Promoting investment and competition in fibre networks: modelling the cost of a fibre network

TalkTalk response to AlixPartners report on dark fibre access

November 2019

NON-CONFIDENTIAL

1 Summary

1.1 This submission responds to the AlixPartners annex to Openreach's submission to the Ofcom remedies consultation, entitled *The impact of a dark fibre access remedy in non-competitive areas*.

1.2 Overall, the AlixPartners report is heavy on rhetoric, but has little actual economics or evidence in it. Rather, it reads as an exposition of Openreach's longstanding position that dark fibre access (DFA) will be harmful to the UK telecoms market, and that the current Ethernet pricing gradient must be preserved.

1.3 In its report, AlixPartners raises three potential concerns with Ofcom's proposed introduction of DFA:

- that it may lead to arbitrage, and in particular any or all of what are termed single-circuit substitution, multiple-circuit substitution, and multiple-service substitution (§§28-32);
- that it risks undermining fibre deployment both for Openreach (§§43-46) and for other CPs (§§47-50);
- that it will lead to greater public funding requirements (§§56-57).

1.4 As set out in this response, none of these concerns are realistic, and so none of them should influence Ofcom against imposing a dark fibre remedy.

1.5 The most important defects in the AlixPartners report are as follows:

- as AlixPartners notes, many of the identified problems with DFA could be solved via suitable amendments to a RAB approach (if Ofcom pursues a RAB in its final determination). However, AlixPartners largely ignores this throughout its text, and merely acknowledges it in a single paragraph at the end of the document;
- almost all of the potential problems raised by AlixPartners about what it terms 'arbitrage' are also raised by Ofcom's duct and pole access (DPA) remedies, which Openreach claims to support. AlixPartners does not provide any reasoning why the problems raised by DFA are in any sense more severe than those raised by DPA, or why DPA should therefore be preferred to DFA;
- AlixPartners appears to assume that Openreach will not re-optimise its pricing in the face of a DFA remedy by, for example, flattening its pricing gradient to reduce or eliminate incentives for the alleged forms of 'arbitrage'. It therefore infers a loss of demand which would be unlikely to occur in practice;
- the report simply assumes that the bandwidth gradient, as currently imposed by Openreach, is efficient and not simply an exercise of market power, despite presenting no evidence or even reasoning to this effect;
- the report criticises DFA for potentially undermining national average pricing in leased lines, without either reflecting that there is already no national average pricing due to the lack of regulation in the CLA, or presenting any evidence or argumentation that national average pricing would be beneficial;

- the report assumes, without evidence, that BT will fail to earn an adequate rate of return on its investments in leased lines in category 3 areas, when the evidence points to the opposite;
- AlixPartners has failed to take account of the role which dark fibre could have in supporting the roll-out of alternative FTTP networks, by lowering the cost of network roll-out. Rather it sees use of DFA for this purpose as a harmful arbitrage; and,
- the entire report is unquantified. Whilst various impacts are alleged or reasoned for, no detail of the scale of them is given. This means that AlixPartners' report cannot be used by Ofcom as part of any cost benefit analysis of DFA.

1.6 Overall, therefore, although AlixPartners raises many theoretic concerns, in practice many of these concerns will, in practice, not arise since they will be naturally mitigated or be of little or no importance. The report should do nothing to dissuade Ofcom from introducing DFA in the upcoming review period.

1.7 The remainder of this response sets out these issues in more detail.

2 Many of the identified problems could be solved using a different approach

2.1 The most important caveat – indeed, the most important paragraph – in the AlixPartners report comes at §74 of AlixPartners' document. This states that:

> *In the Consultation, Ofcom introduces the idea of implementing a Regulated Asset Base ('RAB') approach in non-competitive areas... it may be possible to design a RAB framework in such a way that Openreach's incentives to deploy fibre in non-competitive areas are maintained, even in the face of arbitrage. For example, this might involve a mechanism to ensure that the efficiently incurred costs of fibre services that cannot be recovered because of DFA are included in the RAB. However... such issues are beyond the scope of this report.*

2.2 This single paragraph renders all of AlixPartners concerns in the other 77 paragraphs of the document largely irrelevant. As AlixPartners notes, within a RAB model it is entirely possible to account for all of the concerns which they have raised, even if these are genuine concerns, rather than illusory. For example, if there is meaningful multiple-circuit substitution, then price increases could be allowed in order to ensure that Openreach can recover its FCC despite the lower volume of circuits. It is surprising that AlixPartners has not considered the manner in which regulatory estimates would be amended to ensure that Openreach can continue to recover its efficiently incurred costs; however, AlixPartners' approach in this regard is consistent with the overly-simplistic, unquantified and unrealistic approach which it has adopted to all of the other points which it makes in its report.

