



Ofcom Strategic Review of Digital Communications

Reply by Colt Technology Services

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.

Introduction

Colt welcomes this opportunity to respond to the Ofcom's Digital Strategy Review. Our response is divided into two parts. This first part – the Introduction – provides our general comments on the market and sets out our thoughts on reforming the regulatory framework going forward. The second part answers Ofcom's specific questions, in so far as is relevant to Colt's business.

We welcome in particular, Ofcom's extensive analysis of the performance of the UK's Communications Sector against international comparators and its evidence-based approach to linking regulatory actions with their outcomes. We note (and agree with) the following observations:

- Regulation has generally been successful in its stated aim, which is the introduction of competition into the market
- In international comparisons, the UK performs relatively well on some measures and less well on others. There is no substance to any over-riding conclusion that the UK is "behind" (or conversely, that it is "ahead")
- Identifying the contribution of various factors to different outcomes is a complicated process. The factors – both contemporary and historical – leading to the current state of the world are many and wide-ranging. As such, the identification of the impact of any single policy or proposal – purely based on historical analysis – is very difficult
- Of all the factors that have been analysed, the one factor that makes a substantial difference to NGA deployment is cable penetration. The presence or absence of cable penetration itself is due to a wide range of factors. In this regard, the UK is neither here nor there. It is ahead of France but behind the Netherlands and Belgium.
- For the purposes of this response we generalise the issue of "cable penetration" to "infrastructure competition". We assume (and see no reason to do otherwise) that the ability of cable TV networks to provide a competitive spur to others to invest, is also true of other forms of infrastructure competition.

However, we did not get here by looking in the rear-view mirror. Nor did not get here simply by the wholesale copy-cat adoption of policies from other countries. The UK is an innovator in telecoms policy and has been since the 1980s. Indeed (and as an aside) if we were to make a comment on one respect in which the UK may have fallen behind other countries in recent years (or at least lost its lead), it would be in its capacity to offer an innovative policy frameworks designed to meet the challenges that lie ahead. In our view, altogether too much reliance has been placed on the incumbent to deliver the solutions required.

Another point is that the electronic communications industry is a complicated one, with a vast array of products, services, applications and customer types. And furthermore, the inter-relations

between these components (both vertical and horizontal) add another layer of complexity. It is therefore almost impossible to summarise market performance by means of a few single metrics. Instead, we need a deep, sophisticated and well-informed understanding of how the industry is operating.

As we stand on the threshold of the biggest change in the industry since the first telephone networks were laid more than a century ago, the UK needs to be a leader, not a follower. Above all, we need a joined-up policy approach, designed to realise a clear vision of how we want the market to perform. This of course begs the question: what should the vision be? We offer the following (non-exhaustive) candidates for inclusion in such a vision:

- A transformation of communications infrastructure, such that fibre is present at (or can easily be made available to) all business and residential premises
- A policy framework designed to promote competition at the deepest economically feasible point in the value chain. (This was a policy aspiration from the 2005 TSR and remains valid today). It is important for at least two reasons:
 - (i) The more levels of the value chain that are open to competitive supply, the greater is the scope for differentiation and innovation. (This is an important point in a world where the rapid pace of evolution in higher layer technologies, requires innovation in topologies and architectures at lower layers)
 - (ii) The ability of a vertically integrated supplier with market power to act strategically, in a manner designed to favour its own business vis-à-vis competition, both in pricing and in controlling the technologies used by competitors.
- A policy framework explicitly designed to promote the achievement of desired outcomes by means market forces within a competitive market. Two corollaries of this objective would be to:
 - (i) combat the abuse of market power in all its manifestations, including refusal to supply, anti-competitive pricing and market segmentation
 - (ii) be alert to how different models of competitive access may lead to re-monopolisation or the slow accretion of market dominance
- A policy framework that is “joined up” in so far as it explicitly recognises the linkages between different sub-segments of the communications market, and the ability for outcomes in one sub-segment to foster different outcomes in others. This would avoid “policy silos” (such as “leased lines” and NGA). (In this regard, Ofcom should be open to the possibility that development in NGA may have been held back by the lack of real policy innovation in the leased lines market)

Following on from the above, we argue that Ofcom’s proposals should be aimed at granting power to customers and taking it away from the regulator and the dominant players. The market shaping decisions need to be made by the outcome of customer choice, reflected in efficient investment decisions made within the context of a sufficiently competitive market.

