PREISKEL & CO

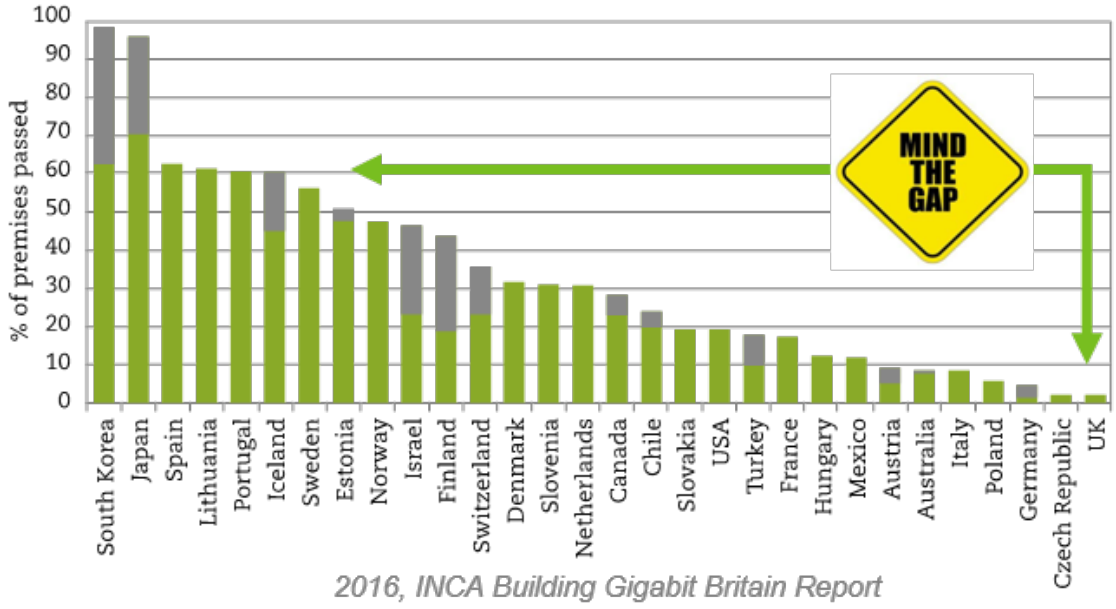
Future Telecoms Infrastructure Review – Response to Call for Evidence

1. What is the existing UK telecoms market structure and policy framework able to deliver?

As currently stands, the UK telecoms market structure and ***policy framework*** is capable of delivering a lot more than it does. It could without much difficulty support full fibre to the premises ("**FTTP**") for a majority of households in the UK within 7-10 years. The key impediment is not lack of capital or capability, or market structure; it is the policy toward UK telecoms regulation determined by Ofcom. Unlike other regulatory policies adopted elsewhere, the focus in the UK is primarily on short term consumer welfare, as is more usual in utility regulation, rather than also supporting investment in infrastructure, or co-investment in infrastructure, which could be described as supporting dynamic competition. Indeed, received wisdom in Ofcom considers the UK to be an inherently unattractive location for investment, and such investment as there is, is being treated as inefficient and exotic. We believe this is a mistaken assumption given the evidence both in the UK and abroad.

Without a change from the model of "utility regulation" to "dynamic competition", the delivery of the Government's ambitions for a full-fibre future, with widespread deployment of 5G is jeopardised. To be clear the overall policy framework and relevant law is not an impediment in itself. It applies throughout Europe. However, as can be seen from the outcomes in the UK, the UK policy, adopted and applied by Ofcom has put the UK on a different path from the rest of Europe.

FTTP coverage in OECD nations at the end of 2015:

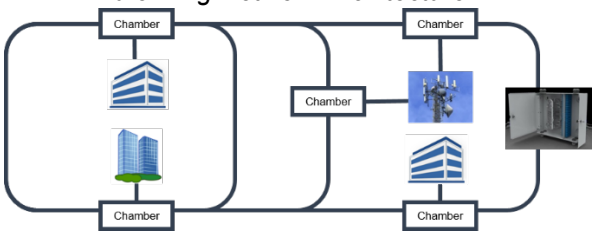


2016, INCA Building Gigabit Britain Report

<u>What is possible and capable of being delivered without any change to the law, in the context of continuing market developments?</u>