2.3 Furthermore, under Ofcom's proposed approach, it should be relatively straightforward to determine the impact of DFA on ethernet line volumes as there is a natural experiment– the parts of the category 2 area where competing networks are not constructed over the course of the next control period. In these areas, the conditions of competition will be similar to those in category 3 areas, but there will be no DFA. Ofcom will be well placed to adjust the RAB to reflect any loss of circuits due to the imposition of DFA, and it is likely to be

appropriate to do so if this is needed to ensure that Openreach earns a suitable return on its RAB.

2.4 Indeed, there is no reason that the identified problems could only be solved under a RAB approach. Ofcom frequently adjusts its forward-looking forecasts of volumes and prices to reflect regulatory changes under its current, non-RAB based, approach. There is no reason that the imposition of regulated DFA should be different. Ofcom could, and should, reduce its estimates of future ethernet circuit volumes to reflect the extent of DFA's impact on those volumes. It is unclear why AlixPartners appears to think that it is only under a RAB approach that such a volume adjustment could be undertaken. To the extent that there is circuit aggregation, this can be taken into account, by allowing a reduction of more than one EAD or EBD circuit for each DFS circuit expected to be installed.

2.5 Consequently, even if all of the concerns identified by AlixPartners in the remainder of its report were accurate– and, as set out in sections 3-9 of this report, they are not– they would be of no particular relevance. Without considering the manner in which regulation might be amended to reflect the imposition of a DFA remedy, they are essentially theoretical effects, utterly divorced from any potential practical impact on UK telecoms markets.

3 The same concerns are raised by DPA

3.1 Throughout its paper, AlixPartners presents DPA in a positive light, and, indeed, professes to be concerned that DFA could be '*undermined by*' DPA (§47). However, it does not reflect in its paper that the same arbitrage issues which could allegedly be caused by DFA could also– and possibly to a greater degree– be caused by unrestricted DPA. This is despite the implicit acknowledgement of such risks in Openreach's own submission, which states that '*risks [from DFA] are in addition to those created by DPA-based arbitrage*'.[1]

3.2 This applies to all three forms of arbitrage alleged by AlixPartners. In all instances, if DPA could be used to serve a given customer, the concerns identified would be as likely to arise using DPA as they would using DFA:

- **single-circuit arbitrage–**the bandwidth gradient could be undermined, in the same manner as with DFA, because once again there would be a divergence between the FCC contribution made by a DPA circuit (which will be unrelated to the bandwidth the circuit serves) and the contribution made on active services.
- **multiple-circuit arbitrage**– a single DPA link could, in principle, be used to substitute for the same number of circuits as a DFA link; in both cases, there would be full choice over what electronics were installed on the circuit. As with DFA, the CP using DPA would only have to pay the contribution to FCC for a single strand.
- **multiple-service arbitrage–** by its very nature, DPA enables a network builder to offer fibre broadband services to residential customers and active business connectivity services. Whether the network builder chooses to aggregate them on to

[1] OR, footnote 48.

a single circuit, or to use multiple circuits, will depend upon the preferences of the network builder and the costs of adopting each potential approach.

3.3 As such, DPA enables a network builder to have exactly the same reductions in the allocation of FCC as it can obtain by using DFA. Indeed, there is a further effect from DPA which does not exist for DFA: by using DPA in a situation where there is an unlit fibre available over a specific route, DFA further reduces Openreach's revenue and replicates an unused resource (lowering overall productive efficiency and Openreach's returns).

3.4 It is also unclear why multiple-circuit and multiple-service arbitrage could not occur over high capacity EAD or EBD circuits, or Openreach's OSA Filter Connect product. Using ethernet lines for backhaul involves either multiple-circuit arbitrage (as it aggregates together the demand of different customers) and multiple-service arbitrage (as it aggregates together the demand of business and residential customers). However, AlixPartners does not appear to object to backhaul as a form of 'arbitrage'; it is unclear why it matters whether demand aggregation is undertaken between premises and the BT exchange, or between BT exchanges, in terms of economic efficiency.