These are not mere slogans or platitudes. A real choice needs to be made into whether **firstly**, to adopt the approach of a “grand plan”, or **secondly**, to set the supply-side conditions such that the market is able to deliver of its own accord, while leaving room for state assistance in specific, defined areas.

We argue that the latter is the more sensible approach. The former, “economic planning” approach is almost certain to have as its object or effect, the entrenchment and accumulation of the incumbent’s market dominance, an outcome inimical to the long term interests of consumers and businesses. To the contrary, we believe Ofcom should be looking to achieve a pluralistic, competitive market in every dimension possible. This is the time for deep supply-side market reforms, not grand plans.

Furthermore, the key questions before us today, relate not to identifiable, isolated sub-segments of the market, but to the entire communications infrastructure in all its technological, topological and geographic dimensions. This being so, Ofcom’s approach should be to liberate the market at the deepest level possible and within reason, allow the market to do the rest.

No grand plan – whether offered by the dominant player, the government, or the regulator – can deliver a durable solution. Yet any less than deep market liberalisation effectively cedes the outcome by default to the choices of a small number of market managers (government and private) all of whom will have their own objectives, carefully calibrated to suit their own interests in the long term. No such plan can ever hope to be fully responsive to customer needs in all their multifarious product and geographic dimensions.

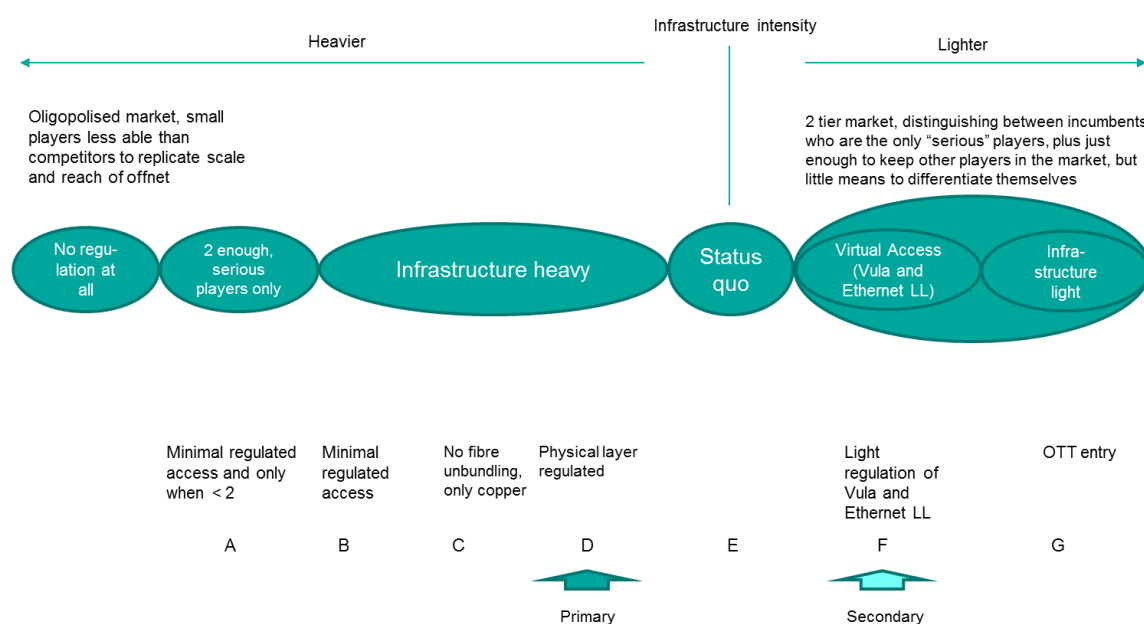
The approach to communications sector regulation that was adopted at the time of market liberalisation in the 1980s was based on a fundamental understanding of the market as comprising a small number of homogeneous products, delivered over infrastructure under natural monopoly conditions. This was 30 years ago and the market has now moved on. Yet such a view of the market persists today. Indeed, our observation is that this incorrect understanding of the market continues to feed the regulatory mind-set.

We argue that the primary policy aspiration of Ofcom’s strategy review should be to create a liquid merchant market for fibre. Once is achieved, (broadly speaking) the market can do the rest. Such a development would lower barriers to entry in a locally granular way, allowing the market to respond to the specific needs (and economics of meeting those needs) in a suitable manner. This is the “What”.

