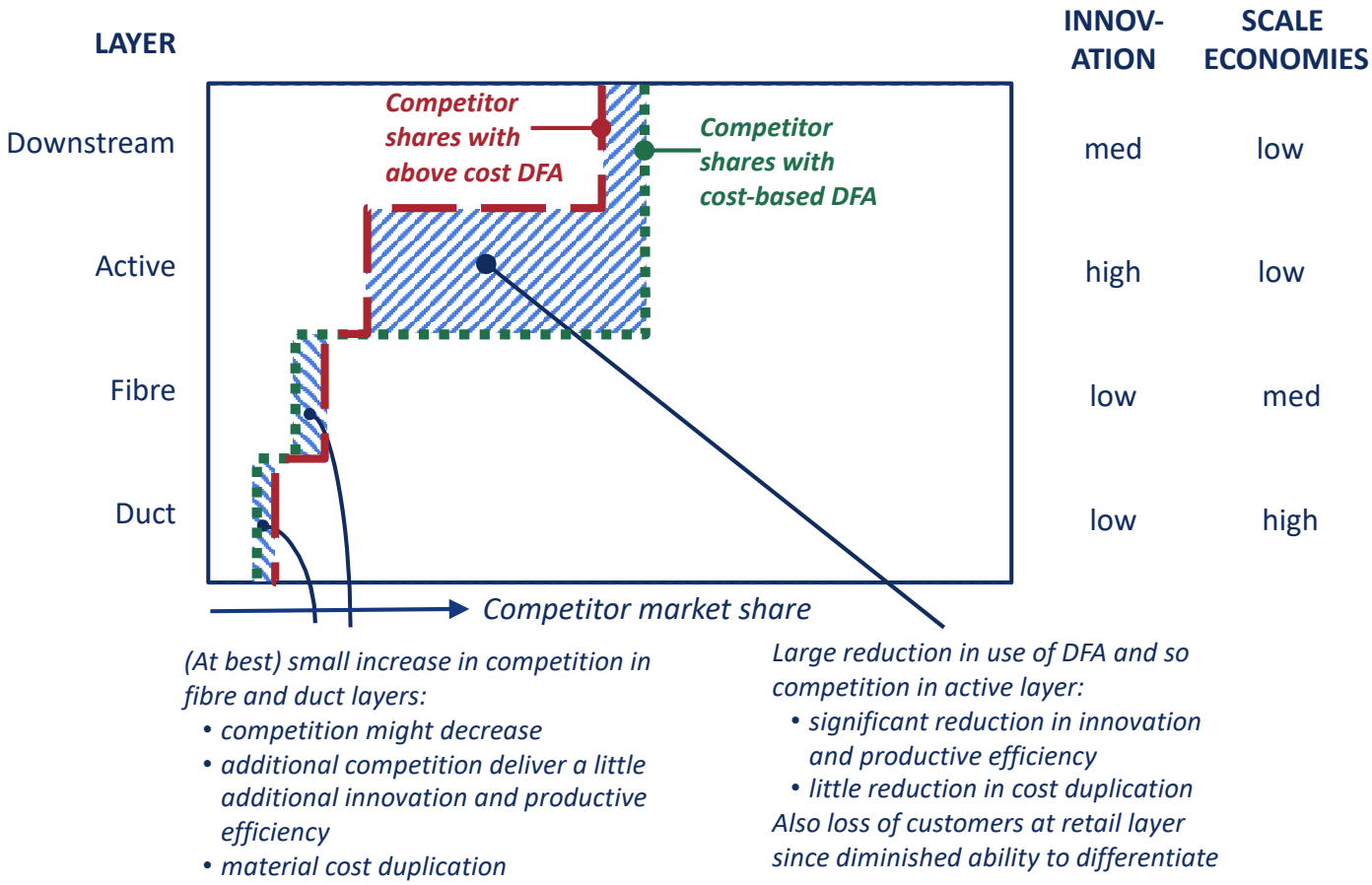
8.45 Thus the overall impact of a rise in DFA prices above cost will be large reduction in DFA-based competition and a much smaller increase in network based competition[93]. The changes in competition in different layers of the value chain caused by setting a DFA price in excess of costs, and their impacts is illustrated in the diagram below.