3.5 It is therefore unclear why AlixPartners (and Openreach) have a preference for DPA over DFA. The only situation in which DPA can lead to higher revenues for Openreach than DFA is where DFA is usable in instances where DPA proves unusable, for example, because DFA does not require a CP to acquire new wayleaves to break into a building, whereas the use of DPA would mean wayleave permission would need to be acquired. To the extent that DPA is ineffective in substituting for DFA, Openreach's existing FCC recovery would be left ineffective; however, in instances where DPA proves usable, there is no reason why it would be any less detrimental to FCC recovery than DFA.

3.6 Moreover, there appears to be no real rationale for AlixPartners' view that there are limited benefits from the imposition of DFA (§§68-69). DFA offers the vast majority of the benefits offered by DPA, including the ability to control what electronics are used and ability to control bandwidth upgrades. It is notable that AlixPartners does not specify any benefits which DPA has over DFA, and in TalkTalk's view such benefits are limited, and in most cases will not exist.[2] AlixPartners' view that there are limited benefits from DFA is therefore inconsistent with Openreach's view that there are significant benefits from DPA.[3]

3.7 On the basis that effective DPA will have the same impact on FCC recovery as effective DFA, it is unclear what additional impact DFA will have if DPA is as "*transformative*" as alleged in Openreach's response to the remedies consultation to which the AlixPartners report is annexed (OR §§9, 64). Indeed, OR §195 appears to argue both that DFA is a substitute for DPA, and that DPA can do all that DFA can. If this is true, and DPA proves an effective remedy across the country, then DFA should have no incremental impact on FCC recovery. It is only if DPA is ineffective that DFA will change the economics of cost recovery– and Openreach appears to be of the view that DPA will be highly effective.

[2] The main benefit that TalkTalk has been able to identify is the ability to have greater control over the routing of circuits when using DPA than when using DFA. However, while this is a benefit, it will in most cases be counteracted by the costs and management difficulties of needing to break in and out of Openreach duct. [✂]. Leased lines are mainly supplied in business districts where the presence of poles is negligible.

[3] Openreach response to Physical Infrastructure Market Review Consultation, 1 February 2019, at §3.

4 AlixPartners assumes that Openreach will not reoptimise its pricing

4.1 Single circuit arbitrage relies upon there being a bandwidth gradient where the differences in prices between various bandwidths of ethernet circuit exceed the incremental cost differences between those bandwidths. This allows for differences in recovery of fixed and common costs (FCCs) between those bandwidths, which can be seen through differences in gross margins between products. In Openreach's case, its current price structure is such that higher bandwidth products make a higher gross margin than lower bandwidth products.[4]

4.2 In the absence of a bandwidth gradient which is unrelated to costs, or inefficiency there will simply be no scope to engage in the form of arbitrage alleged by AlixPartners. Once active electronics are added to the dark fibre, the cost will be the same as that charged by Openreach.

4.3 Consequently, there is only scope for single circuit arbitrage if Openreach does not reoptimise its prices, aligning price differences with incremental cost differences, to reflect any loss of demand at higher bandwidths following the imposition of regulated dark fibre. Openreach will have strong incentives to rebalance in this way, as it will be profit enhancing to do so for a wide range of demand conditions.[5]

4.4 It is unclear why AlixPartners makes the implicit assumption that there will be no such rebalancing. There is no regulatory constraint on Openreach which would prevent it rebalancing, and it would have commercial incentives to do so. Consequently, it should be assumed that there will be such rebalancing, via the creation of a cost-reflective bandwidth gradient, and that there will be no single circuit arbitrage in practice.[6] The implications of such a rebalancing are discussed in the next section.

5 There is no evidence that the bandwidth gradient is efficient

5.1 AlixPartners titles the first subsection of section 4 of its document as '*Arbitrage risks undermining Openreach's ability to efficiently recover its fibre deployment costs*'. Notwithstanding this title, AlixPartners presents no evidence– either quantitative or qualitative– that Openreach's current approach to cost recovery is efficient.

5.2 AlixPartners' position is set out at §§35-36 of its document:

[4] Given the current cost of active electronics for ethernet, there is essentially no incremental cost difference between the cost to Openreach of supplying a 10 Mbps, 100 Mbps and 1 Gbps circuit.

[5] Effectively, the two conditions for this to be profitable are (1) that the elasticity of demand for 10 Mbps and 100 Mbps circuits is higher than for 1 Gbps and 10 Gbps circuits before dark fibre is introduced and (2) that the imposition of dark fibre increases Openreach's elasticity of demand on 1 Gbps and 10 Gbps circuits by more than it increase Openreach's elasticity of demand on 10 Mbps and 100 Mbps circuits.

