

THE MARKET FOR CORPORATE CONNECTIVITY IN THE UK

Regulatory policy requirements

November 2018





CONTENTS

Exe	cutiv	e Summary	4
1	Policy context 1.1 High quality access is critical for economic growth 1.2 The policy issues in the mass market differ from those in the corporate		6
		market	7
	1.3	Conclusion	9
2	The link between regulation and investment 2.1 The scope of additional investment due to higher corporate connectivity		10
	Z. I	The scope of additional investment due to higher corporate connectivity prices may be limited	10
	2.2	Roll out of full fibre networks may only have limited additional constraint on Openreach pricing	11
	2.3	Conclusion	14
3	Future regulation 1		
	3.1	There does not appear to be a clear case for relaxing the regulation of corporate connectivity	15
	3.2	Charge controls have become effective	16
	3.3	Dark fibre access allows further competition to develop	17
	3.4	Conclusion	19

EXECUTIVE SUMMARY

This paper sets out the regulatory policy requirements necessary to sustain and improve competition for the enterprise 'leased line' market – part of Ofcom's business connectivity market. The needs of this critical market have often been overlooked, or conflated within the wider policy debate concerned with improving the quality of service offered to mass market customers.

The Government's long term vision is to have full fibre coverage to all premises by 2030 and to have a number of competing full fibre providers across a significant proportion of UK premises. The principal objective of government policy is to improve the quality of service for residential and SME customers who are currently reliant on copper for the final connection. However, the roll out of full fibre networks to serve these customers may have implications on the competitive conditions within the enterprise fibre market, where Openreach remains dominant. The extent and pace of any improvement in competitive conditions in the established corporate fibre market from wider consumer-focused full fibre deployment remains uncertain.

With clear differences between the nascent consumer fibre market and the established enterprise fibre markets in the UK, it is very likely that a differentiated regulatory approach will be required to optimise outcomes for all consumers (residential, SME and enterprise), taking account of differing market circumstances. Vodafone has engaged Frontier to review the appropriate regulatory policy for corporate connectivity during the next decade.

One of the key drivers of the need for a differentiated approach between the residential and enterprise sectors is the very different nature of switching costs and benefits.

At present, operators in the downstream enterprise market, such as providers of managed networks services or systems integrators, largely rely on Openreach as a wholesale provider. As a result, a large share of the addressable business market is already connected to Openreach's fibre network. This is shown by Ofcom's evidence "BT's ubiquitous network gives it an advantage over other operators as it will more often have a physical infrastructure connection (fibre or duct) to customer sites. Our analysis shows that BT had existing duct connections to [\gg]% 81-90% of its 2017 new customer ends in the UK excluding the Hull Area, compared to 45% across all rivals, collectively. We note that [\gg]% of BT's 2017 new customer ends were fibre connected compared to less than 45% for rivals (we were unable to estimate the exact figure for rivals due to data limitations)." Further, Vodafone has found that approximately 75% of the time when it orders a new

Paragraph 6.23 https://www.ofcom.org.uk/ data/assets/pdf file/0025/124729/bcmr-2018-volume-1.pdf. We note that whilst a number of these figures are redacted, Ofcom will be aware of the precise values.

Openreach fibre circuit, there is already a fibre connection in place at those premises.

This means the benefits of switching to other access providers is far more limited than in the residential sector where competitors can offer improved bandwidth and quality of service compared to households' legacy copper based connections.

Openreach's dominance in the corporate market has led to a large quantity of sunk costs, both by customers paying excess construction charges (ECCs) to Openreach to extend leased line fibre to business customer premises and operators investing in backhaul built out to BT exchanges, in order to use the most economic regulated wholesale products. These sunk costs form a barrier for alternative providers to move to self-supply (i.e. extending networks or moving hubs outside of BT exchanges), and a barrier to switching from customers who will be unwilling to bear the customer specific costs (equivalent to ECCs) to replicate existing infrastructure. This is in addition to relatively high switching costs for alternative providers relative to many residential users due to the need to negotiate building access with landlords and the high potential costs of any downtime for mission critical applications.

