



Business Connectivity Market Review

Consultation Response by Colt Technology Services

Non-Confidential Version

About Colt

Colt provides world class network, voice and data centre services to thousands of businesses around the world, allowing them to focus on delivering their business goals instead of the underlying infrastructure. Customers include 18 of the top 25 bank and diversified financial groups and 19 out of the top 25 companies in both global media and telecoms industries (Forbes 2000 list, 2014). In addition, Colt works with over 50 exchange venues and 13 European central banks.

Colt operates across Europe, Asia and North America. It recently completed the acquisition of KVH, an integrated managed communications and IT infrastructure services business, with headquarters in Tokyo and operations in Hong Kong, Seoul and Singapore.

Today Colt's network directly connects 207 cities, with a further 49 Metropolitan Area Networks (MANs) and direct fibre connections into more than 22,500 buildings. Also, Colt operates 29 carrier-neutral data centres in Europe and in Asia-Pacific region. Our Global network spans three continents with Colt-owned infrastructure in 28 countries. This allows us to provide services to our customers across 86 countries.

Colt has a wide portfolio of network, voice and data centre services which are delivered with industry leading customer service and security:

- Our network services offer, among others, managed network Services, bandwidth and Ethernet services, fibre infrastructure and wavelength services;
- Voice services comprise Enterprise voice services (such as PSTN and SIP trunking access and outbound calls) as well as wholesale voice services (world-wide call termination via TDM and VoIP interconnection service, Reseller solutions and tools, White Labelled Services and Number Hosting);
- Data centre services enable Colt to provide colocation in carrier-neutral data centres, remote hands' services, disaster recovery space and DC Connect (direct connections to any enterprise within a data centre – including carriers, internet and cloud service providers, internet and financial exchanges, and content providers or distributors)
- Also Colt delivers integrated solutions services using our strong capabilities to integrate products and services and provide solutions to enterprises across the globe.

Executive Summary

Colt welcomes this opportunity to respond to the BCMR consultation. Below is a summary of the key elements of our response.

The proposal to adopt a dark fibre remedy heralds a significant advance in the UK business connectivity market. It will unlock dimensions of competition that have so far been absent. In particular, it will unlock the following dimensions of competition:

- **Product:** dark fibre allows access seekers to provide services as if they were on-net. This allows differentiation in terms of product specification and quality of service. This is crucial if the UK is to break free of the one-size-fits-all competitive model that has held back innovation in the market, to the detriment of the UK market versus its peers.
- **Geographic:** dark fibre allows access seekers to unlock the potential for investment in new geographic areas, by making short distance backhaul markets significantly more competitive. This will be part of the solution to one of the most serious criticisms of the UK market in recent times: the inability of the market to provide access to geographic pockets where BT has chosen not to invest. SMEs (mainly in business parks and city centres) have been the most notable losers in the way the business connectivity market has operated to date.
- **Economic:** The UK communications market is (broadly speaking) a binary one. Connections are business-grade or residential-grade. It is a serious criticism of the UK market that it has failed to offer any “category-busting” products in recent years. This pattern suits BT as it allows it to maintain a profit maximising market segmentation and price discrimination strategy. In equal measure, it harms competition and the market. Like the “Geographic” point above, the main losers have been SMEs.

The need for new dimensions of competition to be unlocked is greater today than ever before. The state-of-the-art is changing rapidly and the UK urgently needs new investment in order to avoid being left behind.

While Ofcom’s proposals represent a step in the right direction, we remain concerned with the level of caution behind Ofcom’s approach. In particular, in opting for a dark fibre remedy, it appears to be shooting for the line of least resistance, or “passive-remedies lite”. It appears that Ofcom has misunderstood the creative potential of passive remedies, underestimated the appetite in the market for it, and has purposely narrowed its view of the use-cases and potential benefits in order to justify its decision.

Colt finds the apparent misunderstanding by Ofcom of the potential use cases of passive remedies perplexing, given that Colt and others have commented on the matter extensively, providing real-life

practical examples of how passive remedies can be (and have been) used. In particular, Colt is perplexed by Ofcom's apparent belief that passive remedies mainly serve the purpose of direct EAD replacement, and that there are no appreciable economies of scale in the deployment of dark fibre. Both assumptions are errors of fact, leading to errors of logic in Ofcom's analysis.