Modern fibre-ring technology is being built and could be built more rapidly. Older networks were built on a tree and branch basis, by replacing or upgrading old copper based telephone networks. A basic diagram of the two different types of networks is as follows:

Fibre Ring Network Architecture:



Tree-and-Branch Network Architecture:

The UK needs modern fibre ring networks. The benefits of fibre to the premises deployed on ring basis include:

- Resilience. When the fibre is cut or a fault develops for whatever reason the data can be transmitted around the network in the opposite direction. Users are not faced with a blank screen. With a tree-and-branch network, a cut in the fibre means the connection is down – much like in a simple series electrical circuit, as compared to a parallel circuit.
- Maintenance and fixing the faults can take place with no loss of service to the user, by comparison with tree and branch network where the service is not provided unless and until the fault is fixed.
- Fibre rings are built with excess capacity, enabling flexibility of bandwidth.

Given the increasing demands for data processing and cloud computing, the building of future proof networks is imperative; resilience and quality of service, improving the continuity and quality of experience all need to be prioritised in policy objectives. At the level of infrastructure, fibre rings are more likely to deliver such benefits than the alternatives today.

Network architecture and efficiency; costs of deployment are capable of being recovered across multiple customer groups

Most importantly for the governments' purposes, if fibre rings are deployed, initially to serve the needs of businesses and local authorities in regional cities (on one side of the market), they can be reused and cut the cost of FTTP to consumers in their homes (on the other side of the market). This is currently meeting customers' needs and is supported by a simple fact of UK economic geography; our public buildings and businesses are not, on the whole, in central business districts but are dispersed across our towns and cities. When linked together with fibre rings, businesses in business parks and public buildings located throughout towns naturally enable the fibre to encircle residential locations that were created from our approach to mixed use in town planning. The UK's economic geography thus provides a major opportunity for new entrants who can deploy fibre rings to meet those business and public authority needs, and then provide fibre to "fill in" requirements for mobile masts (demanded by 5G deployment), as well as meeting residential consumer needs. Older tree and branch networks, deployed on a different basis historically, cannot be deployed as efficiently to meet all demands on all sides of the market and are inherently less capable of satisfying forward looking demand.

In its most recent public documents raising funding, CityFibre states that "the FTTH network in York was expanded at a cost of less than £500 per home whose boundary was passed by the network".[1] Such a low figure was reached thanks to use of CityFibre's existing metro network in the area, which the company estimates delivered cost savings of 20-25%. CityFibre has been investing using its well-planned-city approach – initially building a metro network addressed at business and public sector sites, before using that network to build out a residential FTTP network – and now has a network presence in over 40 cities across the UK.

Ofcom, however, believes that there is no direct link between investment for business connectivity and investment that can support public buildings and future residential needs.[2]

[1] See page 75 of CityFibre's Capital Raising Prospectus 2017, available here.
[2] See paragraph 3.118 of the CMA's Final Determination in Case 1261/3/3/16, available here.

In sharp contrast to Ofcom's position, the European Commission has recognised the reality and benefit of fibre rings as an approach which "will reach significant numbers of users while containing costs, and will have positive spill-over effects in the wider economy and society. It is likely to stimulate the extension of local fixed networks, which in turn will support improvements in 5G wireless coverage by providing greater backhaul capabilities".[3]

Fibre rings are also likely to be more efficient and effective in delivering services over time rather than upgrading the old tree and branch network, which will not deliver the forward looking needs for customers of all types. If UK users are to be provided with an improved quality of service and an improved quality of experience, careful consideration should be given to policy promoting the building of fibre rings, in line with the latest EU thinking. This is possible under the current framework, and would only require small shift in current UK regulatory policy.

2. What barriers exist to long term investment in the UK telecoms market (beyond work underway by the Local Full Fibre Networks programme to stimulate demand, and by the Barrier Busting Taskforce to reduce build costs)?

UK telecoms infrastructure networks

We confine our comments below to the layer that matters most for the future; the building of fibre networks. This layer is the basic building block of all telecoms networks and services supporting all communications between people and between computer systems that are important for the internet of things and other developments on the horizon. Many layers and markets exist. Much confusion can be generated by reference to different definitions of networks or the reselling of existing systems, often through overlays or different transmission standards or protocols. The "internet" is, for example, a network of interconnected computers that use the internet protocol (TCP/IP) to link devices worldwide but it uses the same cables that are part of the underlying telecoms infrastructure. Infrastructure investments, which increase the available raw capacity for all products and services involves installing fibre, have potentially, a very high carrying capacity. We do not address other layers in the different product markets that use the underlying infrastructure.