What about the “How”? The upstream input for fibre – the civil infrastructure – is the component of the communications sector value chain that is the least susceptible to innovation, yet comprises the single highest cost component in deploying new network. A liquid market for fibre therefore requires the market for infrastructure to be fully liberalised and this is what we argue Ofcom should do.

Consequently, we argue that Ofcom’s approach should be based on the principle: infrastructure access first. We favour an approach based on “Deep Passive Access” (DPA), primarily based on access to existing civil infrastructure. We call this the “Passive First” strategy. There will of course be many situations where the market is not ready for sole reliance on infrastructure access to deliver a competitive outcome. To some extent this is transitional but it remains unlikely that all competitive problems can be resolved by deep infrastructure access even in the long run. Therefore, we argue that an overlay of active regulation – of a lighter nature than we see today – will continue to be required indefinitely.

Our proposals can be illustrated by means of a model of regulatory approaches (developed by Colt for its own purposes) shown below. It distinguishes between differing regulatory approaches depending on the infrastructure intensity of the form of entry they require, in order to be effective. On the extreme left (which we do not consider to be a credible approach) is no regulation at all. On the extreme right is an approach where it is assumed that competition will come at the service level, by OTT players with little or no infrastructure.



We consider the ideal model of intervention to be one designed to facilitate infrastructure investment for competitors with the resources and the intention to invest, but maintaining a secondary entry point for competitors without an infrastructure a strategy and/or competitors with an infrastructure strategy but unable to deploy it in every location.

In our view, the primary focus of regulation should be on creating an entry point at D, with a secondary entry point at F. D would be the main focus of regulatory intervention. All focus would be on making sure that it works across all parts of the value chain and be service agnostic. F, the secondary focus, would involve a lighter, less intrusive form of regulation than today, designed to complement D and to ensure end-to-end connectivity.

While there may be issues with ensuring cost-stack compatibility between D and F (as there are today), the differences between the new approach and the old would be one of priority. Where conflicts arise today, all the compromises are forced on the “infrastructure heavy” entry point. Examples are the prevention of the use of duct access for the deployment of leased lines and limitation to the access segment only. We note that in effect, these compromises have come close to breaking the product entirely. This is a sacrifice that has been made in order to preserve the integrity of the active products at point F.

In our proposed model, the priority would be the other way round. Infrastructure deployment becomes the primary mode of competitive entry and as such, the compromises (such as are necessary) are imposed on the higher layer interventions.

The focus in our view, should therefore be on creating – as the highest level of priority – a working DPA solution. The solution we envisage would be entirely agnostic at two levels. It would be:

- Technology and service agnostic. There would be no restrictions as to the service for which DPA is sought or the technology on the end of the fibre placed in the ducts; and
- Topology agnostic. There would be no restrictions as to the location within the network hierarchy of the access provider’s network, to which access is sought. This is important in order to allow the creation of multiple networks within networks, not beholden to the architecture or topology of the first network in place.

This framework does, however, allow for limitations to regulation depending on the degree of market power. Geographic (location and/or distance based) markets can be allowed and treated differently depending on the level of competition.

This model in our view, would have the following advantages:

- It allows access at the deepest economically feasible level in the value chain. There is some empirical evidence for this. Colt frequently uses duct access in other jurisdictions, therefore demonstrating that access at this level is economically feasible. Meanwhile, Colt very rarely uses new civil infrastructure construction (except for tactical optimisations) due to the high cost of doing so, thereby demonstrating that access at deeper levels is generally not feasible
- In Colt's experience, the full life-time cost of network deployment through duct access is about 1/10th of that for new civils.
- DPA is fully flexible. It does not matter if ducts are not available along the entire route requested. Duct and new civils can be mixed and matched to create the desired route. In Colt's experience from the Continent, constructing network in this way allows existing duct to be used on average for 90% of the route length.
- A generalised prioritisation of duct access is a proven method of creating a liquid merchant market in fibre. In Colt's experience from the Continent, many of our network expansions are created through a mix of duct access (by Colt) and dark fibre purchased from third parties (who have already accessed the incumbent's ducts for their own reasons). A liquid merchant market in fibre is the most obvious way of solving one of the most serious problems in the UK market: city not-spots (particularly business parks)
- It removes the incumbent's role as de-facto "market manager", effectively setting price relativities for all products flowing throughout the value chain, and determining where NGA services are and are not available. By contrast, we would see innovation in pricing models, leading to increased take up for certain types of customer.
- It allows the market to innovate as to technology choices, network development business models and product types. In particular, it would allow the creation of "category busting" products. Examples would be high-performance networks for niche applications or "in between" products for SMEs (better quality than NGA but cheaper than leased lines).
- It does not undermine existing civils investments. Rather, it allows infrastructure owners to achieve greater value from existing investments by unleashing their option value. As a clear example of this: Colt has a dense fibre network in the area closely corresponding to the "Central London Area" (CLA) defined in the ongoing BCMR. However, its fibre is sparse in adjacent areas such as North London, South London, West London and certain parts of East London. In certain postcodes (typically N, W, SW and SE) the value to Colt of having nearby network, for the purposes of serving customers in those postcodes is precisely zero (due to the high cost of civils). DPA would allow Colt to release option value from past investments by allowing it to extend its on-net product offer to customers in nearby locations.
- It is a natural evolution from the dark fibre product announced in the on-going BCMR. The dark fibre product is a welcome move in the direction of deeper access. However, everything about the product design and the pricing is clearly "Priority F" (in terms of the Colt model described above). As such, it addresses some, but not all of the market needs identified in this submission. Most importantly, it has been introduced in a world where the existing suite of active products, introduced in previous market reviews, remain king, and all other interventions must be calibrated around them. We are arguing for a move towards a

“Priority D” world, where deep infrastructure access is king, and other interventions are calibrated around that.

- It is a low level of regulatory intervention. Duct access is relatively generic input. Once operational and pricing decisions have been made, the need for continual reviews and supervision of exactly what the access provider must sell, is diminished.
- It would allow for a degree of deregulation of higher level services, perhaps by geography, as competition in upstream markets develops further.

Overall, we consider a genuine, concerted focus on DPA, prioritising it and making it work, would be the best possible boost the UK can have for investment in new fibre infrastructure, and ensuring that the market is fit for the future. This is not to say that it is the only solution. There would remain a need for active products to ensure competitive supply in locations unlikely to see alternative infrastructure. There may also be a need for selective state interventions, perhaps in rural areas, where new infrastructure development is uneconomic.

Answers to Ofcom Questions

Overarching issue	Specific questions
Should competition policy remain at the core of good availability outcomes for most consumers, complemented by targeted	<p><i>Q1: Do stakeholders agree that promoting effective and sustainable competition remains an appropriate strategy to deliver efficient investment and widespread availability of services for the majority of consumers, whilst noting the need for complementary public policy action for harder to reach areas across the UK?</i></p> <p><i>Q2: Would alternative models deliver better outcomes for consumers in terms of investment, availability and</i></p>

Yes. The fastest pace of evolution in the industry’s history has coincided with the period since the 1980s, when the market has (to varying degrees) been competitive. Each and every time the market has asked a question of the industry, it is competition that has answered. This is true whether the need has been lower prices, better quality of service, different products or better products. Competition has delivered us the Internet, Ethernet connectivity for business, resilient networks, low latency networks, VoIP, mobile telephony, etc...

The challenge we face today is that the question being asked of the market is a far more fundamental one than has ever been asked before: **how to effect the replacement of the entire infrastructure**. This is not a question that competition can answer using the current models of competitive access. We therefore need a new model to allow competition into this – the deepest – part of the value chain.

It is axiomatically true that it will not be achieved through new civils construction. Unlike the rest of the technology industry, which has seen a secular decline in costs stretching back decades, the cost of civils has risen. Therefore, we need a model that allows the best possible alternative. Open access to existing infrastructure – deep-passive-access (DPA) – is the best of all currently known alternatives. Not only does it allow efficient utilisation of existing infrastructure, it is infinitely flexible, allowing the market to mix and match new and existing infrastructure to deliver services to hitherto unreached locations. Colt has successfully used this approach in jurisdictions where it is available. We consider DPA should be the primary focus of communications regulatory policy in the UK, going forward.