8.46 The thick dotted green lines show competitor shares at different layers when DFA prices are at cost. The thick dashed red line shows competitor shares if DFA prices are set above cost. The impact of the price rise is a large contraction in competitor shares in the active layer and a small expansion in competitor share of the duct and fibre layers.

[92] This impact is less for leased lines than for broadband services since business customers will be less willing to migrate from Openreach DFA to a new network than residential customers will be to migrate from Openreach FTTC to a new FTTP network.

[93] We have modelled the impact and estimate that only about 5% of circuits will become viable as a result of a 20% DFA price increase. This would only result in about 4% additional network build even in the areas most suitable for competitor build (and this would take years to grow). This model (description and spreadsheet) has been provided to Ofcom – see Business Connectivity Market Review, TalkTalk submission on encouraging competition and investment, 19 June 2018.

Illustration of impacts of a DFA price rise



8.47 It follows from the conclusion that a DFA price rise above costs is harmful that not imposing DFA is also harmful to consumers' interests. Not imposing DFA is economically equivalent to setting a regulated price so high that no customer would be willing to pay it.

8.48 The conclusion that the harm of a DFA price rise– or not imposing DFA at all– outweighs its benefits should not be surprising. It is in consumers' interests for Ofcom to promote, where possible, competition in layers of the value chain where competition delivers most net benefit– which is where potential innovation is high and there are low scale economies (such as the active layer). DFA allows such competition for many customers. Conversely competition in the fibre or duct layers is of lesser benefit since it delivers little innovation but comes with a high cost of duplication. The presence of a retail price rise causing welfare losses further strengthens the case for not relaxing regulation.

8.49 There are additional effects of imposing cost-based DFA that should be considered. In particular, Ofcom should assess whether and how weak leased line regulation, intended to foster more network build to provide leased lines, will indirectly affect the build of FTTP networks to provide broadband services to residential customers. There are two opposing impacts – we discuss each below.

8.50 The first impact is that weak leased line regulation may indirectly stimulate investment in FTTP networks, which serve retail customers, due to economies of scope from sharing network elements. However, for the various reasons given above the impact is likely to be

small. This is borne out by experience in other parts of Europe where, for instance, in Spain and Portugal new FTTP providers only have a small presence in the leased line market after many years. Therefore, weak leased line regulation is unlikely to meaningfully increase FTTP network build.

8.51 The second impact is a negative one that limiting DFA availability and/or raising leased line prices may, depending upon the network structure chosen by an operator, raise the costs of FTTP roll-out and therefore reduce FTTP build. DFA and leased lines are used by some operators to reduce FTTP roll-out costs – for instance, Hyperoptic uses BT leased lines to connect to buildings, and may well use DFA if it were available) and FibreNation is considering using DFA/Ethernet to provide connections between the exchange and some cabinets.

8.52 Thus, the impact of relaxing leased line regulation on FTTP network build is ambiguous and, in any case, likely to be small in either direction. If Ofcom considers promoting FTTP investment is that a reason to relax leased line regulation, then it should provide evidence to show that relaxation has a material positive effect.

8.3.2 *Can DPA and DFA co-exist?*

8.53 We note that Ofcom in its consultation seems to imply that it has to choose between DPA (and network based competition) or DFA and it cannot have both in an area: "*We do not propose to introduce dark fibre in potentially competitive areas because our approach is to encourage competition in rival networks upstream of dark fibre. Introducing dark fibre is not consistent with that approach*" (§2.26).

8.54 If part of Ofcom's reasoning is that it needs to choose either DPA or DFA then we consider that Ofcom is wrong and is creating a false dichotomy. It is neither necessary nor in consumers' interests to have to choose one or the other:

- there is no legal requirement on Ofcom which would prevent it from imposing both DPA and DFA, as shown by Ofcom:
  - in the draft BCMR19 determination and the draft PIMR determination Ofcom has proposed proposing imposing in some markets unrestricted DPA, DFA and Ethernet;
  - Access Review proposals for broadband services in category 3 areas include DPA and MPF/GEA at cost;
  - Access Review proposals for leased line services in category 3 areas include DPA and DFA at cost;
- by imposing both remedies, CPs can choose the solution that is most efficient for their particular circumstances. It is far too early in network roll-out for Ofcom to know which areas are better for DFA and for DPA.