[6] This is consistent with AlixPartners' comment at §40 and footnote 39 that reducing the bandwidth gradient has reduced the scope for single circuit arbitrage.

FCC typically constitute a material proportion of overall costs for telecoms network operators. The approach adopted to recovering FCC can have a material effect on allocative efficiency. Ofcom has historically recognised that allowing the mark-up on marginal (or incremental) costs for FCC to vary according to the elasticity of demand results in a more efficient outcome.

If the price elasticity of demand varies across the various downstream services that consume fibre (e.g. different types of residential and business services), an efficient approach to recovering the costs of deploying that fibre would involve a differentiated pricing approach.

5.3 Followed up by, at §38:

Single-circuit arbitrage will erode or eliminate Openreach's ability to achieve greater cost recovery for higher bandwidth wholesale business connectivity services as CPs switch to DFA for such services. This will reduce Openreach's ability to efficiently recover its FCC...

5.4 It can be seen from comparing these paragraphs that while §36 says that "*if the price elasticity of demand varies*", §38 states that the elimination of a bandwidth gradient "*will reduce Openreach's ability to efficiently recover its FCC*". There is no evidence cited for why a conditional statement has become a hard statement that there will be reduction in economic efficiency.

5.5 Indeed, AlixPartners does not engage at all on evidence that the bandwidth gradient is efficient. As a matter of economic theory, a bandwidth gradient will only be efficient, and improve the manner in which FCC are recovered, to the extent that higher charges are levied on lower elasticity customers. If the opposite situation pertains– that higher charges are levied on higher elasticity customers, then the current bandwidth gradient will in fact act to reduce economic efficiency. If elasticities are the same across customers taking all bandwidths, then the most efficient approach will be to set the same margins for all customers. Even if the elasticity of demand were higher for higher bandwidth customers (implying than some gradient may be efficient) then AlixPartners has not provided any evidence to demonstrate that the existing price gradient is more efficient than no gradient.

5.6 10 Gbps products are predominantly used for backhaul at present, as Openreach has priced them in such a way as to choke off demand (thereby raising the costs of rivals to BT retail, harming their ability to improve their quality of service standards). [✂]. In this case, substitution of this type will reduce allocative efficiency, as it involves prices being set in a manner which creates incentives for market participants to use a product mix which is both higher (underlying) cost to provide, and yet provides less capability. This type of substitution is therefore strong evidence that the bandwidth gradient acts to reduce, rather than increase, overall economic efficiency.

5.7 In order to derive its conclusion at §38, AlixPartners therefore should have assessed, and presented in its report, evidence on the different elasticities of demand of various customer groups. It has not done so, and has not referenced any other source which has done so.[7]

[7] The only reference is to a CAT judgment in 2013, which itself referred to a decision which Ofcom had made on the basis of evidence gathered in 2011 and 2012; Ofcom's explanation of its decision was based on qualitative opinions from market participants, rather than detailed analysis of evidence on elasticities of demand. Indeed, the evidence set out in the 2013 BCMR, at §§8.26 *et seq*. shows that

5.8 In fact, there are strong reasons to infer that Openreach's current price gradient is not based on Ramsey pricing principles, and therefore will not be efficiency enhancing:

- 10 Mbps products are now end of life, and not actively being sold. The installed base is, however, relatively inelastic as customers are loath to incur the disruption of switching lines. This contrasts with 1 Gbps products which are a growth area of the market, and where customers are consequently able to consider the offers of various providers.
- 10 Gbps products have not been price controlled to cost at any previous point in time (and are not currently proposed as being price controlled at any point in the future). To the extent that there is substitutability between 1 Gbps and 10 Gbps products [✂] Openreach will have had incentives to keep 1 Gbps prices high, to enable a higher 10 Gbps price to be sustained. The higher 10 Gbps price will itself increase BT's margins and therefore profits, as demand for 1 Gbps and 10 Gbps products taken together is likely to be very inelastic.[8]
- as 10 Gbps products have not been included in the charging basket or regulated to cost, then their high prices have not been required for BT to recover its FCC, but rather provide BT with supernormal profits. There is no sense in which a lower price for 10 Gbps circuits means a need to rebalance by increasing prices of lower bandwidth products.

