BUSINESS CONNECTIVITY MARKET REVIEW AND LEASED LINES CHARGE CONTROL

RESPONSE BY COLT

(NON-CONFIDENTIAL VERSION)

Contents

1 Executive Summary

This submission comprises Colt's response to Ofcom's BCMR and LLCC consultations. The availability of world-class business connectivity is critically important to the UK business sector and the BCMR is central in laying the groundwork to ensure that business customers have a choice of service provider. At the highest level, we are supportive of the majority of Ofcom's proposals, which represent a considerable improvement over the current arrangements. Some of the improvements that we welcome include:

- The separation of trunk into regional and national allows a more rational treatment of short distance services formerly falling under the excessively broad category known as trunk. Notwithstanding this, we have strong reservations about the treatment of national trunk (see below);
- A relatively aggressive reduction in AISBO pricing (RPI-12), which will lead to pricing falling more in line with costs over the period of the review;
- An aggressive one-off reduction (30%) in Excess Construction Charges (ECCs). ECCs are a significant problem for industry. Uncertainty as to whether they will be required and their level prevents CPs competing for business as aggressively as they otherwise might. We suggest that Ofcom retains a close scrutiny of ECCs and keeps them under review;
- The introduction of the MISBO category for >1Gbit/s services (although we have strong reservations on the scope of MISBO);
- Improved arrangements for handover and interconnection (e.g. high density handover, IBH, ISH etc.);
- The retention of regulated SLAs and rejection of the linkage between SLAs and forecasting accuracy.

Nevertheless, we do have some reservations on some of the details of Ofcom's proposals. While supportive in principle of Ofcom's approach of withdrawing regulation where competitive conditions allow, we consider that Ofcom is moving too far, too fast by proposing deregulation in sectors of the market that are not ready to support it. We would include the proposed de-regulation of national trunk and the proposed expansion of CELA to WECLA in this category.

More broadly, we also consider that the BCMR's days in its current form are numbered. Developments in access markets mean that it is increasingly meaningless to continue with artificial distinctions between issues traditionally considered in separate market reviews (e.g. wholesale broadband access, local access and business connectivity). The current BCMR is already taking an excessively narrow approach to business connectivity inputs. The consequence of this is that we risk handing back large sections of the market back to BT, merely because Ofcom has not considered the full range of access inputs that the market could conceivably use for business connectivity purposes.

We consider that Ofcom should consider a broader range of access options in the current review. As the convergence of traditionally distinct sectors continues apace, Ofcom's endeavours in ensuring the availability a suitable range of business connectivity products will have an increasingly difficult job of keeping up. Furthermore, the most prominent outcome will be that the current level of complexity – already in our view excessive and leading to multiple opportunities for gaming and creative misinterpretation – will become even more so. Long term, we see the ideal solution to be one based on a more generic range of inputs designed to encourage the deployment of alternative infrastructure. At present, we consider that the level of complexity of regulation surrounding business connectivity,

together with the sensitivity to minor changes in regulation or implementation act as a significant disincentive towards investment in alternative infrastructure. We see the task of managing increasing complexity, convergence and regulatory uncertainty to be the key challenges in the business connectivity market going forward.

Specifically, our main reservations with Ofcom's conclusions are as follows:

- The absence of a business grade VULA product as a remedy in the BCMR is a substantial problem. We consider that its omission betrays a narrow approach to the market and fails to take account of the growing linkages between business and residential access markets arising from NGA deployment. Ofcom's unwillingness to consider a PIA variant for business connectivity – which could significantly reduce the cost of network expansion – exacerbates the distortions created by the lack of business grade VULA. We consider that duct access (already extensively used in several European countries) combined with a business grade VULA product will be essential ingredients of a competitive business connectivity market going forward;
- We strongly disagree with proposal to drop cost orientation in favour of a price control. We consider that this grants excessive flexibility for BT to price strategically within the overall basket, and for anti-competitive ends, by selectively charging higher prices for inputs which are in proportionately greater use by rivals, and lower prices for inputs which are in proportionately greater use by itself;
- Even if Ofcom follows through with its proposal to drop cost orientation, the rationale for publication of detailed regulatory financial statements becomes even more important because the reduction in transparency surrounding the most important ingredient the price control, increases the risk of regulatory capture;
- We have significant concerns regarding the expansion of CELA to WECLA. Ofcom's analysis has convinced it that West London (up to and including Heathrow) has sufficient alternative infrastructure that regulation of BT is no longer required. This is at odds with our own perception of the market. The extent of alternative infrastructure in WECLA (outside CELA) is far less than that in CELA, and hence competitive conditions are materially different. Further, we believe that several of the assumptions Ofcom has used to come to this conclusion are flawed (e.g. its assumption that CPs will dig to a customer that is less than 200m and its apparent assumption that network passing through a given district implies that sites in that district are accessible). By treating CELA and WECLA as the same, Ofcom has devised a set of remedies that is not suitable for either. **Instead, it should consider more de-regulation in the CELA and less de-regulation in the WECLA.**
- While we are broadly in favour of the disaggregation of the trunk markets into regional and national elements (because it allows the more rational treatment of regional trunk), it makes the mistake of putting all national trunk in the same (de-regulated) category. This is clearly not justified by competitive conditions while there remain some routes that can only be served by BT. Several other countries have taken a route-by-route approach to de-regulating national trunk, and we consider that Ofcom should do the same.
- While we welcome the inclusion of high bandwidth (>1Gbit/s) Ethernet in the set of regulated products that BT is required to provide, we find Ofcom's decision not to include services using WDM (either in the product set or in the definition of the "Modern Equivalent Asset" used for price calculation) to be inexplicable and unjustified. As we understand it, Ofcom has justified this approach on the basis that WDM is a new technology. This is clearly not the case. CPs have been widely using WDM transmission in their network for well over 10 years.