8.55 If Ofcom does have a strong reason to choose a single option between DPA or DFA then DFA should be preferred since it will deliver greater consumer benefits than DPA. In time, if, for instance, DPA become very successful and is able to constrain BT's SMP then it may no longer be necessary to impose DFA. However, that is certainly not the case today.

8.4 Ethernet/DFA regulation in category 3 areas

8.56 Ofcom's proposals in category 3 area are that alongside DPA, BT must provide DFA (with a price cap set at cost) and that Ethernet is continued to be provided through a transition period with prices at CPI+0%. These proposals reflect Ofcom's correct view that DFA delivers greater benefits than Ethernet since it opens up competition in the active layer (§3.33).

8.57 This approach is broadly the same as that which we propose for category 2 areas. Thus, in practice, the same approach for leased lines could be imposed across category 2 and category 3 areas[94].

8.58 Having a unified regulatory approach across the UK, with the same approach in category 3 areas as in category 2 areas, has benefits including simplicity and consistency; and avoiding the risk of distorting investment and competition both at the present time and in case of unforeseen market changes.

9 Quality of service remedies

9.1 Ofcom proposes that QoS standards for MPF/ FTTC 40/10 should remain at the same level as at the end of the current review period in 2021, and not improve between then and 2026. This appears to be for three reasons (see §4.14-§4.16). However, we consider these points do not justify Ofcom's proposal that there should be no improvement in QoS levels.

9.2 As consumption of bandwidth increases the need for rapid fault repair, and consumers' expectations of continual service availability, will increase. Therefore, to leave the QoS standard unchanged would effectively allow the MPF/FTTC products to degrade relative to consumers' demands. The reasons that Ofcom relies on for not increasing QoS standards are invalid:

- Ofcom states there are "*high product costs of further QoS improvements*" (§4.14). However, Ofcom provides no evidence to support this assertion or any evidence that the costs of such improvements will outweigh the benefits to consumers from them being undertaken;
- Ofcom states that it does not wish to divert resources from FTTP deployment to improve QoS standards (§4.15). However, since the engineers who deliver higher QoS are generally different to the engineers who construct and deploy FTTP networks, this is likely to be of limited relevance. Once again, Ofcom has not ascertained the extent, if any, to which improving QoS standards would impede FTTP roll-out;
- Ofcom suggests that improving QoS standards will require material investment that might be stranded due to the limited lifespan of the legacy network (§4.16). However, TalkTalk's understanding is that the cost of QoS improvements are mainly variable rather than fixed; if so, then investment stranding would be of limited importance. Once again, Ofcom has presented no evidence on the extent to which it would expect QoS improvement standards to be stranded.

[94] The only exception would be areas where BT do not hold SMP.

9.3 Therefore, we consider that Ofcom should undertake a full assessment of the costs and benefits of improving QoS standards in the next review period. TalkTalk's expectation is that Ofcom will find that the benefits of such improvements outweigh their costs, and that therefore that QoS standards for MPF and FTTC 40/10 should increase gradually over the course of the review.

9.4 Ofcom will need to impose QoS obligations on the FTTP 40/10 protection product (the FTTP product consumers can use when MPF/FTTC is not available due to copper switch-off). Given this is the only regulated product in a market where BT have SMP it is essential that Ofcom prevent potential abuse of BT's dominance by degrading quality.

9.5 However, we also consider that QoS obligations will in time be required on FTTP even when FTTC 40/10 is still available. This is because, over time the constraint from FTTC 40/10 will weaken and thus the ability of these products to constrain FTTP quality levels to the competitive level will diminish.

9.6 Similarly, Ofcom should clarify that it will impose the same standards on 40Mbps download products when they are delivered by SoGEA as when delivered by the current MPF technology with FTTC overlay. This will help to provide market confidence for the migration to SoGEA which will need to happen in many parts of the UK as BT consolidates exchanges and withdraws legacy copper products.