5.9 In reality, it appears at least as probable that the most economically efficient price structure for ethernet products would involve *higher* margins for lower bandwidth products than for higher bandwidth products. This reflects that much of the demand for 1 Gbps and 10 Gbps products is marginal, as there is a low installed base at these speeds relative to the number of lines being newly installed in each period. In TalkTalk's experience, there are significant barriers to switching between either speeds or providers for installed customers: ethernet circuits need to be cancelled and reprovided, meaning that there will either be circuit downtime, or dual running of circuits (with the associated costs); a need to pay the new circuit installation cost; and the cost of hassle to the business switching between speeds.

5.10 These switching costs will reduce the elasticity of demand for 10 Mbps circuits, which are no longer being newly installed in meaningful volumes.

5.11 In contrast, new installations of 1 Gbps circuits are much higher relative to the existing installed base; new customers are able to freely choose between bandwidths and providers without incurring the switching costs of pre-existing customers. This will imply greater sensitivity to pricing and conditions.

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dark fibre was favoured by the vast majority of industry participants: Vodafone (§§8.26-8.29), TalkTalk (§8.30), Geo (§§8.31-8.32), Vtesse (§8.33), and Verizon (§§8.34-8.35) were all in favour. The only CP against the imposition of dark fibre was, unsurprisingly, BT (§§8.36-8.38). Finally, views expressed in 2011 and 2012 in the context of a three year review are of little relevance when deciding whether dark fibre should be imposed in the very different technological and market context of the 2021-2026 period.

[8] There are essentially no substitutes to Openreach EAD lines for backhaul of either fixed or mobile broadband traffic in the majority of the UK.

5.12 AlixPartners does not consider any of these points; it merely assumes that the existing bandwidth gradient is efficient and proceeds from that point. If the bandwidth gradient is not appropriately constructed (either because elasticities of demand are broadly similar or, as argued above, 10 Mbps margins should be higher than 1 Gbps and 10 Gbps margins), then disrupting this gradient will in fact increase economic welfare and allocative efficiency. This possibility has simply not been considered by AlixPartners, but appears a more realistic prospect than the current gradient being the optimal (or close to optimal) one.

6 There is nothing to indicate that national average pricing exists and would be beneficial

6.1 AlixPartners sets out one of its key concerns regarding the harms caused by arbitrage in §21(b):

> *[Arbitrage] can also be harmful. For example, it can undermine... national average pricing. Where costs vary geographically and this is reflected in different pricing structures for different services, arbitrage (and related cherry-picking concerns) can undermine national average pricing.*

6.2 The only reasoning underlying this concern is set out in footnote 25:

> *This may concern Ofcom or the Government if they consider that national average pricing has important social benefits*.

6.3 Based on this, it is unclear whether even AlixPartners itself considers that national average pricing is beneficial. It does not make any argument that it is beneficial, and does not cite any evidence for the proposition that Ofcom or Government do actually consider that national average pricing for leased line services has any social benefits.

6.4 It is important to distinguish between national average pricing for access lines (which, of course, Ofcom also proposes to abolish in its remedies proposals) and for leased lines:

- there is not, and has not been for some time, national average pricing for wholesale leased lines. Openreach does not face a regulatory price constraint in the Central London Area, and is free to charge whatever prices it chooses in that area of the UK. In other High Network Reach areas, Openreach faces only a fair and reasonable pricing obligation, rather than the hard price cap it is subject to in other parts of the UK. As such, Openreach is free to set prices in the CLA and HNR areas without regard to prices across the rest of the UK.
- there has never been national average pricing for business connectivity products. Most business connectivity services based on leased lines are priced, even by national operators, on a fully bespoke basis, as businesses seek different combinations of speed, resilience, and service wrap, across one or many sites. Indeed, larger businesses may buy connectivity on a European or global basis rather than merely within the UK. There is no sense in which there is national average pricing from any operator when contracts are individually negotiated or tendered for.
- for newly installed leased lines, even in regulated areas of the country, Openreach levies excess construction charges ('ECCs') on leased lines which cost more than a threshold amount (£2,800 in 2018/19) to install. This de-averages the both the initial

and lifetime costs of a leased line even when bought in regulated areas, as the ECCs will themselves systematically vary from area to area.