2 Introduction

The inputs covered by the BCMR are crucial to the UK's business sector. The demands placed on business connectivity are only increasing: the rapid growth of cloud computing, the increasing importance of connectivity between multiple sites and the increasing dependence on a quality of service that is quite distinct from that required by the residential sector, all contribute to a growing reliance on business connectivity services.

Today, the UK business's connectivity needs are relatively well supported. Customers have access to high quality, resilient and low latency services that are on a par with most other major countries. Infrastructure competition in parts of London is well developed, as is competition in long-distance connectivity (though there are notable gaps on some routes). There is no question that this owes a great debt to the regulatory framework for facilitating competition.

However, despite its notable achievements, Ofcom's work to date in developing and refining the business connectivity inputs will start to present a risk as the market develops. In short, the BCMR and the resultant regulations on wholesale inputs are already too complex and too subject to change over time. Complex rules are easy to game. Gaming can – and does – occur by a variety of methods, particularly through narrow and creative interpretations of the SMP conditions, the use of complex and imaginative internal procurement and transfer charging arrangements, as well as a highly obstructive approach to the development of even minor variants to the details of existing active products. These are factors that have a dramatic impact on investment decisions and market activity, but cannot be contained without ever-increasing regulatory micro-control.

It is neither right, nor good for the market, that investment and market behaviour are so minutely sensitive to the stroke of a regulator's pen. Yet dramatic differences in outcome can result from something so small as an ambiguously worded SMP condition, a technology or network architecture decision that fails to anticipate a significant change in technology or pattern of demand, or an unforeseen loophole that can be ruthlessly exploited.

Given the hypersensitivity of decisions related to network architecture and investment to the regulatory minutiae, together with the uncertainty this creates, the rational response by market participants is to postpone investment – perhaps indefinitely. As a matter of observation, the infrastructure deployed by the major business connectivity service providers has proceeded at a slow pace since the early 2000s. We believe this is less than ideal for UK business customers and the market generally, and that the character of regulation has been a significant factor in promoting this outcome. Furthermore, given the growing interplay between business and residential access markets, the complexity referred to above, and the associated uncertainty can only be expected to increase if the approach to remedies continues in its current form.

Given the above, **we consider that in the long term, the only viable option is for Ofcom focus on significantly simplifying the remedies and focus on delivering to the market a more generic set of inputs with fewer inherent degrees of freedom (compared with the existing range of inputs), in terms of where and how they are supplied.** The remedies in question should focus on measures to reduce the cost of network rollout by alternative providers. We recognise that this is a longer term endeavour and thus would like to signal to Ofcom our willingness to develop these concepts further. One benefit

potentially resulting from measures designed to reduce the cost of network rollout would be to leverage existing metropolitan fibre networks for residential use.

The above predominantly relates to the future direction of business connectivity regulation. We develop these concepts further in Section 6. In Sections 3-5 below we comment on some of Ofcom's proposals that give us grounds for concern.

- The proposal to remove the obligation for cost orientation
- The proposed changes to geographic markets in London
- Other issues: specifically, the treatment of trunk, MISBO services and new business connectivity methods.