Ofcom's view of the risks of passive remedies remains overstated. Ofcom appears to have proceeded little further with its understanding of the purported downsides than the position it reached in the previous BCMR. In the previous BCMR, Ofcom asserted that passive remedies threaten BT's ability to recover its common costs and/or give rise to the risk of "arbitrage". As a matter of principle, we are very concerned with the characterisation of disruptive competition for a differentiated product as "arbitrage". The use of this term appears to be linked with Ofcom's own purposefully narrow view of the use cases for passive remedies. Furthermore, Ofcom has not commented on the absence of any evidence from other markets, where passive remedies have been applied, of the downsides being in evidence. Ofcom's caution is evidenced in its choice of the remedy (dark fibre and not duct); and its choice of pricing (active-minus based on 1 Gbit/s EAD).

To maximise the benefits of the BCMR for the market, Colt urges Ofcom to propose a duct access remedy, at cost oriented prices. Duct access is far more flexible than dark fibre as it allows access seekers greater freedom to plan their own network routes and greater freedom from Openreach's provisioning processes. Duct and dark fibre access are frequently used in a complementary manner: duct access is typically used for short distance local connections, while dark fibre is more efficient for longer distance connections. The use cases for this combination of remedies is described in detail in Colt's reply to Ofcom's call for inputs.

The Civil Infrastructure Directive will provide scope for duct access in any event. If Ofcom is committed to its belief that duct access presents a risk for the market, Ofcom should not at this stage abandon the market to the unpredictable outcome of this Directive. Instead, it should be proactively looking to gain control over this remedy to ensure it is implemented in a manner that addresses its concerns.

For the dark fibre remedy to be effective, it is crucial that there are as few restrictions on its use as possible. It should at the very least be available in all the scenarios in which EAD is available today. To avoid granting BT the freedom to manage the competitive impact of dark fibre, it is crucial that it should be available between BT exchanges without limitation (except for the limitations imposed by TAN boundaries). This will allow competitors an efficient platform for optimising their networks at the local level. The remedy would need to be combined with an associated remedy to allow open collocation of CPs' equipment inside BT's exchanges.

Colt welcomes Ofcom's proposals to re-define the London geographic markets into the London Periphery and the Central London Area. Colt also welcomes Ofcom's proposals to improve Openreach's quality of service.

Passive Access and Geographic markets

Colt strongly supports Ofcom's proposals regarding both the introduction of dark fibre and the review of the geographic markets analysis. In the past few years, Colt has been deeply involved in expressing the issues created by the current regulatory framework and demonstrating the potential benefits of passive remedies in order to foster investment and effective competition. We are therefore very happy to see Ofcom has made such an important step in the right direction.

Geographic markets

Colt welcomes Ofcom's market analysis and specifically the distinction between the Central London Area (CLA) and London Periphery (LP). Competition between those two areas is clearly different: while the CLA is fairly homogeneously competitive, the picture in LP is much more patchy, and calls for tougher regulation. Consequently, Colt supports Ofcom's proposal to apply both dark fibre and Ethernet as remedies in the LP. We describe the underlining reasoning below.

During the market review process and especially during the data collection exercise, Colt has been actively discussing with Ofcom the implications of different assumptions on competitive analysis. A crucial element for us is the average distance considered when analysing network reach. The previous assumption of a 200m threshold is clearly inappropriate in our experience: digging more than 50 metres connect a new building is rare. **[Confidential.**

] Colt therefore supports Ofcom's decision to reduce the buffer distance to 100 metres. While we believe further improvements are needed for the geographic analysis to be more representative of the actual state of competition in the market, the overall result is a significant improvement on the WECLA approach in the previous BCMR.

For consistency and specifically for future geographic market analysis we believe it is important for Ofcom to consider the specific areas of improvement expressed within Towerhouse's geographic market report for the PAG. In particular, we believe it is important to:

- combine existing demand locations with the large business site database in the measurement of network reach;
- reduce buffer distance to an even more realistic level (ie we believe 75m would be more credible); and
- differentiate between different types of network operator.