<p>What more can be done through public policy to deliver truly widespread availability?</p>	<p><i>Q3: We are interested in stakeholders' views on the likely future challenges for fixed and mobile service availability. Can a 'good' level of availability for particular services be defined? What options are there for policy makers to do more to extend availability to areas that may otherwise not be commercially viable or take longer to cover?</i></p>
<p>Does convergence and consolidation in our sectors suggest new approaches or tools are required to deliver effective competition?</p>	<p>N/A</p> <p><i>Q4: Do different types of convergence and their effect on overall market structures suggest the need for changes in overarching regulatory strategy or specific policies? Are there new competition or wider policy challenges that will emerge as a result? What evidence is available today on such challenges?</i></p> <p><i>Q5: Do you think that current regulatory and competition tools are suitable to address competition concerns in concentrated markets with no single firm dominance? If not, what changes do you think should be considered in this regard and why?</i></p>

Q4: N/A

Q5: We answer in relation to fixed telecoms, not mobile. If, as we recommend, the focal point of access moves to the passive layer ("priority D"), the question is really about the number of players at the infrastructure level. In the majority of the UK the situation is binary. There are either lots of market players (ie central London) or just one (most of the rest of the UK). The situation will become more complicated if regions start to emerge in which there are say, 2 or 3 competitors. (Arguably, since the progress of certain new operators like Cityfibre, such regions already exist, although we would dispute this conclusion on the grounds that the competitive market and wholesale product portfolios in such regions have yet to mature). This possibility is not entirely fanciful. If the Civil Infrastructure Directive proves a success, potentially many new suppliers of communications infrastructure could emerge. This would yield two important but separate questions:

1. Can geographic markets be defined with sufficient robustness and granularity to identify competitive locations?
2. How should we treat a market with more than one effective competitor, but less than 4 or 5?

The second is the more difficult question and we do not have a solution. In our view, two (or three or four) competitors are not enough, particularly in a market where barriers to entry are close to being absolute. Yet there is a very real question about the legality of imposing remedies without single firm dominance. In practice, it may turn out to be a non-issue due to the fact that the Civil Infrastructure Directive is not SMP based. The "reasonable" price for access for one infrastructure provider would presumably set the price deemed "reasonable" for the other.

These arguments are, however, speculative and dependent on the Civil Infrastructure Directive becoming practically effective (and it is far from clear that it will). Until such time, we argue that the primary reliance should be on the SMP framework to deliver the solutions required by the market.

<p>What model of competition should future regulatory strategy focus on: full end to end networks; passive access to support end to end networks; or active wholesale remedies to deliver downstream competition?</p>	<p><i>Q6: What do you think is the scope for sustainable end-to-end competition in the provision of fixed communications services? Do you think that the potential for competition to vary by geography will change? What might this imply in terms of available regulatory approaches to deliver effective and sustainable competition in future?</i></p> <p><i>Q7: Do you think that some form of access regulation is likely to continue to be needed in the future? If so, do you think we should continue to assess the appropriate form on a case by case basis or is it possible to set out a clear strategic preference for a particular approach (for example, a focus on passive remedies)?</i></p> <p><i>Q8: Do you agree that full end-to-end infrastructure competition in mobile, where viable, is the best means to secure good consumer outcomes? Would alternatives to our current strategy improve these outcomes, and if so, how?</i></p>
---	--

In a similar vein to our answers to Question 1, we think that end-to-end competition, defined by full ownership of all infrastructure is a fantasy that will never be realised. This is due to the high (and increasing) cost of civil works, combined with continue price erosion in downstream markets.

While this may sound disappointing, we think it does not matter at all because there is an alternative – DPA – that provides all of the benefits (without exception) at only 1/10th of the cost.

It follows that without full infrastructure competition (at the civils level), regulation will continue to be required. However, regulation can over time, diminish to a very simple and basic form, simply specifying the product and the price. The beauty of DPA is that it is an infinitely fungible input – once competition is fully established, the regulator need not concern itself with the higher layers. This will inevitably take time. As DPA becomes established, we envisage progressive withdrawal in the higher layers on a geographic basis (in a similar manner as was the case with LLU-bitstream and the BCMR)

<p>Are there new or unresolved competition issues in digital communications services?</p>	<p><i>Q9: In future, might new mobile competition issues arise that could affect consumer outcomes? If so, what are these concerns, and what might give rise to them?</i></p> <p><i>Q10: Does the bundling of a range of digital communications services, including some which may demonstrate enduring competition problems individually, present new competition challenges? If so, how might these issues be resolved through regulation, and does Ofcom have the necessary</i></p>
	<p>N/A</p>