These high switching costs (and relatively low switching benefits) impact on the appropriate regulatory approach. We find that:

- Regulatory policy needs to reflect that this market for enterprise fibre is mature, with many corporate sites already connected over full fibre networks. This means that the potential long term gains to these customers from roll out of full fibre networks is far less than for customers still using copper networks and as such, the dynamics of any regulatory trade-off between short term losses and long term gains differs from mass market customers. A 'one size fits all' approach to regulation of mass market and corporate services is therefore unlikely to be optimal;
- By the middle of the next decade regulated unrestricted access to Openreach's duct and pole infrastructure may increase the competitiveness of the enterprise market by allowing competing providers (CPs) to compete over more of the value chain. However, the time to roll out competing networks and the nature of the market means that this is unlikely to adequately constrain Openreach's market power across the UK in the next two market review periods;
- Existing regulation has been effective in the most recent years in constraining Openreach's ability to set the level of prices (following a period where returns on these services were at an excessive level despite charge controls), and has allowed for increased competition at the retail level. A regulated dark fibre access product would allow competition to further develop by opening up more of the value chain to competition.

1 POLICY CONTEXT

1.1 High quality access is critical for economic growth

The wholesale market for fixed "high quality access" is critical to delivering services for corporate users and increasingly for mobile operators, both of which have a high contribution to economic growth through innovation such as cloud computing and 5G mobile service provisioning. As such availability of cost effective, high bandwidth services are vital for the UK's prosperity in the medium term.

1.1.1 There are potential economies of scope between the provision of corporate and mass market access ...

Where corporate and residential customers are situated close together there may be potential economies of scope in the provision of corporate and mass market products, with a common infrastructure of ducts, poles and fibre cables able to serve both sets of customers. As such, in these cases regulatory policy with respect to mass market services may have an impact on the provision of corporate services and vice versa.

1.1.2 ... but there are significant supply and demand side differences

Many corporate customers may be in distinct geographic locations² to mass market customers, i.e. as they are located in dedicated business parks or in central business districts. In these cases there will be limited overlap between fibre deployed to serve residential customers and those required to service corporate customers and thus, any economies of scope will be limited.

Further, the corporate market has a number of features that currently distinguish it from mass market broadband products such as those purchased by households:

- Services are currently provided over uncontended, full fibre access networks compared to mass market access which is generally over copper based access networks with a degree of contention;
- Openreach has an obligation to supply wholesale connectivity services across the UK, with customers with a sufficient willingness to pay already connected to full fibre networks leading to a very high service penetration on the Openreach network; and
- Services are provisioned and operated using different processes to mass market broadband to ensure high levels of availability and require different

For example business customers may be in different postcodes even if there are residential customers in the same postcode sector.

equipment. Even if residential customers migrate to full fibre networks, they are likely to have services delivered over different technologies (e.g. GPON) to corporate customers who generally require point to point fibre.

- Switching costs for corporate customers are generally much higher:
 - The cost of connecting and extending the fibre networks to individual corporate customer premises may be very significant;
 - Costs to both customers and downstream suppliers of disruption and ensuring service continuity to customers (including the costs of any downtime) may be more substantial;
 - A single business may have multiple sites, complicating the switching process; and
 - Additional permission from landlords may be necessary for physical access to buildings.

1.2 The policy issues in the mass market differ from those in the corporate market

There is generally a trade-off in regulatory policy between:

- Delivering static efficiency benefits, setting prices as low as possible to ensure allocative efficiency; and
- Providing strong incentives to minimise the cost of delivery and achieve dynamic benefits resulting from innovation and investment.

However, this trade-off may differ across different markets and segments given differing objectives.

1.2.1 In the mass market high weight is given to investment incentives

The trade-off between short term and long term benefits is apparent in Ofcom's approach to regulation of mass market broadband services, where BT has been allowed pricing flexibility on higher bandwidth services, which could lead to higher prices for consumers, in order to incentivise investment in full fibre networks. This trade-off needs to reflect the potential asymmetry of costs and benefits:

- An increase in prices in the short term could have a welfare cost due to deadweight losses; but
- If there is high willingness to pay for the additional quality offered by full fibre networks, a reduction in investment and hence in availability of full fibre networks could lead to much larger welfare losses in the long run.