3 Pricing and Cost orientation

We have serious and fundamental disagreements with the proposal to relieve BT of its cost orientation obligation in markets where it holds SMP. We are all in favour of pricing flexibility at the retail level (subject to rules on excessive pricing and margin squeeze), but at the wholesale level, breaking the linkage between price and cost has little obvious welfare advantage. While on the surface it might be argued that wholesale pricing flexibility allows for the efficient recovery of costs, these arguments apply primarily to retail markets. Demand for wholesale inputs is a derived demand. It is not obvious that there would be any efficiency gains arising from allowing flexible price setting in wholesale markets. Any benefit from such a move is therefore tenuous and uncertain. The risks on the other hand are significant and potentially severe. Our main areas of disagreement with the proposal to replace the cost orientation obligation with a price control can be summarised as follows:

- Increased scope for gaming, inefficient strategic pricing and entry deterrence
- Reduced clarity around margin squeeze
- Reduced regulatory transparency, closing the door for CPs to raise cases for competition breaches

Even where a price control replaces the cost orientation obligation, this is not sufficient to justify the proposed relaxation of Regulatory Financial Statement (RFS) reporting obligations. We detail the reasons for this in Section 3.1 below.

Increased scope for gaming, inefficient strategic pricing and entry deterrence. Adopting broad baskets would allow BT excessive flexibility in the way it prices wholesale inputs. While the market is regulated as it currently is, where the set of wholesale inputs comprises a multitude of defined products (defined in the SMP conditions according to a wide range of parameters), we consider the scope for strategic gaming of the rules already to be excessive. The removal of the cost orientation obligation would introduce yet another degree of freedom whereby the products on offer would be strategically gamed by, to the disadvantage of the competition but with no offsetting benefit to allocative efficiency.

A further factor is the difference in mix of products that BT uses internally, versus those it sells to its competitors. The charge control remedy only prevents BT from overcharging in aggregate. It does not address BT's financial incentives or ability to set lower prices for more competitive services or those which its own retail business uses proportionately more than its competitors. We are highly concerned that a

price control basket would allow BT to raise prices for services which it does not use, thus enabling it to load price increases onto services for which competition is least likely to develop, or which are proportionately in greater use by competitors. The broader the tariff basket, the greater the risk. To a certain extent, this can be controlled by introducing smaller sub-baskets and smaller sub-caps, but these still represent a departure from the ideal approach of maintaining a link between price and costs.

As BT is well aware, the deployment of alternative infrastructure represents the only means by which its market power will erode over time. It therefore has an incentive to adopt an entry deterrent pricing strategy in segments of the market where such entry is most likely. Considering investment decisions by CPs, cost orientation at the level of "each and every charge" is important in determining what services are economically efficient to self-provide and therefore provide appropriate build/buy signals. If Ofcom wishes to encourage a climate favourable to infrastructure investment, it should beware of the risks of strategic pricing specifically designed to prevent such investment.

Reduced clarity around margin squeeze. One area of concern with the proposal to replace cost orientation obligation with a charge control is reduced clarity around the rules for margin squeeze and the identification of the relevant cost stack. Ofcom has correctly identified that margin squeeze, predatory pricing and/or anticompetitive cross-subsidisation present concerns. However, it has not proposed any remedies that address these risks. A cost orientation obligation (which complements the charge control remedy) would assist in alleviating these concerns in two ways: firstly, by providing clarity on the correct cost stack to use in evaluating margin squeeze at the retail level, and secondly by preventing the deterrence of investment at the wholesale level by charging below cost (similar to the point on pricing for entry deterrence, above).

A further problem with the charge control remedy and the cost orientation condition is that the former is based on a forecast of costs over the charge control period, and is therefore subject to error. Cost orientation on the other hand takes account of actual costs. In principle, this is superior from an allocative efficiency perspective, because BT is able (indeed, required) to adjust prices in reaction to changes in actual costs which may arise over the course of the price control period.

Reduced regulatory transparency. We are seeing significant changes in access markets, due to the development of NGA and FttX. Although the latter is primarily concerned with consumer markets, there are strong linkages between the infrastructure used to serve consumer and business markets, and it is not clear how the underlying costs will be affected. With volumes (and hence unit costs) following an uncertain trajectory, the real risk is what will happen if, by the end of the relevant period, prices are badly out of line with costs. The prospect of a large one-off price change at the start of the next price control period, combined with three prior years in which the market has endured a wide delta between prices and underlying costs (with all the associated competitive distortions and allocative efficiency losses that this entails), is not welcome prospect for the market. A cost orientation obligation on the other hand, would allow a smoother adjustment of prices in line with movements in cost.

If Ofcom were to consider such a change, it would make more sense to do so when the technology scene is more stable than it is today. Yet today, we are at the inflection point of two important technology changes. Firstly, the change underway in access markets referred to above and secondly, the rapid replacement of SDH with Ethernet as the dominant technology for business connectivity. There is significant uncertainty about how relative volumes will shift during the period of the BCMR.

Ironically, Ofcom advance "increased regulatory certainty" as one of the advantages of a price control. We understand the basis for this claim, as prices will follow a predefined path, but it does not stand scrutiny. In actual fact, Ofcom's proposals provide BT with broad freedom to set and change individual charges under the price-cap umbrella. Far from increasing regulatory certainty, it substantially reduces it.