<p>Where regulation is required to promote competition, how can it best secure both efficient investment and effective competition during periods of significant investment in risky new assets?</p>	<p><i>Q11: What might be the most appropriate regulatory approaches to the pricing of wholesale access to new and, risky investments in enduring bottlenecks in future?</i></p> <p><i>Q12: How might such pricing approaches need to evolve over the longer term? For example, when and how should regulated pricing move from pricing freedom towards more traditional charge controls without undermining incentives for further future investment?</i></p>
--	---

The first step should be the identification of the position within the overall value chain of the risky investment (call this R) on the one hand, and the source of market power (M) on the other.

If R is downstream of M, then the question is twofold. First, should a wholesale variant of R be released and if so, at what price (and how should the riskiness of the investment be factored into the price)? This is a complex question and there is no correct answer that can be given a priori. It depends on a judgement made by the regulator.

Second, another way of looking at the problem is that if R has been introduced and the investor has successfully steered the debate into whether a wholesale variant of R should be launched, then a regulatory failure may have already occurred. If M had been open all along, then any question about the release of R and the regulatory treatment thereof would be moot. Either the access seeker or the access provider would be free to invest in R (or not) and the decision would be purely commercial, with no regulatory involvement at all.

We therefore think that, to deal with questions of the regulatory treatment of risky investments, the best approach is to ensure that M is open from the start, thus removing all questions about the regulatory treatment of R.

The more difficult situation arises when M and R are one and the same. We do have precisely this issue today. M is BT's civil infrastructure network and there is no question that BT needs to invest more in its civil infrastructure network.

The starting point should be to consider the nature of these assets. Civil infrastructure assets are essentially utility assets, attracting low and stable returns, and subject to little risk. There is a very real question about how “risky” investment in civil infrastructure really is for an incumbent. In the vast majority of cases, the purpose of investments will be to serve business and residential premises, for which demand should be relatively predictable and stable over time (with little downside risk).

Another question is whether to treat investments in new assets differently from old. This is partly a question of valuation. New civils investments will affect the mix between asset lives and hence book values. The per metre book value of BT’s duct network will increase as the mix of new assets increases. (In theory, this can be solved by the universal application of economic depreciation to all assets, old and new, but this is not necessarily a practical approach and may lead to unearned windfall gains). It is not impossible to imagine the regulatory asset valuation of BT’s civil infrastructure assets increasing over time and this being reflected in prices. Ensuring that any adjustment over time is as smooth and predictable as possible, however, would be an important policy objective. The degree of risk involved in these investments could be reflected by the inclusion of a risk premium in the regulatory cost of capital but we imagine the size of this risk premium would be small.

In the DPA-focused world that Colt favours, there are undoubtedly difficult questions to be asked about funding new investment, where infrastructure is not already present. If an access seeker requests access along a route that does not already exist, would the access provider be required to build it? If so, at what cost? If the access provider were required to build a new route in all circumstances at its own cost, this could significantly increase risk and lead to very inefficient investments. On the other hand, requiring the access provider to meet the entire upfront cost of building may prevent efficient investments taking place. We do not have the answers to these questions but are confident that a pragmatic solution can be found. Some insight could be gained by observing how other utility regulators address this problem, and/or regulators in other countries where a form of DPA is available.

Re Q12 and the longer term: our favoured approach is to focus regulation primarily on the enduring bottlenecks. We do not foresee any developments that would prevent the need for price regulation on these facilities. For downstream products we would recommend a gradual introduction of lighter forms of regulation including (for example), larger baskets and less aggressive price caps.

<p>Are there changes in competitive outcomes or the overall market context that might suggest the need to update or evolve the current model of fixed access network functional separation?</p>	<p><i>Q13: Are there any actual or potential sources of discrimination that may undermine effective competition under the current model of functional separation? What is the evidence for such concerns?</i></p> <p><i>Q14: Are there wider concerns relating to good consumer outcomes that may suggest the need for a new regulatory approach to Openreach?</i></p> <p><i>Q15: Are there specific areas of the current Undertakings and functional separation that require amending in light of market developments since 2005?</i></p> <p><i>Q16: Could structural separation address any concerns identified more effectively than functional separation? What are the advantages and challenges associated with such an approach?</i></p>
---	---

Re Q13. Yes, absolutely. The current model is deeply flawed because EoI is determined on a per-product basis, only after the product has been introduced (usually by means of a regulatory obligation). This allows Openreach to favour its internal divisions at the product strategy level and at the pricing level (relative prices, in situations where BT has the obligation to price a basket of services under an overall cap).