Another important point requiring consideration is Ofcom's use of 'flexibility points' as points from which CPs would consider expanding their network. Indeed those points are manholes and manholes are never considered by Colt as a data base of points that we would consider when assessing whether to expand our network. In reality, it often happens that we cannot use manholes to extend our network for the following reasons:

- The box is full and capped: no more network joints and / or cables can be installed;
- The box is a small box for turning point, pull through or customer connection point;
- The track or duct connected to box is full;
- The box is an interconnect point only.

[Confidential.]

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Of course, this issue is not a new one and we have already expressed this to Ofcom several times (especially during the data collection) however we do not believe this has been taken appropriately into consideration by Ofcom, we therefore still believe this is relevant today and should be improved in future analysis.

Passive access

Colt fully supports Ofcom's proposal to introduce dark fibre as a remedy in the UK business connectivity market. Competition at the infrastructure layer is needed in order for effective competition to be seen in downstream markets. At the moment, the market almost always relies on BT's technology, equipment, innovation, tariff models, contract structures and processes. Dark fibre is therefore seen a solution that will enable OCPs to have a level of control over the service that could allow them to influence all those factors.

It is in BT's interests to convince the market that the only type of premium business connectivity product is its own leased line offering (or closely related variant thereof). On this view, competition can be facilitated through reselling BT's wholesale services. This allows BT complete control on the where, how, what, and how much, of business connectivity.

In fact, such a notion is as absurd as the view that there is only one type of car. Most seriously, it allows BT complete freedom to impose, maintain and enforce its own market segmentation and price discrimination policies, at the expense of the market and competition. Passive remedies allow CPs to provide access to the components of production, allowing them to innovate and penetrate market niches, escaping the constraints on the market imposed by BT.

In previous BCMRs it is evident how influential BT's strategy has been on Ofcom's thinking. In particular, in previous reviews, Ofcom has regarded the integrity of BT's pricing and costing policies as the "be all and end all", trumping all potential dynamic benefits arising from a more meaningful model of competition.

Consequently, Colt greatly welcomes Ofcom's introduction of dark fibre as a decisive, though cautious (in our view over-cautious) step in the right direction.

Benefits of dark fibre introduction

When using dark fibre, Colt considers the customer to be on-net, dramatically increasing Colt's flexibility in its service offering. On-net connectivity allows for an entirely different class of service, allowing greater control over parameters including the choice of Layer 2 and Layer 3 technologies, the bandwidth/capacity provided, the pricing structure, the QoS (including the prioritisation rate), the level of end-to-end control over the network and the relationship between pricing and usage. These factors are crucial for serving business customers.

- **Service offering**

When a CP relies on an active input from another supplier, it is necessarily constrained in what it can offer to its customers by the underlying wholesale product. If the supplier is the only party able to make changes to a service but requires two weeks to make a change, the CP and its customer will have no option but to accept that. With the ability to purchase dark fibre, CPs know they will have substantially more ability to develop and offer different service levels and combinations of features as part of their overall product offerings, and, more specifically, they know they can adapt to any change in their customer demand more quickly and easily because they have direct control and access to the equipment. Dark fibre will allow more flexibility and this implies control over:

- SLA;
- layer 2 and 3 technology;
- bandwidth/capacity provided (including factors such as symmetry, scalability and burstability);
- pricing structure;
- QoS.

Also, ordering dark fibre will enable CPs to avoid supporting any migration cost in the future. (While Colt's submission addresses important issues regarding migration and PPCs, Ofcom should note that we fully support UKCTA's reply in that regard.)

- **Commercial offering**

With dark fibre, CPs will be able to commit to longer term contracts than with active inputs, as they can be confident any future demand can be served without needing to change the underlying wholesale product required from BT. Indeed, the variety of services that can be delivered over the underlying wholesale product will be broader than with any active product. In respect of active products, CPs have to commit to a given set of parameters, and are thereafter constrained by BT's woeful upgrade and migration procedures. Dark fibre will allow therefore CPs to control more easily the components of a commercial offering along the following lines:

- tariffing structures - how much is charged and greater flexibility to vary the price with the grade of service,

- contractual elements and terms of service, such as service level guarantees, payments for breach of service level commitments, minimum contract terms, rights of cancellation; and
 - charging models - different methods of rating services (per transaction, by volume, hours of day, flat rate, fixed charge) and means of payment - in advance, in arrears, monthly, quarterly, annually.
- **Investment and network expansion.**

Dark fibre will enable CPs to invest more and serve customers in different areas, compared with the current framework based only on active inputs. **[Confidential]**

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Using this model, Colt would be able to use dark fibre to expand its network to new cities (as we have done in other European countries, see Annex). Consequently, having access to dark fibre would enable Colt to expand its network to other business areas such as **[Confidential]**.