Current players and investors in UK infrastructure markets

The main infrastructure players that are investing are BT, Virgin Media, CityFibre and Hyperoptic, together with a number of other smaller providers such as Colt, Hull, Zayo, B4RN and Kingston in Hull. Virgin Media has announced plans for upgrades to its fibre networks, as has CityFibre, along with BT's plans to invest in fibre and develop its copper network with the upgrades to broadband and roll out of 'G-Fast'. Investment is stimulated by the opportunity to obtain increased returns. However, for a player such as BT, new investment may be constrained by existing investments that may be undercut by new services with which they compete.

BT's position is unique and the multiple pressures it faces are important to understand when considering barriers to market development and the opportunity available for government policy to stimulate investment.

BT has a ubiquitous network. This was not built for the capacity requirements or quality needs of the internet age. As a product of history much of BT's network follows the same architecture as fully copper (and aluminium) telephone networks once did; a tree-and-branch network, leading to a central exchange in each town. BTs architecture also makes it expensive for BT to implement widespread FTTP connectivity, even where the impetus to invest is found.[4] BT also has to respect its obligations

[3] See EU Commission Communication COM(2016) 587, Connectivity for a Competitive Digital Single Market – Towards a European Gigabit Society, available here.

[4] See for example reports of BT abandoning its October 2009 commitment to roll out FTTP to 2.5 million premises here, citing technological challenges and cost of roll-out. Such difficulties resulted in the roll-out only passing 100,000 premises by the end of 2012. Current projects promise roll out to 2 million premises by 2020, see reports here. This sounds more impressive, yet Virgin Media, a much smaller competitor with a track record for considerable infrastructure investment, has indicated its Project Lightning will also bring FTTP to 2 million homes, see reports here. Indeed CityFibre, a new entrant, has entered a deal with

to shareholders and investors, in particular pension funds, which prioritise stable dividend payments over capital appreciation. BT has to maximise return from its existing infrastructure; squeezing as much value as possible out of outdated architecture, while maximising returns and investing as little as possible in technology that would undermine existing investment. BT can be expected to upgrade but only where it faces competitive pressure. To date it has invested where needed.[5] Where it faces competition from alternative infrastructure players such as CityFibre and Virgin Media, BT may respond by investing in new fibre technology. As a result, at best, BT will always be a reluctant supplier of FTTP.

BT was privatised with a view to markets being opened and competitive pressure stimulating investment, but, no longer being state owned or controlled, no part of the regulatory system can require it to invest. The current laws and regulation are not a system designed for state controlled or state directed deployment. It is a system designed to enable demand to drive and stimulate market based investment and competitive response. It would be a mistake to think of BT as the ubiquitous supplier of the next generation of fibre or as the basis for the UK's fibre future.

Barriers to long term investment: changing the horizon for the assessment of demand and supply

The government has taken helpful measures to stimulate demand and demand is known to be strong and growing.[6] Reducing build costs is key and the governments' help here is important. Barriers to entry, investment and expansion include the availability of key technology, knowledgeable people, skilled labour, and most importantly, patient capital, which has to be committed for some time. This is because we have very little currently deployed fibre and the building of fibre networks takes time on the scale needed to meet the UK's needs. Scale and scope economies are known features of telecoms economics, and the bigger the networks built the more traffic carried, the lower the unit costs will be. All of the key components to build fibre networks in the UK are available. However, longer term assessment of demand and time horizons for supply and predictability of regulation is needed. It is our considered view that Ofcom's current policy priorities have hindered, rather than complemented, Government policy. We address these in summary form below.

UK Government policy

UK Government policy regarding telecoms infrastructure is clear; the government[7] wants investment in futureproof, full-fibre networks, to boost the UK's trailing productivity levels and guarantee the digital infrastructure needed for future businesses is in place. This policy is supported by announcements from the government regarding tax relief for full fibre infrastructure,[8] and funding from the productivity fund for fibre rollout as part of the Government's Industrial Strategy.[9]

Ofcom's policy

Ofcom starts with a goal of ensuring efficiency in the provision of products and services offered by BT to consumers. In achieving this aim, it excels in its mission of price capping BT through controlling BT's prices, and has imposed significant and dramatic cuts to prices in its latest market reviews. However, the sharp reduction imposed, for example on BT's leased line prices, limits the investment opportunity for fibre deployments, as can be seen in the following illustrative graph:

Vodafone which will bring FTTP connectivity to 5 million homes and businesses by 2025, with deployment to 1 million premises being achieved within the first phase of roll-out by 2021; see report here. This is in addition to existing FTTP connections the new entrant has in 42 cities across the UK.