BT's PLC's incentives are to maximise profits across the entire group and one method it has to achieve this is by using price discrimination, reinforced by market segmentation. For price discrimination to work, the product categories must be distinct and recognisable. Any incentive that Openreach (considered as a separate entity) might have to introduce a category-busting product targeted (for example) at SMEs or specific geographies, would be trumped by the PLC incentive to maintain the boundaries between its products in order to preserve its price discrimination scheme. This is similar to the more common and populist story about BT being slow to innovate due to the risk of "cannibalisation". (As a separate but related point, this is also the reason why the artificial regulatory distinction between a WBA/FAMR product on the one hand and a "leased line" is so convenient for BT PLC, because it maintains its ability to price discriminate across its entire product portfolio in a manner that is profit maximising for BT but not necessarily beneficial for the market as a whole).

Meanwhile, the market lacks the ability to introduce such category busting products because it lacks access to the raw inputs that would enable it to do so. In this way, the vertical integration of BT prevents "disruptive competition" (or to put it another way), prevents the launch of products

designed to satisfy un-met needs by certain sectors of the market (defined either by product or geography, or both).

In addition, (as a separate but not wholly unrelated point), the vertical integration of BT acts as a disincentive for BT to innovate at the product level. If BT were to launch a product “X” based on a new technology, BT knows that either of two things will happen. Either X will be deemed to be caught by the existing regulated categories, in which case EoI or EoO will likely follow, and the wholesale active components underlying X will have to be offered to the market as a whole. Or, it will be deemed sufficiently “new” that it does not belong in any existing category and will therefore not be regulated. The possibility of having to offer EoI or EoO is a strong disincentive to BT to introduce any innovative products. This is a dynamic that reinforces the point above regarding BT’s price discrimination policies. Meanwhile, given the fact that other CPs lack access to the network elements that would allow them to introduce some variant-X, the net result is that X is delayed.

Finding evidence for the above is difficult because it is akin to proving a negative, or in other words, identifying the products or technologies that the market would have received, but for BT’s vertical integration. Nevertheless, some evidence is available, notably the long delays in BT offering a sync-E product to the market. Also, there are a number of new technologies and service delivery models, which are proving notably slow to see in the UK on any significant scale. One example is the “Modular-MSP service delivery model”, which Colt has introduced within its own network (but which is confined to its own network footprint). Other examples include Software Defined Networking, Network Function Virtualisation and ultra-low latency services. Again, it is difficult without a crystal ball to state precisely which products have been denied to the market and the impact this has had. However, the generally slow pace of product innovation in the UK would seem at least to be prima facie evidence of the type of incentive compatibility problems resulting from vertical integration, of which we speak above.

Re Q.14 Yes there are wider customer concerns and the main one is quality of service. This has been the subject of extensive public discourse in recent times, so we will not elaborate further here.

Re Q.16 In theory, structural separation could be part of the solution. Colt is in favour of a structural solution because only complete separation of ownership is capable of removing all suspicion of coordinated activity at all tactical and strategic levels. However, it is imperative to understand that structural separation is a costly solution that would take years to implement.

It is also important to understand that many of the issues described above can be addressed by DPA. This is of course, a cheaper remedy that’s tried and tested and of proven effectiveness. DPA would allow competitors the raw inputs needed to introduce disruptive competition and challenge BT’s

profit-maximising price discrimination policies. BT can currently prevent its competitors from doing this by ensuring that the wholesale products available are restricted to the ones that allow competitors to offer a variant of the products that BT already offers at the retail level, with the same price relativities.

DPA would also provide for a solution to the innovation problem: access to the raw network inputs would counteract BT's inherent incentives to delay innovation or delay the launch of innovative technologies and products.

Returning to structural separation, two further points need mentioning.

First, it is not sufficient. While it is true that the incentive compatibility issues resulting from vertical integration may have been a factor preventing Openreach from launching DPA to the market, it is arguably not the only one. If Openreach (post separation) retained control of some downstream (active) inputs, it may well seek to maximise revenues by preventing wholesale customers from accessing its raw inputs. In other words, it does not necessarily follow from structural separation that DPA would be launched. We expect that separation would need to be accompanied by a separate remedy requiring DPA.