This means for mass market customers, paying higher prices in the short term could be welfare enhancing overall compared to a counterfactual where prices are

regulated at a low level in the short term, if this leads to higher investment and hence coverage of full fibre networks.

1.2.2 The benefits from investment are lower for corporate customers

The potential benefits are different in nature

For corporate customers the trade-off is quite different as they already have access to full fibre services, since having an established high willingness to pay for the quality provided. As such, further investment will not be expected to deliver significantly increased service quality and corresponding large welfare benefits.

Ofcom's ideal outcome is that, investment may lead to efficiencies due to increased competition and/or economies of scope with mass market fibre which could then lead to lower prices for corporate customers. However for these customers, there is not the same asymmetry as for mass market customers as investment resulting from allowing Openreach to set higher prices in the short term would only lead to lower prices in the long run compared to a counterfactual when Ofcom constrains prices to a competitive level in the short run.

Switching costs will further reduce the potential benefits of competition

Any potential future benefits are further reduced as the high level of segment- and customer- specific sunk costs required to serve corporate customers makes it difficult for new entrants to deliver at a lower forward looking cost than Openreach:

- There are fixed costs in product development, provisioning and operations required to deliver high quality services to corporate customers over and above those incurred to serve mass market customers; and
- For many corporate customers there are significant additional costs for extending the network to the customer which Openreach has already sunk and has recovered through Excess Construction Charges (ECCs).

Connection costs can be of a similar order of magnitude to expected customer lifetime revenues post connection. For example, connection costs could be £10,000 with annual rentals around £2,500 a year, meaning that the margin on many corporate customers could be negative if the customer cannot be charged for these connection costs. In addition, there are other downstream switching costs³ such as the need to reconfigure networks out of hours to minimise downtime which competing wholesale suppliers would need to effectively compensate retailers and customers by reducing prices below that of the incumbent provider.

frontier economics 8

For example Vodafone estimate that their labour cost of switching a circuit between two providers in a building, if this needs to be carried out of hours is £[≫]

Even if entrants have significantly greater efficiency than Openreach, hence are able to lower forward looking costs to compete on price, the rate at which corporate customers migrate to entrants will be reduced by other barriers to switching:

- Corporate customers on multi-year contracts would need to pay termination fees to change provider;
- Corporate customers will wish to ensure service continuity which will usually entail running dual networks during any service migration; and
- New access to multi-tenant building may require extensive negotiations with landlords to facilitate access.

These switching costs, coupled with the relatively low benefits, means that the rate of migration from Openreach to entrants is likely to be far smaller than in the residential customer segment.

1.3 Conclusion

This fundamental difference in the nature of the gains from further investment for the two customer groups means that the assessment and approach that Ofcom adopted in the mass market (the WLA decision) cannot be simply transferred to the corporate market (the BCMR).

In order to determine the appropriate approach for the corporate market, Ofcom will need to reach a view on a number of factors:

- The degree to which allowing Openreach to increase prices above a competitive level for corporate customers in the short term will significantly increase investment; and
- The degree to which any such investment will lead to increased competition which will in turn constrain prices for corporate services to a lower level than under the counterfactual where Ofcom maintains the current regulatory framework

2 THE LINK BETWEEN REGULATION AND INVESTMENT

As noted above there is a bi-directional link between regulation and investment:

- Regulation can have an effect on operators' incentive to invest; and
- Investment can lead to greater competition and hence a reduction in the need to regulate going forward.

This section looks at these two effects with respect to the corporate customer market.

2.1 The scope of additional investment due to higher corporate connectivity prices may be limited

Compared to the mass market segment, the revenue and profit opportunities available to operators considering investment in the enterprise segment are significantly lower. The figure below shows Openreach's revenue and return in these segments in FY 2018.