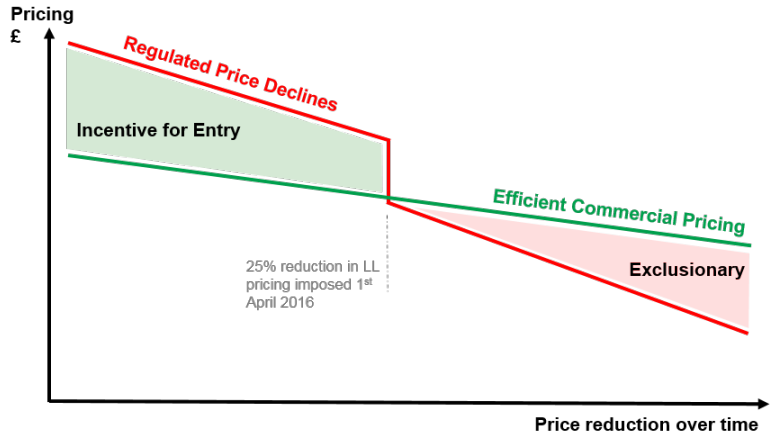
[5] See Ofcom Strategic Review.

[6] See for example Cisco Visual Networking Index forecast: Cisco Visual Networking Index: Forecast and Methodology, 2016–2021; The Zettabyte Era: Trends and Analysis

[7] As detailed in Matt Hancock's speech to the Broadband Stakeholder Group 2017 Conference, available here.

[8] See Government Press Release here.

[9] See Government Press Release here.



Ofcom's long-held focus on price-cap regulation of BT's connectivity products is intended to increase consumer welfare by forcing prices in the market down to a level which reflects BT's costs; entry is only then possible from an entrant that is more efficient than BT. This might be regarded as laudable since it is well established regulatory philosophy that regulation should not create inefficient entry. However, setting the prices as it has to reflect BT's extensive network costs means that prices are lower than the levels at which competitors can currently invest and make a return on investment. This is not to say that entry could not or would not be more efficient over time, given that new networks have advantages over the old, and new ways of building networks deliver increased efficiency over time than the old. The current policy fails to recognise that no new entrant will achieve the scale of BT's ubiquitous network, and extensive, low cost infrastructure, overnight.

Barriers to entry – Ofcom's imposition of price controls and failure to recognise geographic differences

Ofcom creates rather than removes entry barriers. This has become apparent in recent cases, including for example, the Business Connectivity Market Review ("**BCMR**") of 2016. In that decision, Ofcom failed to recognise geographic differences and market realities.[10] It continues today to dismiss new entrant competition by geography and regards recent fibre build which rivals BT's FTTP reach,[11] as insignificant.[12] The policy position has discouraged alternative providers to invest in their own fibre assets. If successful, the Ofcom sponsored policy would lead to the increased use of low priced dark fibre from BT for the UK as a whole. The policy would potentially re-establish BT's position across the whole of the UK as the single supplier of ubiquitous dark fibre, driving out investment by competing players under the mantle of regulation.

The impact will be particularly significant in second tier towns and cities and regions where government is, more generally, seeking to stimulate economic development. Ofcom has removed regulation in the City of London but not in other geographies. In relation to towns and cities beyond London and regions where infrastructure competition could be developing, Ofcom has been found by the Competition Appeal Tribunal ("**CAT**")[13] to be wrong by failing to make different geographical assessments for different local circumstances. The CAT found that Ofcom asked itself the wrong questions and misdirected itself on the true nature and extent of competition by geography. Ofcom's failure to gather evidence, assess geographic and product markets correctly means that investment, which varies by geography, has not been allowed to flourish. Businesses in the North and Scotland, which are of considerable significance for industrial policy and wider government policy, will be held