Second, it is not necessary either. Most of the problems that separation is intended to solve, can be addressed by DPA.

<p>Should Ofcom do more to further support empowerment at each stage of the consumer's decision-making process?</p>	<p><i>Q17: What do stakeholders think are the greatest risks to continuing effective consumer engagement and empowerment?</i></p> <p><i>Q18: What indicators should Ofcom monitor in order to get an early warning of demand-side issues?</i></p> <p><i>Q19: What options might be considered to address concerns about consumer empowerment at each stage of the decision-making process (access, assess, act)? What more might be required in terms of information provision, switching and measures to help consumers assess the information available to them? What role may Ofcom have to play compared to other stakeholders (including industry)?</i></p>
---	--

We generally agree with the “access, assess, act” approach. In general, we believe in a presumption that markets deliver the right outcomes (if they are sufficiently competitive at the right level). However, we recognise that in a market as complicated as electronic communications, there is a role for the regulator in ensuring customers have the right information. There is also a role for the regulator in facilitating interoperability and switching. The key point we would like to

make, however, is that the level of protection offered by regulation should be proportionate to the nature of the customer. Indeed, all customer protection regulation should be evaluated differently for business and consumer customers. The evaluation should be cognisant of the fact that often:

- The benefits of customer protection regulation for business customers are often lower (as they employ specialist buyers)
- The cost of customer protection regulation for business customers are often higher (as products and pricing plans are very often bespoke to individual customers, who vary substantially according to their needs)

<p>What more should Ofcom do to support better quality of service for consumers, in either competitive or less competitive markets?</p>	<p><i>Q20: Are there examples in competitive or uncompetitive sections of the market where providers are not currently delivering adequate quality of services to consumers? What might be causing such outcomes?</i></p> <p><i>Q21: What further options, if any, should Ofcom consider to secure better quality of service in the digital communications sectors?</i></p>
---	---

We answer this and following questions only briefly as much of the subject matter has been addressed above. While the UK market has much to commend it, there are clearly areas for improvement. The unavailability of NGA networks in certain key areas is clearly one of them. The apparently slow pace of innovation in all markets particularly business communications market is another. Solutions to these problems are unlikely to be found by driving with the rear-view mirror, or by analysis of outcomes in other countries, many of which are wrestling with different problems, having their own source in history.

We believe that most of these questions can be addressed by changing the focus of regulation to “Passive First”. This focuses regulation on the underlying source of market power, releases a far higher portion of the value chain to differentiation and innovation and allows competitors to invest (by technology/product or by geography) where for its own reasons, the incumbent has chosen not to. Active products should be the secondary focus of regulatory intervention. These should remain but regulation should be withdrawn over time.

<p>Are there opportunities for deregulation or simplification that will bring broader benefits whilst avoiding new risks to consumer harm?</p>	<p><i>Q22: Might there be future opportunities to narrow the focus of ex ante economic regulation whilst still protecting consumers against poorer outcomes?</i></p> <p><i>Q23: Where might future network evolutions, including network retirement, offer opportunities for deregulation whilst still supporting good consumer outcomes?</i></p> <p><i>Q24: What are the potential competition and consumer protection implications of the rise of OTT services? Might the adoption of such services enable future deregulation without raising the risk of consumer harm?</i></p> <p><i>Q25: Are there any areas where you think that regulation could be better targeted or removed in future? What would be the benefit of deregulation as well as the main risks to consumers and how these could be mitigated? Please provide evidence to support your proposals.</i></p>
--	---

Yes, the focus of regulation can be narrowed to the fundamental source of market power: the civil infrastructure. A Passive-First strategy, based on Deep Passive Access would allow for a simpler regulatory framework based on a more generic set of inputs. There would be fewer rules and therefore gaming opportunities would be reduced. Today by contrast, regulation is fiendishly complex because the regulator sets – at an extraordinary level of specificity – exactly what the regulated entity must provide, where and how. Complex rules can be cleverly gamed by a well-resourced access provider. A Passive-First strategy would allow much of this to be reduced. Higher layer regulation would still be required but would be of a lighter-touch nature and in some areas, could be withdrawn completely.