£4.5bn £4.0bn £4.0bn £3.5bn £3.0bn £2.5bn £2.0bn £1.6bn £1.5bn £1.0bn £0.6bn £0.5bn £0.2bn £0.0bn Revenue Profits (return) ■ Mass market (WLA + WFAEL) Enterprise (CISBO)

Figure 1 Openreach revenue and profits for mass market and enterprise segments

Source: Frontier analysis of Openreach income statement (RFS) for year end 31 March 2018

Ofcom changing its regulatory policy and allowing Openreach to increase the prices paid for corporate services may have limited impact on investment in full fibre networks:

- There are significant barriers to switching meaning that even if operators were to invest to 'pass' corporate customers, the rate of customer acquisition would be relatively low for existing customers; and
- If there was an expectation that investment would lead to overall price reductions in the long run due to greater competition, then higher prices now may have little impact on overall investment incentives.

In the mass market, significant investments are being made or are planned. These investments offer the potential for significant upgrades in terms of quality for residential customers, which will provide customers who have a willingness to pay for higher quality with an incentive to migrate to the new network even if this leads to increased costs overall.

For corporate customers, the migration from copper-based connections to fibre has already happened. Indeed, a number of providers entered the market during this transition⁴ offering higher quality services than BT was offering over its copper based network at that time. However with corporate customers now receiving the quality of service they require, the decision to switch will depend only on whether the new provider can offer a lower total cost of ownership.

However, as noted above entrants are at a significant cost disadvantage compared to Openreach and in addition need to overcome other barriers to switching meaning that they will need to offer discounts compared to Openreach in order to offer a lower total cost of ownership.

This means that the contribution of each corporate customer to the fixed and common costs of the entrant's network roll out will be relatively low and the rate of customer acquisition will also be relatively low.

2.2 Roll out of full fibre networks may only have limited additional constraint on Openreach pricing

2.2.1 (Unrestricted) DPA has limited ability to spur substantial further investment

Ofcom has regulated access to Openreach's duct and pole infrastructure (DPA) in order to encourage additional investment in fibre networks, including spurring Openreach's own investment. Currently, DPA is restricted in that it can only be used where the primary use is to provide mass market broadband services, although enterprise services could be provided alongside these services enabling

frontier economics

11

⁴ For example COLT, C&W and MFS.

economies of scope between the two services. Ofcom is also proposing to remove the current restriction so that DPA can be used to deliver any combination of products, including, for example, corporate services alone. This suggests that DPA, if effective, could expand the competitive provisioning of corporate access in three ways:

- By encouraging the roll out of networks focussed on the mass market, but also providing enterprise access in new geographies;
- By enabling the roll out of networks focussed on enterprise access in new geographies; and
- Extending the reach of existing network offering enterprise access by reducing build costs to connect new customers.

We consider each of these below.

Roll out of mass market networks

There are three types of current and announced roll out plans for new networks focussed on mass market services:

- Virgin's Project Lightning, which will increase Virgin Media's footprint with a mix of full fibre and hybrid fibre co-axial (HFC), which should allow Virgin Media to offer high quality services within that footprint;
- Roll out of full fibre networks by recent market entrants such as CityFibre or Infracapital; and
- Openreach's competitive response in rolling out its own full fibre networks⁵.

Openreach's own roll out of full fibre network will not directly constrain Openreach's pricing of enterprise services. Moving to a single infrastructure could provide significant joint efficiency gains⁶, but the extent to which these are passed through to customers will largely depend on whether Ofcom requires this through a binding charge control. In addition, as Openreach already has a large amount of point to point fibre in situ, with associated sunk costs and high switching costs, Openreach would be unlikely to make changes to existing fibre circuits, so any efficiency gains would only apply to new supply. To the extent that mass market services may provide a potential substitute for some corporate services, Openreach would likely seek to differentiate mass market and corporate services, for example through different repair times or contention, to a sufficient extent to ensure there was little actual substitution.

Virgin Media's Project Lightning will extend the geographic scope in which Virgin Media can offer enterprise services. However, Virgin Media's progress has been

frontier economics | 12

In some areas BT will upgrade the existing copper based infrastructure with new technology such a G.Fast.