3.1 RFS publication obligations

Ofcom appear to assume that the removal of regulatory accounting obligations follows logically from the removal of cost orientation. We strongly disagree. Even in the absence of a cost orientation obligation, there remain strong reasons to retain the obligation to publish regulatory accounts in at least the same level of detail as currently. Fundamentally, it needs to be highlighted that it is CPs rather than Ofcom who have held BT to account on their obligations. Any suggestion that such obligations be removed, would make it easier for BT to breach their obligations in future than it has been in the past.

Further, the range of regulatory obligations from the publication of accounts (as a light touch remedy) through to cost orientation obligations (where required) has always been to facilitate proportionality of regulatory intervention. In circumstances where more onerous forms of regulation have been removed, stakeholders have relied on the backstop of the lighter remedies which have been retained in order to detect abuses. The publication of detailed accounts would facilitate the detection and enforcement of abuses such as margin squeeze, predatory pricing, breach of equivalence obligations, and so on. Removing accounting obligations on the other hand, would create a binary world in which incumbent is either regulated (with a price cap that is determined on a relatively non-transparent basis) or not regulated.

Furthermore, the accounts must continue to be published annually. This is because BT continues to make fundamental changes to their accounts, which (as was noted in the Ethernet 1 dispute) are often favourable to its interests during disputes. In the absence of such information being published and on a regular basis, including a requirement to publish restatements, it becomes impossible to scrutinise BT's actions. Unless we have the information flowing from one year to the next then we are not able to make sense of BT's actions or indeed the consequences of them. Furthermore, the tendency for adjustments to be convenient for BT) demonstrates the importance of an independent audit process for the RFS.

3.2 BT's geographic discount policy

We support Ofcom's conclusion that geographic discounts should not be taken into consideration in determining whether BT has met its price control obligation. As Ofcom recognises, allowing it to do so would lead to the risk that BT's competitive activity in the more competitive regions would be automatically be offset by the ability to raise prices in the less competitive regions. Thus, contrary to the normal scenario where the setting of prices involves balancing the unit revenue loss associated with a price reduction with an increase in demand, BT's pricing incentives would be distorted by the fact that the revenue impact of a change in prices in one region would be automatically be offset by an equal and opposite change in another region.

Ofcom's reasoning here is sound, but it must be pointed out that exactly the same reasoning can be applied to two other forms of pricing flexibility that Ofcom does plan to allow. These are:

- The pricing of individual products under the overall umbrella in the price control (see above discussion on cost orientation vs. price control), where for the same reasons BT would have the incentive and ability to cross subsidise reductions for more competitive products with price increases for less competitive products;
- The existing geographic structure of prices in the base year. BT faces a powerful incentive to devise a geographic pricing scheme in the base year that would have the same exactly the same anti-competitive effects that Ofcom's policy of disallowing changes in geographic pricing from year-to-year in consideration of BT's compliance with its price control obligation, is intended to prevent.

Thus, Ofcom's reasoning, though sound, has been inconsistently applied to all the situations to which analogous concerns may arise.

In the event that Ofcom does favour a price control over a cost-orientation obligation, we urge Ofcom to signal from the start, that BT will be required to justify any geographic variation in prices in the base year in terms of underlying costs. This would leave open the possibility that a given geographic discount would be deemed by Ofcom to be not cost oriented and therefore, the difference between price and cost would be disallowed in considering whether BT meets its price control obligation. BT would then face the same incentives to ensure that geographic discounts are self-financing at the margin in the base year, as they do with respect to changes in the geographic structure of prices from one year to the next.

4 Geographic Market Definition

We have significant concerns with Ofcom's proposals to enlarge the CELA geographic market to form a new market, termed WECLA that is subject to lighter regulation than the rest of the UK (outside Hull).

We have no disagreement in principle with defining geographic markets according to the status of competition and relaxing regulation in more competitive regions. We consider that Ofcom were correct to adopt this approach in relation to CELA in the previous BCMR, and that subsequent experience has vindicated this decision.

However, WECLA is materially different from CELA. The level of competition in WECLA (outside CELA) is not even approximately equivalent to that in CELA. Furthermore, by Ofcom's own admission, WECLA includes some postcodes that fail to satisfy Ofcom's own test for competition.

In the following paragraphs we explain why we believe that Ofcom's approach to the WECLA market definition is incorrect.

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There has been relatively little change in the business connectivity infrastructure in WECLA since the last review. Investment in new infrastructure by alternative service providers has been of a limited and incremental nature. Indeed, there has been relatively little investment in business connectivity

infrastructure in the UK since 2000. It is unclear why WECLA (not including CELA) should now be deemed sufficiently competitive to operate as a separate geographic market (with lighter regulation) than was the case at the time of the previous BCMR. Perhaps, a more robust analytical process for identifying competitive markets may provide a more valid explanation for the results Ofcom established. However, as explained above, we have significant concerns with the techniques that Ofcom has used, simply because it does not accord with our experience in the WECLA.