- different levels of competition pertain across the UK. While residential retail competition is similar in most of the UK (with BT, Sky and TalkTalk all serving the vast majority of the UK, and Virgin Media available in around half of homes), the same is not true in leased lines. Many retail leased line operators are only active in specific parts of the country, such as London or other city centres, and conditions of competition therefore vary widely across the UK, with different price and service options available in some areas but not others.[9]
- while customer confusion can be an issue in residential communications services, creating a rationale for national average pricing, the same is not true of medium and large businesses buying connectivity products.[10] For such businesses, purchases will be undertaken by professionals whose job it is to meet needs, and who will be able to assess competing bespoke offers in a rational and objective manner. There is consequently no advantage to national average pricing for such firms.
- although politicians are often concerned about perceived fairness and 'postcode lotteries' for individual consumers, there is seldom any concern about regionally differentiated pricing for businesses, which experience different costs across the country in multiple ways: different wage rates, different property costs, and different business rates being amongst the most significant. In the face of such substantial differences in cost bases, it is simply not credible that there would be meaningful concern about regional differences in leased line pricing.

6.5 It is notable that when mentioning national average pricing, AlixPartners does not refer to its impact on efficiency. Allocative efficiency will be maximised when prices reflect incremental costs; both pricing below incremental costs and above incremental costs are potentially harmful. In practice, fixed and common costs will often need to be recovered, but where the elasticity of demand is the same across various products offered by a firm, it will generally be efficiency maximising to recover the same amount of common costs from each product sold.

6.6 In leased line markets, the underlying costs of offering services will differ from location to location. This is will reflect differences in line lengths, lane rental charges for undertaking work, labour costs, and the difficulty of obtain planning consents. If the elasticity of demand for leased lines does not vary systematically between geographic areas, and vary in a specific manner where the elasticity is higher in higher cost parts of the country, then national average pricing will cause a loss of allocative efficiency compared to an approach of setting prices based on the cost to serve in each area.

6.7 While considerable information would be required to quantify the loss of allocative efficiency caused by national average pricing, and as such the loss may be small, even a small potential loss in allocative efficiency must be weighed against some other meaningful societal gains from national average pricing for leased lines. AlixPartners has presented no

[9] For the avoidance of doubt, TalkTalk considers that Openreach holds SMP in leased line markets in all parts of the UK. However, it faces different competitors in different geographic areas, which leads to different competitive dynamics in those areas.

[10] Few small businesses will have sufficient bandwidth demand to require a leased line.

evidence of such gains. Hence, even if there were currently national average pricing (and there is not) then undermining such national average pricing might efficiency enhancing.

6.8 In light of these points, it is unclear what social benefits could exist from national average pricing for leased lines. AlixPartners' concern regarding national average pricing simply fails to engage with the reality of the situation in leased line markets.

7 There is no evidence that BT will fail to cover its costs of investing in ethernet products

7.1 At §44 of its paper, AlixPartners states that:

> *Openreach has already invested significant amounts in non-competitive areas to deploy fibre to provide business connectivity services and to support fibre-to-the-cabinet deployment. The arbitrage opportunities enabled by the introduction of 'cost-based' DFA, in addition to DPA, are likely to further compromise Openreach's ability to earn an appropriate risk-adjusted return on these historic investments. This ex post 'expropriation' of sunk investments is likely to increase the perceived regulatory risk of fibre investment. The perception of greater regulatory risks would be expected to weaken Openreach's incentives to invest further.*

7.2 Not only does this paragraph proceed without any evidence, it elides two different issues and what evidence there is points in the opposite direction:

- *two different products are elided in this paragraph*– the paragraph discusses both '*fibre to provide business connectivity services*' and fibre to support FTTC build. These are completely separate products are likely to be impacted by regulated DFA in very different ways. There is no mechanism put forward by AlixPartners in which DFA will undermine returns from FTTC products, which are very different and in different economic markets from DFA or leased lines. It must therefore be concluded that the rest of the paragraph is about BT's returns on fibres for leased line services, as there is no reason to think that there will be an impact on returns on FTTC products.
- *AlixPartners cites no evidence to support its claims that Openreach will not earn adequate returns*– AlixPartners' paper was on behalf of Openreach, and therefore should have had access to all of Openreach's internal financial data. AlixPartners has not presented any such data. Ofcom should draw negative conclusions from this– if there had been evidence that Openreach would earn an unreasonably low return on its investments then AlixPartners would very likely have presented such data. That AlixPartners has not done so implies that Openreach will earn at least a reasonable rate of return on its ethernet investment in category 3 areas.
- *the evidence that does exist on returns points towards BT making supernormal profits on these products*– there is no specific data published on Openreach's returns in category 3 areas at present, as Ofcom has not yet adopted this market definition, and may never do so. However, the returns on ethernet products have been above Openreach's cost of capital in five of the last six years: 24.4% in FY14, 21.6% in FY15,