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We also expect that this would allow us to provide a richer wholesale offering, with spillover benefits into other markets such as fixed backhaul, mobile backhaul, etc.

- **Innovation**

Dark fibre will provide CPs with a level of control at the equipment layer, thus offering much more flexibility for innovation than is possible with active remedies. Indeed CPs will be able to serve customers with scalable services such as software defined networking (SDN) and bandwidth on demand. The wider availability of more scaleable infrastructure models will encourage innovation at the service layer through new types of Over-the-Top (OTT), Software as a Service (SaaS), health monitoring systems etc.
- **Competition in the backhaul market and therefore in NGA**

Mandating dark fibre in the BCMR will enable more competition in the backhaul market and therefore possibly unlock NGA investment. All CPs need an efficient market in backhaul. Price, quality, bandwidth and location are among the important dimensions of the backhaul market that are important to CPs. With the explosion in access bandwidths we are seeing

today (derived from FttC and 4G), an efficient market in backhaul is arguably more important than it has ever previously been, to secure the right incentives to develop the right products.

With dark fibre, CPs will only be constrained by BT's service offering to the extent of issues in relation to the passive elements purchased from BT. In this regard, it is important for Ofcom to note that these benefits will only be possible if the right level of QoS is delivered by BT, at a much higher standard than it is today. It is therefore crucial for Ofcom to act on this as strongly and quickly as possible (this issue is addressed in more detail in PAG's and UKCTA's consultation replies).

Also, Ofcom should consider more carefully how the above benefits as well as resolving issues regarding dark fibre would be better achieved if Ofcom were to mandate duct access alongside dark fibre (see below paragraph on duct access).

Case studies: Colt's intended use of dark fibre

Colt believes it is imperative for Ofcom to realise dark fibre will not mostly be used as a strict replacement of BT's EAD. Indeed, this is not and has never been Colt's motive for asking for passive access in the UK. Given the amount of time Colt has spent explaining this precise point to Ofcom, in particular in explaining our use cases for passive remedies outside the UK, both in face-to-face meetings and extensive written submissions, we were very surprised recently to hear that Ofcom considers EAD replacement as the primary use case for passive remedies. This is most emphatically not the case. We provided some very specific examples of use cases in our response to the call for inputs and so will not repeat ourselves here.

Indeed, the persistence of this misunderstanding by Ofcom, in our view, goes a long way to explaining Ofcom's continued excessive caution and insistence on stressing the risks of cost-stack incompatibility (or, "arbitrage" as Ofcom puts it) over and above all potential dynamic benefits. (It is a separate point, but Ofcom has never commented on our submissions made on multiple occasions, that passive and active remedies coexist happily in other countries. Nor has it ever commented on our observation that practical manifestations of the risks that Ofcom highlights (in particular, "arbitrage") are absent to the extent that regulators and other commentators find the degree of Ofcom's concerns baffling).

Colt's main use case for passive remedies is to provide an efficient platform for network investment and expansion. Purchasing EAD cannot be considered as an investment but only as a mean to reach a customer in an area where our network is currently not available. (As a result, replacing our EAD purchases will not be our first move when we first access dark fibre).

First of all, Colt does not buy EAD or WES in particularly large volumes **[Confidential]**.

] As a

result, even if some replacements of EAD circuits by dark fibre might occur in the future, this would happen in very few instances.

In reality, Colt is planning to use dark fibre to **[Confidential]**.

[This solution will allow Colt to deploy its own technology and services, and optimise the way our network is implemented outside its current network footprint.

Another misunderstanding that appears to have crept into Ofcom's thinking is the belief that there are no economies of scale in the use of dark fibre. Below is a model, using actual numbers, demonstrating that this is not the case. Following this, we show how the business case for network expansion will be conducted in two UK cities **[Confidential]**.

