

Future Telecoms Infrastructure Review: Call for Evidence

Response from Tameside MBC

Tameside Metropolitan Borough Council had been investing with its public sector partners in new infrastructure for public sector transformation and cost efficiencies. We have been using a framework - the Thin Layer Model - to share the infrastructure between public sector partners, and with the private sector.

We welcomed the opportunity to work with government to develop these ideas as part of the LFFN programme. We believe there is scope to take the ideas further.

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

- *When will it deliver, and how certain can we be that it will fulfil the Government's ambitions for full fibre networks and 5G deployment?*
- *What will this mean for roll-out of these technologies and for competitive models in different geographic locations?*

Over the last 20 or more years, investment in full fibre has been accelerating in many countries. The record in the UK has been very poor.

Recently in the UK there has been a notable shift in the appetite to invest in full fibre. This is late but arguably inevitable at some point, as bandwidth demands exceed the capacity of the legacy networks. That interest has been stimulated by welcome intervention from the government with the policy focus on 5G and full fibre.

There are multiple problems with simply leaving it to the market to complete this process:

- Investor understanding of the industry remains weak - often focused on an assumption of vertical integrated business models ("how many users can we expect if we invest in this network, at what ARPU?"). Such models are difficult to construct in a competitive market and arguably slow progress.
- Where it is possible to create new vertically integrated models, the benefits for the local digital economy are limited because digital and tech businesses have less opportunity to access the value chain and so competition and innovation is reduced. This will be of critical importance for our 5G infrastructure.
- Path dependencies focus investment on those areas where investors hope to build sufficient scale to make a return to cover high fixed costs. This causes patchy deployment.

The government and local public sector bodies can play an important role in breaking the path dependencies and ensuring a competitive landscape that permits innovation. This is possible by deploying public sector demand, assets and effort focused on a collaborative effort to build infrastructure.

The government has some of the policy framework in place. We would like to see:

- Greater emphasis on collaborative frameworks to support parallel investment.
- Greater emphasis on opening access for small and growing players, for full fibre and crucially for 5G.

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)?

- *What effect do existing revenue streams have on investment plans?*
- *What effect do visibility and predictability of returns have on investment plans?*
- *What is the effect of current infrastructure deployment models?*
- *What impact do current infrastructure sharing arrangements have on investment?*
- *What is the impact of the existing relationship between wholesale and retail markets?*
- *What changes to spectrum licensing and sharing could foster greater innovation and investment in 5G?*

A narrow focus on broadband and managed service revenues distorts the business case for investment in infrastructure.

A layered approach has the potential to provide more solid and predictable returns. But investors are not focused on this.

Thus, an investment in passive infrastructure in a defined geographical zone makes business sense if that passive infrastructure is then offered on an open access wholesale basis such there is no need for, or case for, overbuild. Multiple service providers can then use the infrastructure to build competitive products. Product differentiation is much greater with full passive access. The moment the investor takes an interest in higher layers of the value chain, the model breaks.

Similarly an investment further up the value chain - in Ethernet or broadband - that can access the different geographical passive network elements as if one passive network, then has the scale needed to produce a return without infrastructure ownership.

This is the core of the Thin Layer Model that we have been deploying in Tameside. We want to continue our work with government to refine and spread this model.

The UK will benefit if we can create frameworks to allow:

- Parallel investment in passive in geographical areas without overbuild;
- Frameworks to sew these elements into one shared network;
- Layered investment by competing providers from wavelengths and layer 2 upwards.

The UK will also benefit if we apply the same lessons to 5G:

- Create the equivalent of shared passive infrastructure by encouraging mast and spectrum sharing.
- Allow layered investment and access to the value chain for SMEs going beyond the restricted MVNO model.

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

- *What factors have led to higher full fibre investment in other countries and how applicable are these to the UK?*

- *What have been the impacts of fibre roll-out models in other countries on competition dynamics, consumer bills, and risk allocation?*
- *To what extent can the fibre that has been rolled out internationally be used for mobile backhaul, and what lessons can the UK learn?*

Many factors have led to greater investment in full fibre in other countries. Some of these have lessons for the UK. We would point for example to the value that has been generated by the Stockab intervention in the 1990s:

- Early intervention by the state to start a process that requires no ongoing subsidy;
- Focus on the passive layer that has created a healthy ecosystem with multiple providers able to differentiate and innovate with products. This produces intense price competition at the service layer, where consumers benefit.