This is not to say that Ofcom should not have adopted *any* variation to regulation in WECLA (outside CELA). This region is clearly more competitive than the vast majority of the rest of the UK (except CELA). Rather, our disagreement with Ofcom relates to the following issues:

- The lack of differentiation between WECLA and CELA in the remedies proposed;
- The reality of the market in the WECLA (outside CELA) is quite different from that which Ofcom appears to have deduced from its analysis;
- The inclusion of postcode sectors within the WECLA that do not satisfy Ofcom's competition test.

We discuss each in turn.

As mentioned above, the status of competition in the WECLA (not including CELA) is vastly different from that in CELA. To advance a policy of setting regulatory remedies according to the level of competition by geographic markets, while proposing the same approach to WECLA (outside CELA) and CELA, is simply incoherent. By proposing remedies ostensibly suitable for both regions, Ofcom has in fact proposed remedies suitable for neither region. A better approach would be *more* de-regulation in the CELA and *less* deregulation in the WECLA outside CELA.

Colt's view of the extent of wholesale competition in the WECLA (not including CELA) is somewhat different from Ofcom's view. We believe a key factor contributing to the error in Ofcom's analysis is its assumption that a provider will always be willing to dig 200m to reach a customer. This is clearly a critical assumption, but unfortunately (as explained above) it is utterly incorrect. A further factor might be Ofcom's threshold of two or more CPs within reach of a given site. For this to be a valid indicator of competitive conditions would require a high level of interconnectivity between alternative CPs (other than BT). The fact that CP A has facilities within reach of a given building is of no use to CP B if there is no connection between CP A and B's facilities. In reality, the interconnectedness (and hence, the scope for a viable merchant market) is somewhat low, with the implication that where self-provision is not possible, the CP will normally default to BT as the network of last resort. Either way, Ofcom's conclusions on the state of wholesale competition in the market differs radically from Colt's practical experience, which indicates a far higher reliance on BT's facilities than Ofcom's figures would appear to suggest.

Regarding the inclusion of postcode sectors that do not satisfy Ofcom's test, it is inadequate to justify this on the basis that alternative infrastructure passes through these districts. Creating a new breakout point with the capability to serve nearby locations is not a trivial matter and requires significant time and investment. Therefore, the presence of alternative infrastructure in these locations is insufficient to ensure competitiveness in local business connectivity.

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Furthermore, Colt is very concerned that the finding of no SMP for high bandwidth (> 1Gbit/s) services in the WECLA could prejudice the outcome of separate regulatory proceedings, for example, the consideration as to whether BT should be granted exemption from the requirement to provide "Equivalence of Input", as currently required in the Undertakings, in relation to such services.

While we recognise that the decision as to whether BT should receive exemption from this requirement is not specifically linked to a finding of SMP, it is inevitable that the analysis of competition that led to the finding of "no-SMP" would be influential in the evaluation of whether such exemption is warranted. Of all the potential regulatory interventions on the horizon, BT's recent application for exemption for MISBO in the WECLA is by far the most concerning to Colt. Our concern is primarily that, if granted, BT could use it selectively to raise rivals' costs in order to drive out competition in the market. The possibility that Ofcom's investigation into BT's application might be coloured by a view in a different proceeding that had (incorrectly) identified an adequate supply of alternative infrastructure, is a very serious concern.

We welcome the decision not to extend de-regulation to new cities. There are no cities besides London where competitive infrastructure is sufficiently developed to support de-regulation.

5 Other issues

5.1 Treatment of Trunk

Under current rules, BT is able price some services as "trunk" that are not trunk in any meaningful sense of the word. An arbitrary factor such as the crossing of a TAN boundary can lead to a dramatic difference in pricing compared with a terminating segment that is for all intents and purposes, the same. (Note, the arbitrariness in the categorisation between trunk and terminating segments is an example of precisely the kind of complexity that leads to kinks and quirks in pricing and product availability, discussed elsewhere in this submission).

Ofcom's proposed distinction between "regional" and national trunk in the current BCMR, together with the proposed treatment of regional trunk similarly to terminating segments, is an attempt to iron out these quirks. We see the proposals as an attempt to bring some sanity to the regulatory treatment of trunk services and as such, it is to be lauded.

But there are still anomalies and it is not clear to us that they will have been corrected. For example, it is not clear that the fact that a circuit from London to Reading is more expensive than London to Edinburgh will be corrected by this. This is because they don't seem to be in adjacent TANs. But it is quite clearly an anomaly.