Joint in the sense that this could reduce the overall cost of serving both mass market and high quality customers compared to the status quo of separate copper and fibre networks.

slow and significantly delayed, meaning the impact on the overall market may be small even by 2025. For example, In Q2 2018, Virgin Media announced that it had covered an additional 118,000 homes during that quarter, meaning they had covered a total of 1.3 million homes in the UK.⁷ At this pace of roll out they will not meet the 4 million premises target by 2019.

Even with further progress from Virgin Media, the impact on competition may not be significant - in previous BCMR decisions, Ofcom has determined that a single additional operator alone will not be sufficient constraint on BT's pricing.

This suggests that the constraint on Openreach's pricing will be dependent on the roll out plans of other potential providers such as City Fibre and Infracapital. Where these providers have rolled out full fibre networks in areas overlapping with Virgin Media and have put in the processes to effectively deliver enterprise services in that area, they may help constrain Openreach's prices. However the extent of the competitive constraint may be limited for a number of years:

- The time taken to roll out full fibre networks may mean that it is towards the end
 of next market review period (i.e. 2026) before a significant proportion of the
 country has 3+ providers; and
- In the early years of roll out the providers may not have sufficient scale to deliver services to the high level of quality demanded or for retailers to cover the fixed costs of a wholesale agreement with them.

For example, Cityfibre's most recent announcement that it plans to pass 5 million homes⁸ with full fibre is only a 3rd of the Government's 2025 target, and means a large share of the country would still not be covered with fibre networks. Whether the coverage of corporate premises will be proportionate to the coverage of homes will depend on each operators investment strategy. However, due to the differences between mass market and corporate segments described in section 1.2, it is possible that the proportion of businesses passed may be lower.

Roll out of enterprise focussed networks

Openreach has economies of scope when delivering access products which are not available to operators focussing on the corporate segment only. Due to the high penetration of Openreach fibre and the substantial switching costs that would be faced even where there is high density of corporate customers, duct and pole access is only likely to have a small incremental benefit, and this may take many years to have any significant impact on competitive conditions in the downstream enterprise markets.

In the past we have seen that within central business districts, operators have been able to build networks that allow them to compete effectively with Openreach in the

frontier economics 13

⁷ https://www.libertyglobal.com/wp-content/uploads/2018/08/VM-Fixed-Income-Q2-2018-Release.pdf

https://www.cityfibre.com/news/cityfibre-announces-2-5bn-investment-plan-expand-full-fibre-network-unlock-uks-next-generation-broadband/

provision of enterprise services. This was typically because these operators could offer a significant upgrade in terms of quality through fibre connectivity and modern service provision, compared to the services offered by Openreach at the time. Now, the majority of enterprise customers have fibre and are served by modern Ethernet services. As such the incremental benefit of switching providers in terms of quality improvements is likely to be much lower than it was in the past, and switching costs remain high.

Duct and pole access could however have a role to serve brand new sites previously unserved with Openreach fibre. To the extent that Openreach has spare duct capacity in such areas, this could enable additional build of high quality networks in more marginal areas.

Extension of existing networks

Even where a competing operator has existing network close to a potential enterprise customer there may be a significant build cost in connecting the customer due to the need to dig to install cable from the existing duct to the customer. Given that existing Openreach customers will have already have a connection (in some cases having paid ECCs to connect up to the Openreach networks) they will not be prepared to pay this cost in additional to rental charges. This means a CP will need to recover this fixed cost through rental charges over the expected customer lifetime, which will only be feasible if the cost is relatively low. This means that CPs will not connect customers who are above a threshold distance from the existing network⁹.

Effective access to Openreach's duct and pole network could significantly reduce the cost to CPs of connecting customers and so could increase the threshold distance over which CPs will be willing to connect customers, to the extent the dark fibre access (DFA) is shown to be effective in this use case.