> 23.1% in FY16, 14.8% in FY17, 9.3% in FY18, and 3.5% in FY19.[11] Given such high returns, compared to a current estimate of BT's WACC for leased line products of 8.0%, there appears little risk that BT will fail to earn a reasonable rate of return over the product lifetime.[12]

7.3 Even if Ofcom did not adjust regulatory price caps to reflect a new regulatory obligation to offer DFA (see section 2 of this report), it therefore appears unlikely that BT would in fact be forced into a position where it failed to earn a reasonable rate of return on its ethernet assets, and was subject to expropriation. There is also little case for a significant uplift in the required rate of return to allow for the fair bet in this instance. Fibres are not, and have not been for many years, a novel technology with significant take-up risk. Rather, they are low risk assets which, in category 3 areas, have had no effective competition facing them, allowing BT to earn the very high rates of return which have historically been seen. There was little risk that BT's investments in deploying fibres would fail to earn their WACC over the project lifecycle.[13]

7.4 However, in practice, as set out in section 2, TalkTalk would expect Ofcom to adjust price caps to reflect any impact which DFA may have on volumes. As such, even if there were a significant impact on Openreach's ability to cover its costs *at current price caps*, once there has been a regulatory adjustment any impact will be neutralised.

8 No account is taken of DFA's role in supporting FTTP roll-out

8.1 AlixPartners' paper appears rather internally inconsistent on the impact of DFA on FTTP roll-out. At §§47-50, AlixPartners alleges that arbitrage '*risks undermining fibre deployments by other CPs*':

> *If Ofcom inappropriately introduces DFA in areas that are in fact prospectively competitive, due to an incorrect market analysis or changing market conditions, it also risks undermining the incentives of rivals deploying their own fibre networks in such areas.*

8.2 No evidence or analysis at all is identified in support of this assertion, and AlixPartners provides no detail of the manner in which incentives will be undermined. AlixPartners then proceeds to assert that DFA may also undermine incentives to invest in areas where DFA is *not* available through some form of unspecified benchmarking effect, reducing the prices which they are able to charge in category 2 areas.

8.3 However, §27(c) sets out that, in AlixPartners opinion, altnets may use DFA in order to support network build:

[11] Sources: BT Regulatory Financial Statements, section 5. For FY19 and FY18, the figure is for 'Low Bandwidth CISBO Rest of UK'. For FY17 and FY16, the figure is for 'CISBO Rest of UK'. For FY15 and FY14, the figure is for 'AISBO non WECLA'.

[12] 8.0% was the WACC estimated by Ofcom in the 2019 BCMR for 'Other UK Telecoms'.

[13] Under the fair bet, if there is limited downside risk, there is correspondingly little need to allow returns in excess of the WACC to provide a suitable risk-adjusted rate of return.

a CP [could use] DFA (again, potentially in combination with other inputs, such as DPA) to provide a fibre broadband services [sic] to residential consumers.

8.4 A CP will presumably only use DFA to support its FTTP broadband services to consumers if this is a lower cost method of doing so than DPA or self-build of the network. In essence, AlixPartners 'multiple-service substitution' will only occur in ways which increase FTTP build.[14]

8.5 As such, AlixPartners own analysis indicates that DFA is likely to reduce the cost of certain types of FTTP network build. This is particularly true for an operator such as Hyperoptic, which TalkTalk understands leases Openreach ethernet circuits in order to provide a connection to the basement of multi-development units in which it is rolling out its FTTP network. The introduction of dark fibre would have the potential to meaningfully reduce the costs of Hyperoptic's rollout if DFA were available in a target location. [✂].

8.6 Moreover, not all FTTP networks offer leased lines at present. [✂]. We understand that Hyperoptic and Gigaclear also do not offer leased line products at the present time, and so their build is unlikely to be contingent on the ability to charge high prices for leased line circuits. AlixPartners has failed to reflect these facts in its analysis, and implicitly appears to assume that most or all FTTP network builders will be basing their business plans around leased line sales. In reality, for mixed networks the proportion of revenues derived from leased lines is generally low, and the impact which any change in leased line pricing could have on FTTP rollout is consequently limited.