The separation between regional and national trunk also allows Ofcom to carve out the clearly non-competitive aspects of trunk from those that are potentially competitive, thus allowing competitive services to be de-regulated. We are supportive in principle of this, but we are concerned that Ofcom has not gone far enough in carving out all the non-competitive elements of the market currently covered by the broad category known as "trunk". In particular, there are a number of routes where options not only remain limited but the practicalities of switching to an alternative supplier would prove prohibitive.

Ofcom needs to take a more granular approach to national trunk and define specific trunk routes, delineated by competitive conditions, as separate product markets.

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5.2 MISBO services

In general, the introduction of the new category "MISBO" is to be welcomed. In principle, this move brings greater certainty to the regulatory treatment of > 1 Gbit/s services, which as Ofcom notes, are growing in importance.

However, we strongly disagree with the suggestion that WDM is not included. Ofcom's reason for not including WDM is that it is a new technology. It is certainly not a new technology. It is a mainstream technology that has been in widespread use for years. We therefore strongly urge Ofcom to reconsider the treatment of WDM technology within the MISBO category, both from the perspective of product availability and pricing.

5.3 New Business Connectivity Methods

The BCMR is concerned with a relatively narrow set of connectivity options used by UK business customers. A broader range of access options is considered in the Wholesale Local Access Market Review. In the past, this has arguably been a viable approach, especially considering the peculiar fact that in the UK (in contrast to other European countries), LLU has never taken off as a mainstream business connectivity option.

However, the market is currently undergoing significant changes that will rapidly render this distinction obsolete and irrelevant. The key trend here is the development of NGA and the impact this will have on business connectivity options in the UK.

The access infrastructure used by business and residential end-users is converging. (As a side note, it is important to distinguish between access infrastructure on the one hand, and core network technology and services that run over it on the other. The convergence in question relates to the former and not the latter. The advancing access speeds offered by NGA initially intended for residential use, allows such infrastructure increasingly to be exploited by business connectivity services. BT for example, is already heavily promoting its "Infinity business" product range that makes use of its NGA infrastructure.)

The advantages offered by such convergence primarily involve reduced costs due to business connectivity services exploiting the capillarity and density of the residential infrastructure. Any CP that is able to exploit this synergy ahead of the market has a crucial head-start vis-à-vis the competition.

In the light of this, the current restriction on Physical Infrastructure Access (PIA) to residential applications is exposed as absurd. It is massively distorting and effectively presents a free entry ticket to any CP with a foot in both camps. **Likewise, a residentially focused CP is granted an entry platform into the business market at a massively reduced cost base, that business oriented CPs cannot exploit.** Why should a

regulator care about this? Because the source of the advantage is not any inherent difference in cost or service quality, but an artificial barrier to entry created by regulation. We urge Ofcom to review this restriction as a matter of urgency. This point is closely linked with the further comments we make on long term market development in Section 6.

Of course, access to physical infrastructure is not the only method of exploiting NGA infrastructure for business applications. In theory, VULA should have some promise, but at present, the product does not exist in any form that CPs can use. VULA has the theoretical attraction that it allows higher-speed connections than currently available over all-copper access, while offering superior economics to LLU. It is also essential in particular for business operators to compete against BT in an environment where high-speed broadband access becomes ever more widely available. Due to the absence of the distance limitations of copper, it should be available at regional (rather than local) points of handover, allowing access to more customers with a single point of presence. However, this is the point at which theory and practice part company.

The currently mandated VULA solution in the WLA is neither fit for purpose nor fully available. BT has no incentive to progress a business grade product swiftly because it would limit the competitive advantage that it currently enjoys in the form of its Infinity Business portfolio.

Ofcom has appeared to dismiss including VULA as a remedy on the basis that it forecasts only limited take-up for business connectivity over the period covered by the review. But this is purely circular reasoning. Take-up will be limited but primarily because Ofcom is declining to mandate a fully business class variant of the product. We note that only 66% of the UK will be covered by the infrastructure required to support VULA by end 2014, but the parts that are covered are precisely those in which VULA has the greatest potential for business connectivity.

Overall, Ofcom's summary dismissal of VULA as a mandatory product offering within the BCMR displays an extremely narrow view of the market, apparent ignorance of the evolving linkages between business and residential infrastructure, and disregard of the enormous competitive distortions resulting from the fact that a single CP – namely BT – is able to exploit these linkages while denying them to its competitors.

On this basis, we would strongly urge Ofcom to require BT to develop and deploy a business-grade VULA solution in a timely manner.

6 Long-term market development

In this section, we provide some general, high-level comments on the business connectivity market in the UK, and a few ideas for how the market should evolve in the future.