2.3 Conclusion

Compared to the mass market, the interaction between regulation and investment in the corporate market is at best uncertain and relatively weak. Allowing Openreach to increase prices above a competitive level may have limited impact on investment incentives and the incremental competition due to additional investment, while material, is unlikely to allow Ofcom to withdraw from regulation in the foreseeable future.

frontier economics 14

9

C2 General

This threshold distance will vary depending on both the build costs and the expected revenues from the customer.

3 FUTURE REGULATION

As noted above, the scope of additional competition in the wholesale enterprise market may be limited and the impact of any further entry or expansion resulting from potential economies of scale with mass market and/or DPA could only be expected to materialise towards the end of the next market review period (i.e. 2016). Therefore there is a significant risk of consumer harm if deregulation occurs ahead of competition being established, with higher prices leading to increased costs in the short term for enterprises with minimal benefit in the long run.

While market reviews need to be forward-looking, they also need to take account of the significant uncertainty: the fact that investment in full fibre may be delayed, the scope may be more limited than hoped or anticipated by Ofcom and that some networks may not be built out even by 2026 to a sufficient degree to change competition analysis. Even in the best case scenario, it is not clear that competitive roll out will be sufficient to constrain Openreach's prices to a competitive level.

Given the level of uncertainty about the time it will take for competing networks offering both mass market and enterprise fibre services to emerge and the extent to which this will occur, Ofcom has an obligation as a regulator to address market failure in all periods: there cannot be gaps in regulation where consumers suffer in the interim period. The risks associated with deregulation may be significant, including excessive prices faced by consumers, or inefficient and unsustainable entry. As such Ofcom has a responsibility to ensure regulation in the business connectivity market is appropriate to protect consumers.

3.1 There does not appear to be a clear case for relaxing the regulation of corporate connectivity

Neither of the two potential rationales for relaxing regulation of the business connectivity market appear to be applicable:

- There is no strong evidence that long term benefits from any investment spurred by relaxing regulation would offset the increased prices that would be paid by corporate customers; and
- There is little evidence that increased competition due to investment by competitors, based on DPA, will materially increase the competitive constraint on Openreach during this review period (2019-21) or the next review period (2021-26).

This suggests the approach adopted by Ofcom in the original 2016 BCMR decision was broadly appropriate in those areas where BT was found to have significant market power (SMP):

- A charge control on Openreach's services to ensure that prices are aligned with costs which allows CPs to compete in the downstream retail segment and prevent customers facing excessive prices; and
- Introduction of regulated DFA to allow competition over more of the value chain allowing more innovation as well as providing constraints on Openreach's pricing across all bandwidths.

3.2 Charge controls have become effective

Prior to 2016, charge controls imposed on BT/Openreach by Ofcom were ineffective at constraining BT's profitability to a level consistent with a normal return.

Since 2016, the application of an effective charge control (compared to a counterfactual of no charge control), along with non-price measures such as equivalence on inputs has both constrained BT's profitability and allowed competition in downstream markets to develop.

The following chart shows BT's returns over time for SMP Ethernet services, which shows returns converging to the determined cost of capital over time, as would be expected from an effective charge control. Ofcom states that returns on capital employed are expected to be around the cost of capital in 2018/19¹⁰.

With Ofcom's proposed CPI-CPI charge control cap on active services at 1 Gbit/s and below, Ofcom has stated that they expect that "this could lead to greater over-recovery for BT in the low-cost scenario (up to £135m) and some under-recovery in the high-cost scenario (around £10m)."¹¹ In the figure below we estimate this range of outcomes assuming capital employed is broadly stable from 2017/18. We note this estimate excludes the returns on Very High Bandwidth (> 1 Gbit/s) services which Ofcom assume will a higher return than services at 1 Gbit/s and below.