[10] See CAT Judgement of 10th November 2017 BT vs Ofcom Case No: 1260/3/3/16.
[11] In early 2017, CityFibre had an estimated addressable network footprint of 42 towns and cities, covering approximately 350,000 sites in the BCM, with 4.4 million homes in the network area, with plans to a further 8 towns and cities by 2020. See page 68 CityFibre Capital Raising Prospectus 2017, available here.
[12] See, for example, paragraph 2.23 of Ofcom's Temporary Statement issued in 2017, available here, which refers to CityFibre's recent development, but dismisses it in favour of Ofcom's original analysis in the (now quashed) 2016 BCMR, which itself was based on data from 2015 or earlier.
[13] See CAT decision 10th November 2017 BT vs Ofcom Case No: 1260/3/3/16 findings at par 472 p192.

back. The approach hinders, rather than complements, government and EU policy and runs counter to its industrial strategy. It continues despite BT and CityFibre taking court actions designed to demonstrate that Ofcom's approach was flawed and contrary to the EU position. Indeed, the CAT found that Ofcom had ignored the EU Commission's suggestions, which would have more effectively stimulated investment through reducing barriers to entry for new players in different geographies.[14] The Commission pointed to the benefits of reducing barriers to entry through passive access in the use of BT's existing ducts and poles, and how that would support competition in regional and local geographies across the UK. Ofcom was found by the CAT to have failed to take sufficient account of the Commission's views in its decision making, and has continued to do so to date, leading to further divergence from a pro regional geographic policy.

Barriers to entry: Ofcom's approach to multi customer use of fibre networks

A further barrier to long term investment is Ofcom's arbitrary distinctions and restrictions on market uses for remedies between what Ofcom calls the Fixed Access Market ("**FAM**") and business markets, also often termed as "residential" and "business" use of the same duct and fibre. It could be expected that the same duct and fibre could be used by different customers if within reach. Indeed, there would be no physical impediment or lack of demand for such use. However, Ofcom has managed to achieve an outcome that acts as a barrier to multi customer use.

The regulatory system requires markets to be defined based on customers' uses, after assessing their demands on a forward looking basis. Ofcom has, however, somehow managed to define a use by residential customers who need fibre and allowed new entrants to use BT duct to build fibre for that use, but has then restricted build and usage of that duct and fibre to residential needs in a way that does not allow the same duct and fibre to be used by public building and businesses. This does not reflect customers' actual uses or needs.[15]

What this means in practice is where a road has a BT duct, and has both houses, a school, or a hospital on it, a network player can apply to use BT's duct to build out to the houses, but if it connects the school as well, it will be in breach of the PIA rules. The logical conclusion of this approach is that on that same road, where an infrastructure player wishes to connect the school or hospital, it must dig a separate trench and insert its own duct, whereas for the residential houses it can theoretically put a fibre through BT's pre-existing duct. Where a building is used for both residential dwellings and offices, a fibre can be connected to the building itself, and yet will only be usable by one group. Many small businesses, who contribute significantly to the UK's economy, find themselves, to quote Vodafone, "left straddling between the two".[16]

Barriers to entry- Regulatory creep?[17]

The telecoms regulatory regime is designed to foster entry and a transition from a state-owned monopoly incumbent to a competitive market with multiple private operators. Industry specific regulation was designed to give way to competition law. Ofcom does not appear to be focussing on fostering the introduction and proliferation of competition, and on taking up the role of competition authority rather than regulator. Not only are households struggling with unacceptably low speed connections and variable quality of service across the country, the country's small businesses are probably suffering the most. In many areas of the country, businesses on High Streets, or in business parks are still unable to acquire adequate connectivity.[18] We may have relatively low connectivity prices, but at what cost to the economy at large?

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[14] See CAT decision cited above at footnote 12 at para 474.
[15] Its Passive Infrastructure Access ("**PIA**") remedy being limited to the so-called residential market.
[16] See section 5 of Vodafone's response to Ofcom's Strategic Review of Digital Communications, available here.
[17] See David Currie and John Cubbin's Paper, *Regulatory Creep and Regulatory Withdrawal: Why Regulatory Withdrawal is Feasible and Necessary*, available here. The work highlights the vital importance of regulatory withdrawal in "fast-moving, innovative sectors where incentives are key and regulation may well inevitably lag behind market developments."
[18] The House of Commons Select Committee Paper, *Establishing World-Class Connectivity Throughout the UK*, §§35-37, available here, highlights the current "unacceptable" situation where "business parks have often been missed out by BT's own superfast commercial programme", which has allowed a "serious problem in reaching small businesses in cities and towns."