8.7 Consequently, even if the imposition of regulated dark fibre did make a meaningful difference to the volume of leased lines sold by altnets, this would not necessarily mean that there would be a reduction in FTTP roll-out. Rather, the fact that many significant FTTP builders' businesses are not contingent on leased line sales, and dark fibre reduces the cost of roll-out of FTTP networks (as AlixPartners themselves set out) means that the net impact may be to increase altnet FTTP roll-out.

9 AlixPartners has not quantified its concerns

9.1 AlixPartners provides no data underlying any of the concerns which its sets out with respect to DFA (see §1.3 of this report). For example, consider 'multiple-circuit substitution', where the concern is set out by AlixPartners at §27(b) and §31:

a CP uses DFA (potentially in combination with other inputs, such as DPA) to provide services that substitute for multiple Openreach active business connectivity services on the same route to aggregate traffic on a single fibre. Such substitution could be undertaken by a CP self-supplying active services for its retail customers, or it could be undertaken by a CP using DFA to sell wholesale active services to downstream CPs (i.e. in competition to Openreach).

The possibility of multiple-circuit arbitrage also reflects the fact that CPs could use DFA to undercut multiple active business connectivity services. The incentive to do so is likely to be more significant than for single-circuit arbitrage. This is because multiple-circuit

[14] Or build of dedicated leased line networks.

arbitrage allows CPs to reduce the cost of supplying the business park by using a single fibre strand to substitute for multiple Openreach active services (which would each use a separate fibre and each make contributions to the recovery of FCC). In economic terms, this allows the CP to only pay the contribution to FCC on a single fibre strand, thus avoiding the combined contribution to FCC from multiple active services.

9.2 However, even if it is accepted that this analysis is correct, its relevance is very unclear. For example, this analysis:

- does not consider what proportion of current leased line demand would be vulnerable to such arbitrage, in either volume or revenue terms, by being located in areas where demand aggregation would be plausible, despite Openreach having the data available to estimate the proportion of vulnerable demand;
- does not consider whether such arbitrage would fit the business models of any or all potential purchasers of dark fibre;
- does not consider whether leased line customers– who tend to be cautious about product innovation– would accept such demand aggregation, or would perceive it to be risky;
- does not consider whether such an approach would be consistent with the demand of many customers for resilient services, often with a need to adopt different physical routes to avoid issues such as line cuts;
- does not consider whether there are any barriers to such arbitrage, including difficulties in aggregating demand in the manner which this requires, or wayleaves issues which might prevent CPs from digging across business parks or accessing buildings;
- does not take into account the impact of excess construction charges for ethernet lines and DFA lines, which would likely be the same for a single DFA line and for multiple ethernet lines, and would mean that FCC for constructed elements of network would be fully covered in either case;
- does not consider technical issues, such as whether aggregating demand in this way could lead to line contention, and if so whether this would lead to a lower quality of service by introducing (for example) jitter to the line.

9.3 It also does not present any evidence that this approach has been used in other Member States where dark fibre is available on a widespread basis, or that it has ever been used in the UK through commercially negotiated dark fibre. TalkTalk would expect that if this concern was real, rather than a fiction of AlixPartners' (or Openreach's) imagination, that there would be examples of where it had occurred and had an impact on the number of leased lines sold. In practice, there are no such examples. Indeed, there are not even examples of network operators who offer dark fibre taking any contractual steps to avoid the types of behaviour which AlixPartners professes to be concerned about.

9.4 As such, even if this concern were correct and was not already raised by the imposition of unrestricted DPA (see section 3 above), AlixPartners has presented no evidence that it is anything more than a theoretic concern which would have no practical impact on the sustainable price level for leased line services, whether for Openreach or for any other operator.

9.5 The same is true throughout the paper. There is not one piece of data presented in sections 3 or 4 of AlixPartners paper. As a consequence, AlixPartners has simply asserted that its concerns are realistic and non-negligible. There is no evidence that this is actually the case.

9.6 Finally, it is notable that while AlixPartners does nothing whatsoever to quantify its concerns in its paper, it criticises Ofcom for exactly the omission of such quantification. As AlixPartners says:

> *It may be that Ofcom intends to undertake an impact assessment in a future consultation.*
>
> *In our view it is important it does so to ensure that any remedies are appropriate and proportionate*.[15]

9.7 AlixPartners itself thus makes the very error– and an extreme form of the same error– that it criticises Ofcom for.

[15] AlixPartners, §69 and footnote 70.