We assume a central level of WACC of 8% based on states WACC in the range of 7-9% - Paragraph A18.72 https://www.ofcom.org.uk/ data/assets/pdf file/0017/124730/bcmr-annexes-1-22.pdf

¹¹ Paragraph 2.13 https://www.ofcom.org.uk/__data/assets/pdf_file/0022/124726/llcc-bcmr-2018-volume-2.pdf

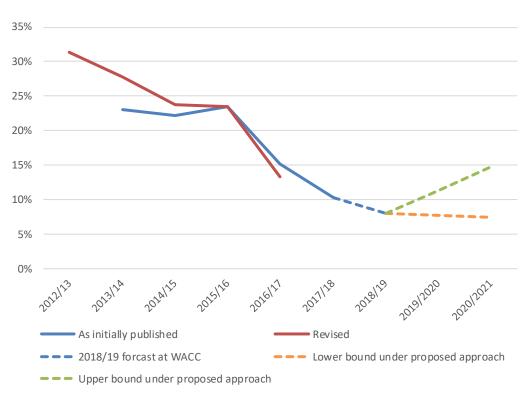


Figure 2 BT's returns on SMP Ethernet Services

Source: Frontier analysis of BT RFS and Ofcom's charge control proposals.

Note: Includes CISBO and former AISBO and MISBO markets. For calculation of upper bound, for 2020/21 we assume they would achieve WACC + 135m/2000m, for lower bound WACC - 10m/2000m

3.3 Dark fibre access allows further competition to develop

Ofcom seeks to prevent BT from exploiting its market power to increase overall wholesale prices through charge controls applied to the majority of active services. However, regulation is an imperfect substitute for competition. Mandating passive access enables providers to compete with BT over more of the value chain and would remove the ability of BT to control how passive infrastructure is used.

Allowing passive access at different levels may be complementary rather than a substitute for other forms of network access. However, the case for DPA enabling greater competition over more of the value chain in a mature market such as the enterprise market is unproven, the full benefits of DPA will take an extremely long time to be delivered and it is likely that significant parts of the country will not be

covered by a multitude of competing networks even when full fibre roll out has completed.

The high switching costs for enterprise customers, alongside the more limited incremental quality benefits from switching (compared to mass market customers moving from copper to fibre) may significantly limit the ability of DPA to act as a significant constraint in the enterprise market.

In the last BCMR, Ofcom required that Openreach provide both passive access (DFA) and active products (EAD). The case for an effective DFA remedy remains strong:

- DFA overcomes many of the switching costs associated with infrastructure based competition by using existing sunk assets and building access, thus potential delivering benefits to end users more quickly;
- DFA allows CPs to compete over almost half of the cost base of an EAD LA circuit (i.e. the active, non-fibre elements) as shown in Figure 3 below;
- DFA can be implemented relatively quickly by CPs as CPs are already present in the exchanges that serve the majority of high quality customers and switching costs are relatively low as for existing Openreach customers the existing fibre can be reused. This is in contrast to DPA where any benefits would rely on fibre roll out which would take many years to materialise;
- DFA allows more efficient network deployment by wholesale operators without the constraints or need to duplicate Openreach active equipment; and
- There is little evidence that DFA will reduce allocative efficiency or adversely affect investment. If prices are set consistent with the recovery of passive costs in active products, this should ensure appropriate build or buy decisions (active prices may move into line with DFA pricing).

The cost stack for EAD-LA below shows that just under half of the cost stack is related to the active element. DFA allows competition over this element of the cost stack¹².

Duct and pole access would allow competition over all of the cost stack apart from the duct element which makes up over a third of the capital employed for CISO services based on BT's RFS.

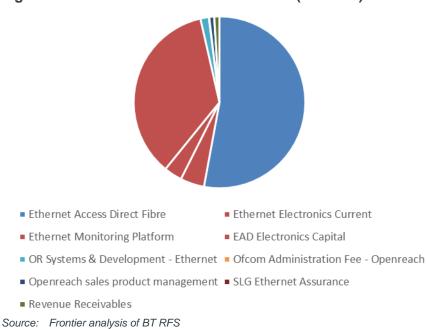


Figure 3 Cost stack for EAD LA Rental (External) 2017/18

Course. Tremier analysis of BTTW

3.4 Conclusion

The broad regulatory framework set out in the 2016 BCMR statement, with a charge control on active services to bring them in line with costs and with the introduction of DFA, still appears to be appropriate. Applying this framework, which has evolved over a number of market review periods, would also bring benefits in terms of regulatory certainty for both investors and customers.