There is a serious question about whether the form of regulatory control embodied in the BCMR can genuinely be said to represent a viable the model for the future. In the long term, we believe that the business connectivity market will be better served by simpler and more generic remedies, based on infrastructure access, dark fibre and VULA.

Despite the fact that (as noted above) the UK's business connectivity requirements are *currently* reasonably well served, the UK market does exhibit some notable drawbacks, some of which are as follows:

- A relatively static market: the lack of infrastructure investment by parties other than BT. The extent of infrastructure deployment in business connectivity by carriers besides BT has changed little since the early 2000s;
- Relatively weak infrastructure competition in most other UK cities besides London;
- Weak competition in backhaul.

A case can be made that the majority of these weaknesses are partly the result of the way the UK market is regulated. During the 1990s, the UK communications infrastructure market saw substantial capital injection and the rapid deployment of new infrastructure. The majority of this infrastructure was focused on London and on high capacity routes between major business sectors. At the time, the business connectivity options available to carriers was limited and largely restricted to retail leased lines based on BT's SDH technology. Following the dot-com crash of the early 2000s, new capital became scarce and investment dried up. The notable feature of the UK market in the last 10 years is that there have been almost no major new deployments of infrastructure by business-to-business CPs. We argue that this is – at least in part – a consequence of the way the market has been regulated. The salient features of the character of business connectivity regulation that we consider contribute to this state of affairs are:

- The limiting of remedies to active services only, where Ofcom, based on the technology existing within BT's network, determines the wholesale inputs that are and are not available;
- Complexity. In the current BCMR, Ofcom required 950 pages of detailed reasoning to determine the range of business connectivity options available to third parties;
- Remedies defined and classified according to a view of BT's network architecture.

Very shortly, the lack of any business class access product that allows business service providers to exploit the synergies between residential and business access (e.g. VULA) would be added to this list.

We argue that these characteristics have the following effects, which are counterproductive for the market:

- A product set that is entirely dependent on the wholesale inputs provided by BT (with the consequence that BT effectively dictates the range of products that are available on the market);
- BT having the capability to dictate and control the pattern of network of network deployment by its competitors;
- Excessive complexity leading to uncertainty and confusion. The complexity of the rules and the product definitions leads to:
    - confusion due to the difficulty in interpreting what the rules mean
    - difficulty in translating a complex and specific intentions into SMP conditions
    - uncertainty as to how BT will interpret and apply the SMP conditions
    - uncertainty due to the wide scope that such detailed and specific rules present for the rules to be gamed; and
    - uncertainty due to the future direction of regulation, given the scope for a minor change in rules to translate to dramatically different outcomes.

- Lack of effective equivalence. Ofcom's remedies are based on a schematic (and simplified) model of BT's network, its internal structure and procurement methods. By exploiting the differences between reality and the assumptions enshrined in regulation, BT is able to game the regulatory process without apparently breaching the equivalence rules.

Perhaps one way to describe the BCMR – in terms of the outcome as opposed to the intention – is that it is an effort in micromanaging the business connectivity market around BT's network. This allows BT to retain its firm grip on the market at the wholesale level (and by extension also at the retail level) by controlling other CPs' deployment of infrastructure around its own network, by exploiting and gaming the complex rules regarding products, pricing and service delivery, and by restricting the services that it provides to wholesale customers to a limited subset of the services that it provides to itself.

6.1 Developing competition in Backhaul

One of the most important symptoms of these deficiencies is a highly uncompetitive backhaul market. Colt has the benefit of operating in all the major European countries and as such, has a strong insight into the comparative strengths and weaknesses of the various regulatory systems. The lack of competition in the backhaul market is one area in which the UK market appears to compare most unfavourably with several of its European neighbours.

From a regulatory perspective, getting backhaul right is a qualitatively different problem from getting access right. This is for two reasons:

- Backhaul products are orders of magnitude more complex than access products, in terms of the number of ways the product could be provided. Backhaul connectivity is defined in terms of many parameters including aggregation, bandwidth, contention, transmission technology, interface, point of handover, methodology of handover, etc., together with myriad pricing options depending on the above parameters. Greater complexity leads to more degrees of freedom in product specification, which in turn leads to greater scope for gaming, and lack of practical equivalence between the products provided internally and externally by the SMP provider; and
- The prospects for competition in backhaul are substantially greater in most cases than the prospects for competition in access.

In combination, these two points suggest that if Ofcom could find a way to reduce barriers to investment in alternative backhaul infrastructure, the benefits to the market would be very great indeed. At present, the way services are delivered leads to a self-defeating spiral: the complexity of the services on offer, combined with the rapid evolution of the market and the sensitivity to seemingly minor changes in the regulatory environment, lead to a highly opaque and uncertain background against which CPs must evaluate their build/buy decisions. Yet, if only they had stable basis against which to consider such investments, CPs would be able to cut through the complexity and gaming. Faced with the prospect of a real alternative to its own valuable services, perhaps even BT would start to sense a competitive imperative to provide backhaul services in a way that is proactively useful instead of intentionally obstructive, thus obviating the need for alternative infrastructure where it is not economically efficient.