The outcomes for fibre deployment might be regarded as a price worth paying given the benefits of short term price reductions for consumers. Unfortunately, even on this measure the outcomes are not compelling. The UK is not among the cheapest for consumer broadband, which the European Commission lists as Lithuania, Sweden, Latvia, Romania, and Finland.[19] It should be noted here that Sweden, Lithuania, and Finland all have significantly higher FTTP penetration than the UK, as illustrated in the above table in response to Q1 above. In particular, the premium for faster broadband, between 30 and 100 Mbps, is "much higher than the EU average".[20]

If an alternative approach were adopted, focused on reducing barriers to entry the investment and competitive stimulus would drive BT to invest to keep its customers. The dynamic of competitive markets is missing from Ofcom's approach, which is in truth a type of utility regulation.

Barrier to entry – legal risks and reassurance for co investors

There is a current need to increased investment confidence and to reassure investors and co-operation partners in co-investment schemes that they are legally valid. Whether any co-operation agreement is actually acceptable under UK and EU competition law is dependent on the application of the individual exemption criteria (old Article 85 now 101 and equivalent UK law) or the application of block exemptions. The legal problem (operating as a barrier to entry) is that non-compliance raises a risk of invalidity.

The lack of a system enabling the parties to get an impartial view and clearance may be reducing the level of investment in such arrangements. The EU notification process that used to apply protected against the risk of contractual invalidity, both by ensuring provisional validity for individually notified agreements, and providing a mechanism for demonstrating compliance (and amendment to achieve compliance). This is clearly critically important when considering deals that involve capital investment in infrastructure. It was a critically important enabler supporting investment in the 1990s.

That system was changed primarily because it was popular and the EU Commission could not cope with the number of notifications. The problem remains that the law is an intentionally a "catch all" system under which collaboration agreements of all types are generally illegal unless allowed. Who can know what is allowed is the issue. Categories of agreements are block exempt, but the block exemptions are of uncertain application because they depend on market shares – notoriously incapable of assessment in technology markets. After the "modernisation" of the system in the early 2000's the judgment over what can and what cannot benefit from the exemption is no longer something the Commission will review. Parties are left to their own devices. The Government could facilitate lower risk and increased investment if it provided its own guidance and a swift and simple individual notification and clearance system for such deals.

3. What can the UK learn from the widespread deployment of fibre networks in other countries?

As highlighted in Vodafone's submissions to Ofcom's 2015 Strategic Review of Digital Communications,[21] "Vodafone's … experience in other countries demonstrate that multi-operator investment in fibre networks can work." For example, Vodafone has invested in ultrafast networks, covering around 10 million premises in Spain and Portugal, and in fibre covering 500,000 homes in towns and rural villages in Ireland. Moreover, with multi-operator investment comes improved customer service, at lower prices, with Vodafone showing that in Spain and Portugal it can get customers connected "twice as quickly" than it could when relying on the incumbent's network, with "50% fewer service incidents", of which 87% can be fixed within 24 hours. Indeed, Vodafone Group's

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The paper highlights that it is "vitally important" such businesses' "needs are also sufficiently met, particularly given that SMEs are likely to offer the biggest productivity and economic benefits."

[19] See European Commission Executive Summary of its report on Fixed Broadband Prices in Europe, available here.

[20] See European Commission Report on Fixed Broadband Prices in Europe, available here.

[21] Available here.

Annual Report[22] indicates considerable investment elsewhere in Europe, but such investment has been notably absent in the UK.

Within the UK itself, Vodafone also highlights mobile networks as a successful case study, by comparison to fixed-access networks. Competing network investors have led to an average decline in prices and improvement in service and innovation. However, with the arrival of 5G, which is highly reliant on underlying fibre network infrastructure, we cannot afford to be complacent, but instead require holistic regulation which is appropriate for what is becoming an increasingly converged market, and encourages adequate investment accordingly.

By comparison with France, the French regulator, ARCEP, has focussed on fostering investment in fibre networks. It has done so by encouraging passive infrastructure access, including duct access in particular, in order to facilitate the rollout of fibre networks. The regulator has concluded that only passive access allows for sustainable competition and innovation. The result of its policy? France has seen a 37% year-on-year growth in its FTTP rollout.[23]

4. The government wants to consider all market models that will facilitate the next generation of technologies.

a. What different market models might work in the UK in the longer term, and what risks and opportunities do they present?

b. What should Government consider when assessing the potential for migration from copper to full fibre networks?