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Consequently, we believe those two examples provide enough concrete illustration for Ofcom to see how dark fibre would be considered as something much more extensive than a strict replacement of EAD. **[Confidential]**

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Besides the model of inter-exchange connection, Colt is also planning to use dark fibre for the following applications that are not possible to be delivered using active solutions from BT:

- **[Confidential.]**

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- **Provide ultra-low latency services that are currently not available from BT.** Colt is specialised in providing ultra-low latency to its customers but this is not a feature available from BT. With dark fibre, Colt will be able to use its own equipment and control all features such as latency in order to best adapt to customers' needs. Ultra-low latency is finding uses in a growing number of applications, including driverless cars and distributed computing. As latencies measured in microseconds (today's "ultra-low latency") become more competitive relative to standard products (with latencies measured in milliseconds), the range of applications that can take advantage of low latencies will increase. Today, the main reason why a computer's components are located in the same box is that the latencies required are not available (cost effectively) in any other configuration. The latency of a mechanical hard disk is about 7 milliseconds – about the same as a standard leased line. The latency of solid state storage is about 160 microseconds – about the same as today's ultra-low latency services. The latency of RAM is about 7 nanoseconds, far less than that of any currently existing communications technology. It goes without saying that as lower latencies become more widely available, the use of wide-area computing and storage applications able to take advantage of them, will flourish. BT's one-size fits all EAD solution is a significant barrier to innovation in this regard.
- **Assist with data centre connectivity.** Very high capacity is needed in order to provide the right level of data centre connectivity to our customers. In this scenario, dark fibre will be seen as the best solution to serve those customers in the event we are not already connected to the data centre in question.

Key points for Ofcom to consider in the implementation of the dark fibre remedy

It is important to note that the economies of scale that Colt is seeking, are not available simply by means of the pricing of dark fibre versus the equivalent EAD product. **[Confidential]**

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Furthermore, Colt needs to deploy its own bespoke **[Confidential]**

] The benefits of this technology were highlighted in previous submissions by Colt but in brief, it allows the flexible deployment of any access method, as well as offering a flexible path for future upgrades (network and customer), and the incremental daisy-chaining of network components. None of these benefits are available if one of BT's EAD boxes is "in the way".

[Confidential.

] dark fibre could support this model if it is implemented in the appropriate way. Indeed, although dark fibre is not the best solution for Colt **[Confidential.**

] we believe it will be possible for this model to be executed only if Ofcom fully considers the following:

1. **Ensure the remedy proposed allows for such a use case.** It is important the dark fibre solution enables CPs to connect BT's local exchanges in the way presented in the above examples, otherwise, the strategic benefit of the remedy would be extremely limited.
2. **Ensure the price is not too high so CPs can use the remedy to serve a reasonable demand.** Ofcom should be careful the price for dark fibre does not unduly restricting usage only to replace highest bandwidth provided by EAD (eg 10 Gbit/s for example). As mentioned above, this would serve a very low and narrow demand **[Confidential]**

] and, therefore, would remove most of the benefits dark fibre could bring.

Indeed with this type of narrow demand, the market would only enjoy the following restricted benefits:

- Service and commercial offerings would be improved only for customers able to support such a high cost,
- The remedies would not support strategic network expansion any more than the current remedies do today,
- Additional innovation would be very low as not enough demand would be driving this much further than it is already the case today.

It is also important for Ofcom to look very closely at how BT might be able to implement Ofcom's proposal to its advantage by distorting competition. For example, we believe BT has the incentives to

set prices for 100 Mbit/s at a very low level in order to rebalance more costs on 1 Gbit/s services, we therefore urge Ofcom to prevent this. Further, attention should be given to the way BT allocates costs related to equipment: BT will have the incentive to set equipment costs (as well as any costs to be removed from EAD pricing to create active minus) at a very low level just so it is able to set active minus pricing at a higher level.

Consequently, Colt considers Ofcom should encourage the dark fibre remedy to be as unrestricted as possible in terms of:

1. **The operational aspects:** the different points from and to, it is possible to order the dark fibre product, and also, the ability to install equipment in BT's facilities.
2. **The price:** even if dark fibre offers some benefits that actives cannot, if the price is set a level where its usage is impacted, this will make the remedy mostly unusable in any creative way and remove most (if not all) of its possible benefits (as described in above section).