In our view, it is time for Ofcom to consider seriously how it might develop a regulatory environment that is more favourable to alternative infrastructure investment, particularly in backhaul. One approach that is worth considering is to focus on a more generic set of inputs around duct access and dark fibre.

6.2 The way forward in Business Connectivity

The market is changing in a way that necessitates a shift in thinking in how business connectivity inputs are provided going forward. In the business connectivity market, the regulatory model has been relatively static for about a decade with minor improvements being made with each review. The model can hardly be said to have failed. Far from it. The UK has world class business connectivity options that supports its status as one of the world's leading financial centres and a location of choice for global and regional headquarters. The lack of business connectivity options is hardly likely to be a reason for MNCs choosing not to locate in the UK.

But there are several areas in which the UK undoubtedly should have done better, the most notable one being the development of sustainable competition in backhaul, a market where other European countries have done far better.

Furthermore, the regulatory model for business connectivity is being undermined by developments in the marketplace, particularly in NGA.

Historically, business and residential connectivity have been distinguished by several factors, which include access speeds, interfaces, service features, and quality of service parameters. In the case of one of these – access speeds – the delta is rapidly closing. One implication of this is that we will start to see substitution at the margin at the lower end between business and residential service options. Another implication is that any service provider with a foot in both camps can exploit the density economics of NGA to provide inputs to business class services and thus claim an unassailable advantage, not due to any genuine service benefit, but instead due to its historic control of access infrastructure. Another implication is that any service provider rolling out its own NGA using BT's PIA product, receives an advantage in providing business connectivity, essentially by means of regulatory arbitrage. Open access to local network infrastructure is now particularly important in the light of fact that public funds are being committed for NGA development, and is clearly a consideration to be borne in mind with regard to the UK's application for clearance under the State Aid rules.

The PIA product is designed to reduce the cost of network rollout for residential service providers seeking to develop their own NGA. This is clearly sensible. The physical infrastructure (ducts and poles) is by far the most expensive component of local access (orders of magnitude higher than the cabling and electronics) and these costs are sunk. It no longer makes sense to make this available to residential access service providers but not to business connectivity service providers.

As we understand it, there are two primary reasons why Ofcom decided against mandating passive remedies in the BCMR. These are firstly, the possibility of increased costs through network duplication, and secondly, the possibility that passive remedies would allow CPs to arbitrage BT's cost recovery model. We understand the economic logic behind both these arguments but in our view, neither constitutes a sound basis for the conclusion that Ofcom has reached.

Regarding network duplication, even in the worst case scenario the effects are very small indeed. For example, if one assumes a cost of fibre of £10 per meter (materials plus laying), then the infrastructure costs of 1000km of fibre is £10m, which would be depreciated over 20 years. It would result in an amount that is almost vanishingly small compared with the total costs of service provision. Furthermore, given that digging costs are (say) £200 per meter, duct access would only have to substitute for one in 20 scenarios where a CP would otherwise dig for it to actually reduce (rather than increase) network duplication costs.

Even if the costs were positive (and material), set against this would be the benefits of greater competition arising from alternative infrastructure deployment, and greater simplicity, regulatory certainty, and relief from the anti-competitive pricing and product strategies that are so richly in evidence today.

As for the argument that infrastructure access would arbitrage BT's common cost recovery model, or "cherry picking", again we understand the basis for this argument, but in our opinion it is very weak for the following two primary reasons:

- Cherry picking will happen anyway. NGA developments will result in substitution of business service revenues at the margin and the erosion of BT's model for recovering common costs. To some extent, part of the cherry picking will be BT's own doing. By leveraging the lower cost base afforded to it by NGA (that is denied to its competitors) it will see some benefit of substitution of the margin by offering lower prices for business connectivity. The extent to which it will do this of course will be limited by the fact that such activity would cannibalise its own business service revenues.
- BT's cost model is designed by itself and primarily optimised according to the level of competitive threats it faces in the differing end-user markets that share common costs. It is far from obvious that BT's cost model is optimal from a welfare perspective and indeed, there is no reason why one should expect it to be. BT can "manage" the extent of competition by loading a disproportionate amount of cost onto active business services, knowing that its competitors have no alternative, while using revenues to subsidise activity in sectors of the market that are more competitive (in the sense that there is a higher risk of network bypass). Infrastructure access in business connectivity would force BT to unwind a cost allocation model that is primarily structured according for its own benefit and not for the benefit of the market as a whole, and would increase pressure on BT to reduce its total costs.