5. The Government wants to achieve its digital infrastructure goals at the least additional cost. How should new digital infrastructure be paid for?

We will answer question 4 and 5 together, as both relate to how to finance infrastructure built-out.

With small changes to further stimulate demand an increase in benefit for the public sector could be foreseen. For example, through shifts in procurement definition (scope), government and local government could buy fibre rather than leased lines. This would accelerate the roll-out of fibre infrastructure in towns and cities across the UK. The cost would likely be lower than the current annual spend on leased lines for the relevant sites, if the contract lengths were longer. For an example of how this could work, see CityFibre's roll-out in Peterborough, of which a summary is available here. This would have the additional benefit of maximising the efficacy of public spending, while enabling private-sector investment in FTTP networks.

Moreover, existing infrastructure can be used more efficiently through passive access, network sharing, joint venturing and competition being fostered between product offerings using co-investment in assets more rapidly deployed through joint funding. Further categories of capital investment (some patient, some not) may be attracted alongside existing investors. Such investment by the private sector can be encouraged by government removal of legal barriers that increase risk. For co-investment in fibre networks, joint investments in basic fibre build could be encouraged if government issued guidelines on acceptable joint investment for multi-regional deployment. Currently, such structures can be held back through regulatory misperception of competition by geography and the lack of appropriate process for notification and exemption giving the reassurance needed.

Competition law clearly allows joint venturing and co-investment where the pro-competitive benefits outweigh restrictions on competition. The EU system used to provide formal guidance from the EU Commission on acceptable types of joint venturing. This was very valuable for investors but was abandoned in the 'modernisation' of the system and has unfortunately created confusion over the types of joint venture and co-investment that are likely to be compatible with the law. The CMA could

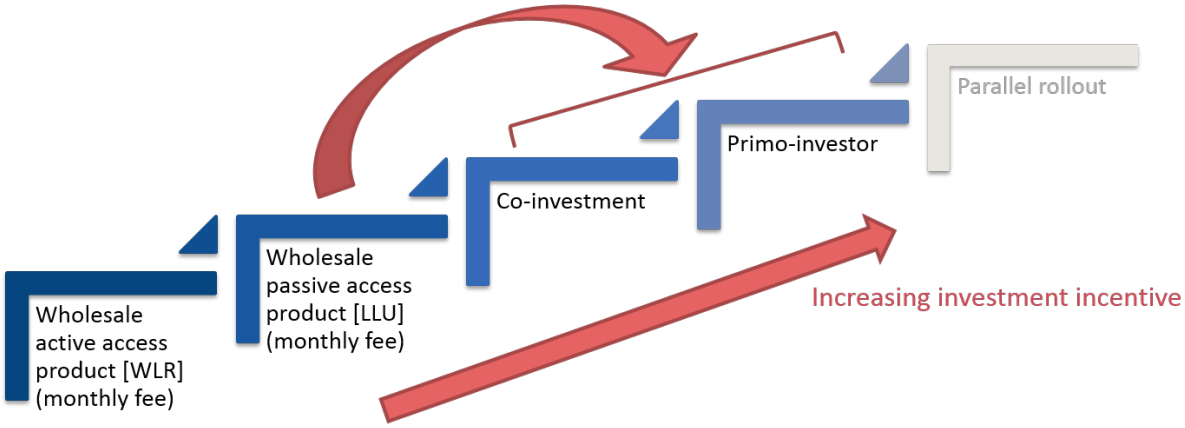
[22] Available here.
[23] As indicated at the ECTA Regulatory Conference 2017.

be asked to review the position, update and urgently provide guidance and individual exemption on acceptable forms of network sharing to encourage co-investment.