Finally, as already expressed above, dark fibre will only be usable if the right level of QoS is delivered by BT: at a much higher standard than it is today. It is therefore crucial for Ofcom to act on this as strongly and quickly as possible (this issue is addressed in more detail in PAG's and UKCTA's consultation replies). Indeed today, Colt avoids dealing with Openreach as much as possible (more details on this can be found in Colt's reply to the BCMR Call for inputs, paragraph 4.3¹).

Furthermore, Colt believes benefits of dark fibre would be enhanced if it was implemented alongside a duct access offer. Most importantly in the current market context, duct access could help to avoid some of the negative impacts of BT's unacceptable QoS. This is explained further below.

Duct access

In light of Ofcom's proposal to impose dark fibre in the BCMR, Colt considers that there are no longer any justifiable reasons for sustaining the restrictions imposed on the PIA product. Indeed, Colt strongly believes removing those restrictions would be the right solution for Ofcom to maximise the benefits to competition and mitigate possible risks. Moreover, as Ofcom is aware, the Civil Infrastructure Directive will be imposing a parallel requirement for duct access. If the risks and downsides to the wider application of duct access have any validity, Ofcom should be attempting now to gain control over these risks within the BCMR, to introduce duct access in an orderly manner.

Ofcom presents the following reasons for declining to impose duct access as a remedy:

- Limited additional benefits;

¹ http://stakeholders.ofcom.org.uk/binaries/consultations/business-connectivity-market-review/responses/COLT_Technology_Services.pdf

- Duct access does not allow risks to be mitigated, while dark fibre achieves the appropriate balance;
- Dark fibre would use BT's infrastructure more efficiently.

Colt disagrees with these statements, and believes a co-existence of both dark fibre and PIA would bring more benefits while still mitigating risks. Indeed duct access can bring the following benefits that a dark fibre cannot:

- **Different route and network architecture than BT's.** With duct access **[Confidential.**

] Having a

different network route in order to obtain diversity is sometimes required by Colt's customers and could therefore be developed further with duct access (see Colt's reply to the BCMR Call for Inputs, response to question 17²). The flexibility to mix and match existing with new infrastructure would allow competitors to access under-served locations.

- **QoS.** With duct access, CPs would normally have the right to intervene directly in the event of a fault. This reduces reliance on BT, thus reducing scope for customers to be damaged by Openreach's unacceptable quality of service. Also, fewer steps would be required from Openreach during installation. Most of the work would be undertaken by the CP (ie surveys, pulling fibre, equipment installation,...) and it would therefore be more easily and quickly managed. CPs would also be able to offer better SLAs to their customers as a result.
- **Customer experience.** Since CPs would have more control over the different steps needed to install the service, it would be easier to inform the customer of the process and anticipate the right delivery date to be communicated to them. Also when a problem arises, the CP will be the first to know, and therefore better able to manage customers' expectations. This improves customer relationships and improves confidence in CPs. Those benefits are limited in case of delivery for dark fibre as Openreach is in charge of more steps, and usually of the most time consuming ones (ie survey and fibre layout)
- **Coverage.** In case fibre is unavailable, with duct access CPs would have the option to lay down the fibre themselves, without being beholden to BT's costs (eg ECCs) and timing. This would once again improve Customer experience and QoS.
- **Capacity.** Duct access enables CPs to lay down more fibres than ordering a single dark fibre. This provides more flexibility when adding capacity. It also allows more flexibility for serving customers who require dedicated fibre.
- **Access vs backhaul. [Confidential.**

] In constructing a backhaul network, a CP would do so for its own needs, with a structure and architecture that matches its own requirements. A CP would plan

² http://stakeholders.ofcom.org.uk/binaries/consultations/business-connectivity-market-review/responses/COLT_Technology_Services.pdf

its routes, locations and breakout points strategically in order to optimise the availability of capacity in locations that it serves (both present actual and future potential). However, the ability to plan its own route would only be possible with duct access. CPs seek to construct their networks such that the routing and architecture allows economies of scope to be exploited between adjacent access zones. This freedom is only possible with duct access.