9.7 In addition, FTTP KPIs relating to QoS will need to be published to be able to identify whether there is discrimination between BT and non-BT CPs.

9.8 It is notable that Ofcom has not referenced auto-compensation and its impact on the industry, following Ofcom's promotion of an industry voluntary agreement to compensate customers for broadband outages. Ofcom should ensure that its final QoS proposals are congruent with the auto-compensation scheme, and particularly that they allocate financial responsibility to the party which has caused the harm to consumers which needs to be compensated. Ofcom should explicitly deal with this topic in its next remedies consultation.

9.9 We agree with imposing QoS obligations on DFA in category 3 areas. Further, under TalkTalk's proposal where DFA is imposed in category 2 areas, DFA QoS obligations should also be imposed.

10 Copper switch off

10.1 Below we discuss the range of issues Ofcom raises in section 5 of its consultation. Ofcom's proposals are in some cases not very clear and therefore we reserve the right to alter our view when we better understand Ofcom's proposed approach.

10.2 We agree that the transition from regulation of MPF and FTTC 40/10 to FTTP regulation should be done on an exchange by exchange basis. However, Ofcom's approach to this transition will need to reflect that an exchange may span different geographic categories – for example, an exchange might include premises in both category 2 and category 3 areas.

10.3 At §5.11 Ofcom appears to suggest that once FTTP services are available in an exchange area then BT should have flexibility on MPF and FTTC prices in that area – for example it should

be able to raise FTTC 40/10 prices to encourage migration to FTTP. If this is what is proposed, we disagree. There are two main reasons for this:

- this would only be appropriate if, at a minimum, there was a strong charge control on the FTTP 40/10 protection product that was set at the charge control for FTTC 40/10 product plus a mark-up – see consultation §5.20. If price flexibility is allowed on FTTC 40/10 in areas where FTTP roll-out has occurred, then it is unclear what the charge control on FTTP 40/10 would be. It will be important that it is no higher than the charge control on FTTC 40/10 plus any mark-up for improved FTTP quality;[95]
- there are significant costs to migrating customers from FTTC to FTTP. Therefore, BT must support the costs of this migration, reflecting that BT will make significant cost savings from the withdrawal of its copper network. If BT was allowed to raise the price of FTTC products to force customers across to FTTP without providing any such support, CPs and customers would be forced to bear these migration costs irrespective of whether they wished to migrate. There is consequently a strong case for setting the price of migration from FTTC to FTTP at zero in areas where copper products are being withdrawn, and recovering the costs of migration from FTTP products post-migration.

10.4 We agree that there should be 'dual running' of regulation of MPF/FTTC and regulation of FTTP (prior to the copper services being withdrawn). The period of dual running will need to reflect the time it takes to encourage customers to move from MPF/FTTC to FTTP services. We do not consider than two years (as proposed by Ofcom) is a long enough period given the likely constraints on the speed of migration, including customer inertia and resistance to in-home work required.

10.5 At §5.17-5.20 Ofcom proposes that the price cap for the FTTP 40/10 protection product should be higher than the price cap on the FTTC 40/10 product to reflect that the FTTP service is higher quality and allows lower ISP cost to serve consumers – Ofcom refers to this as a mark-up. We agree that conceptually this is appropriate.[96]

10.6 Regulation of FTTP services (and G.fast services where FTTP services are unavailable) should include QoS obligations and the QoS levels should be set above those for MPF/FTTC services reflecting the lower fault rates on FTTP networks.

10.7 Ofcom needs to consider that in some areas MPF/FTTC services may be withdrawn but no FTTP network is available and instead G.fast is available. In these cases there will need to be regulation of G.fast services.

[95] See §10.5 for details of this mark-up.

[96] Note, however, that this is the same conceptual issue as when considering whether to adjust the REO cost downwards when setting an FTTC 40/10 price cap– the FTTC 40/10 product will provide lower quality, and therefore the charge control on this product can be set below the REO cost of an FTTP altnet without deterring efficient entry. See Section 6, above.