Co-investment may also be fostered and operate in the mobile sphere through multi-operator core network provision (MOCN) allowing multiple operators to compete with different products using the same spectrum capacity in mobile services provision.[24]

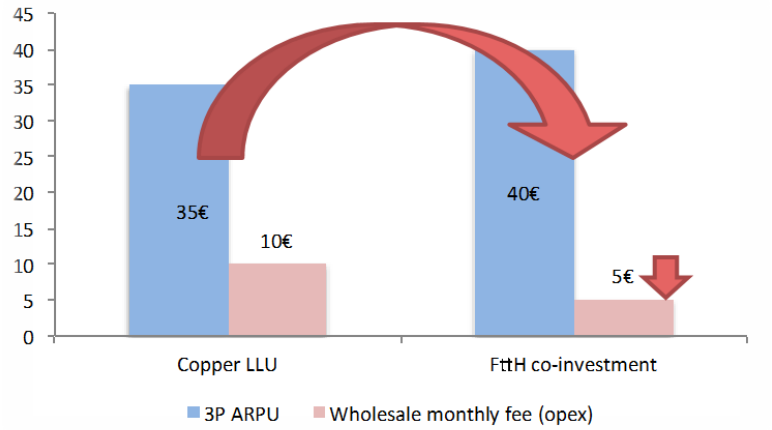
Another key to fostering the build-out of digital infrastructure is to encourage methods of co-investment, as has happened in France, creating another rung on the investment ladder and increasing investment incentives for players in the market.

Co-investment model creates a new rung on the investment ladder[25]



The result of such policy in France has been to decrease the OPEX per fibre line, thus reducing the impact of infrastructure investment on cost structures.

OPEX differential between Copper LLU and FTTP Co-Investment (in France)[26]



The importance of co-investment in fostering infrastructure roll-out is also highlighted in Vodafone's response to Ofcom's Strategic Review of Digital Communications.[27]

Developments requiring co-investment

The neat and simplistic distinction between network operators and resellers is out of date. The actual position is complicated by factors such as:

a. Network outsourcing;

[24] We are aware of pro-competitive examples in Hong Kong and Denmark.
[25] As indicated at the ECTA Regulatory Conference 2017.
[26] As indicated at the ECTA Regulatory Conference 2017.
[27] See page 33 and section 6 of Vodafone's response, available here.

b. Network sharing (such as between the mobile operators for masts and towers and maintenance and deployment);
c. Hybrid players such as full MVNOs;
d. Local loop unbundling; and
e. The opportunity for asset and spectrum sharing.

The established and over used regulatory approach to market definition will become harder and harder to justify and regulation will need to be replaced by active enforcement of competition law based on the reality of a diverse and dynamic market place.

Two key principles

1. Infrastructure deployment is the fundamental building block for the provision of better next generation services (no amount of retail competition can compensate for a lack of infrastructure).

2. Dynamic Competition at every level of the market is key. In our view, there is no example where a monopoly supplier at any level will be sufficient or drive the necessary incentives to ensure efficiency. In Australia the huge cost of building was met by the state, but the experiment is a failure. Local monopolies were created with under the AT&T divestiture model involving long distance/ Regional Bell Operating Company structure, which again failed. Other examples can be provided.

Government action

The primary focus of all decision making should be to facilitate fibre infrastructure deployment (preferably in rings). To this end, policy should:

a. Specify fibre where possible in government purchasing contracts.
b. When looking at consumer benefit in a competition and/or regulatory analysis shift the balance of consideration towards dynamic competition over the longer term and be weighted in favour of investment and innovation as opposed to short term benefits of a price cut or short term consumer welfare only benefitting current consumers.
c. Since infrastructure investment needs to take into account a longer timeframe, the timeframe for forward looking demand analysis should be extended from the current 2 to 3 years to a 5 to 7 year time horizon.
d. Focus on the original role of the state in the market which is one of “Competition where possible - Regulation where necessary” ensure Ofcom steps back where the market can operate.
e. Encourage co-investment in increased capacity and rapidly expanded geographic coverage.
f. Removing the regulatory barrier to entry which imposes a distinction between consumer and business and enable multiple customers to be serviced by the same fibre infrastructure and ducts and poles.
g. Recognise geographic differences and ensure inter-operability and access between fibre networks allowing for small scale deployments to be made by niche operators
h. Remove legal barriers to entry. support co investment models through fast track competition clearance by the CMA enabling a geographic analysis to take place at a more granular level so, for example, operators can network share in a specific rural area where combined demand would allow the joint payback on the investment, allowing investment to take place.
i. Facilitate the efficient use of infrastructure and foster retail product competition. For example, allowing for a MOCN solution in a mobile network could objectively increase competition between products and the overall quality of service and quality of experience for users.