All of the above illustrates how dark fibre and duct access are complementary and not alternatives and should therefore be implemented together. As already expressed in our response to the BCMR Call for inputs, in order to expand its network locally in a given new city, ideally, Colt would **[Confidential.**

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One possible approach Ofcom could take would be to remove the current restrictions on PIA, such that access is no longer dependent on end-use. Thus, PIA would be available in the access segment only, while dark fibre is available in the inter-exchange segment. Ofcom's concerns regarding BT's cost recovery would be allayed by the 1Gbit/s active minus price on the inter-exchange segment, since duct access would only be used in lower bandwidth access scenarios. Such a solution could also be implemented relatively quickly as PIA is an existing product.

Accordingly, Colt strongly believes that Ofcom would maximise the benefits to competition by introducing duct and dark fibre as complementary and co-existing remedies.

Issues created by the Civil Infrastructure Directive and limits of its implementation

Colt believes the Civil Infrastructure Directive (CID) should make Ofcom even more determined to implement duct access correctly under the SMP framework because duct access will become available in the market anyway. Therefore, if Ofcom's concerns about the potential for duct access to lead to worse outcomes if not implemented correctly have any validity, then the worst of all worlds is for it to enter the suite of remedies by means of a process over which it has less control.

This makes it even more important that Ofcom takes control over duct access using 1) the tried and tested mechanisms of the SMP framework; 2) in the context of the BCMR where Ofcom can ensure that the cost stack is internally compatible. However, on the contrary, Ofcom has stated the following:

"In making these proposals we have taken into account that the EU Civil Infrastructure Directive (CID) is expected to come into effect in the UK in summer 2016. The CID will introduce a requirement for all utility networks to meet reasonable requests for access to their infrastructure from public communications network operators made with a view to deploying high speed electronic communications networks. [...]The CID will be a form of duct access remedy which will sit alongside any remedies we impose as part of this market review."

This statement clearly shows the inconsistencies in Ofcom's approach. At one point Ofcom states that it believes duct access carries too many risks, while at another point, it states that it has no intention of imposing a duct access remedy because one is being imposed anyway. The true justification can be one or the other, but not both. If Ofcom is really concerned about the potential risks of duct access, it should be fighting hard to have its considerations taken into account by DCMS and UK government more generally, and to design the remedy in a way that comes closest to mitigating all the risks that Ofcom has identified. If Ofcom really do believe duct access has the potential to be as disruptive, then by not taking control of the manner of its implementation in the BCMR, Ofcom would justifiably stand accused of abandoning the business connectivity market to the chaos that – on Ofcom's own reasoning – would undoubtedly ensue. The other possibility, of course, is that Ofcom believes the CID will be ineffective. Colt will be fighting hard in the UK to ensure that this is not so, just as it is in other EU countries. We do not believe it is in any of our interests for Ofcom to lose control over the destiny of the UK Communications Market by effectively ignoring the potential impact of parallel legislation.

The PAG has already met with the DCMS in order to discuss its concerns in relation to the treatment of this Directive. We understand that DCMS's current plan is for the regulator of the relevant sector to resolve any disputes. This said, it would make more sense for Ofcom to act now through the BCMR and the SMP framework in order to simplify, address and prevent any potential issues, particularly regarding pricing.

At present, the CID simply states that the pricing should be "fair and reasonable" without defining what fair and reasonable might imply. This suggests that any of a range of outcomes is possible. It is surely not consistent with Ofcom's duties for it not to consider the impact of this Directive on the markets it is currently reviewing.

If, in the alternative, Ofcom is of the belief that there is no need to mandate a duct access obligation in the BCMR because one will be available anyway, we would argue that this is a very high-risk approach. The point is that, since implementation lies outside the SMP framework, the outcome is highly unpredictable. Ofcom can bring the unpredictable into the realm of the predictable by proposing a stable framework for duct access under the SMP framework, thus obviating the need for the market to use parallel legislation to achieve the same objective, with less certain effects.

For these reasons, we would strongly recommend Ofcom address the issue in the BCMR and therefore impose duct access under the SMP framework. A comparable situation happened in Sweden: during the review of Market 4, the NRA had suggested removing the existing obligation on the incumbent on the grounds that the directive would cover this need anyway. They realised in the end that the CID would achieve a different outcome and thus decided to retain the obligation on the incumbent to provide duct access.

Annex

Examples of Colt's use of passive remedies to build networks in other EU countries. **[Confidential]**