However the roll-outs in other countries have all had problems. Being late to start, the UK has an opportunity to create a better infrastructure that supports the vital digital and tech sector, and prepares the way for 5G.

It can do this by focusing on:

- Ways for investments in the expensive physical layer to complement one another. A useful guide here is the Arcep concept of *mutualisation verticale*. By working through shared frameworks like the Thin Layer Model to make the passive network available to wholesale active operators and ISPs, investor risk is greatly reduced.
- Opening up the infrastructure for digital-tech business to access directly and add value. This requires investment in carrier-neutral shared exchange points and edge-hosting. The state has an important role to play here because it can 'name the place'.

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?*
- *What consequences could different market structures, including ones which support longer pay-back periods, have on the investment environment, competition and outcomes for consumers?*
 - *How might these vary in different geographic areas of the UK, including urban and rural areas?*
 - *Over what timescale could market models be changed, and what policy conditions would be necessary to enable this?*
 - *Are the current arrangements for BT legal separation working effectively?*

* *Market models which you may wish to consider in responding could include:*

- *Infrastructure competition between different network providers wherever possible*
- *Collaborative models at an infrastructure level*

- *Regulatory asset bases, franchise models, cap and floor regimes, a diversified model to account for geographic variation, and/or gainshare models for infrastructure provision*
- *Risk sharing models between infrastructure providers and retail providers*

We have long thought the debate between infrastructure monopoly and infrastructure competition models to be sterile. We greatly welcome the inclusion of collaborative models in this list.

Investment in the physical layer is costly, but with the right frameworks can have low risk. This implies longer payback periods. However, we are not doing enough to take advantage of opportunity:

- Ensuring that open access duct is installed in new developments. This is potentially using a gainshare model.
- Using the notion of 'dig once' to install duct when transport infrastructure is upgraded.
- Dig once ordinances might be extended even to utilities as in parts of the USA.

A dig once approach necessarily works best over a long timescale. However in Tameside we have seen stranded assets so created come into use more quickly than anticipated.

The government and local authorities can take a lead in these areas. It is essential that duct is then made available for shared access. Tameside would be keen to work with government building on the work that we have already done with the notion of dig once.

Conventional wisdom is that open access networks work better in urban areas, and that in rural areas where there is less risk of overbuild and higher fixed operating costs, vertical models are more appropriate.

We wonder whether this has to be the case, and whether shared open access backhaul that serves multiple communities (a path dependency issue) and shared access for ISPs to all the communities, could support ISP service-layer competition. Thus for example, the work with Network Rail offers the opportunity for shared multi-point backhaul. A large part of Tameside is rural and we would welcome an opportunity to work with government exploring this approach.

We are sceptical of the value of risk sharing between layers. We see the biggest advantage in:

- Risk apportionment through layering;
- Risk mitigation through shared physical layer that allows parallel investment rather than competitive overbuild.

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

- *Over what time period could migration occur?*
- *What phases might migration be required to go through?*
- *What would be the pros and cons for markets and competition?*
- *What would the implications be for different groups of consumers?*

We have not formed a view on these issues except that we worry about intervention that is predicated on 'roll-outs'. We point to the evolution of the Internet itself where it is the framework for collaboration - the TCP/IP stack, shared protocols, Internet exchange points - that has driven deployment. The rolled-out alternatives (eg X.400) withered.

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

- *Are consumers (residential and business) willing and able to pay for new digital infrastructure, given its expected benefits?*
- *What could incentivise investors and shareholders to make long-term investment decisions in telecoms infrastructure?*
- *What is the potential role of government in stimulating demand or otherwise de-risking new infrastructure investment?*

As we have argued in this response, we believe that with the right framework:

- Layering investment opportunity between physical, passive, active and service layers,
- Allowing and encouraging parallel investment in geographies,
- Naming carrier-neutral exchange locations,

- existing retail revenues at the service layer, then working through to wholesale at lower layers, could drive rapid and productive investment.

Further the state can reduce additional cost using the notions already being explored in LFFN with some extensions:

- Taking advantage of dig once opportunity;
- Using public sector assets to play a role, without fragmentary 'concession' models;
- Leveraging public and private sector demand without large-scale anchor tenancy: using frameworks as suggested in this response helps public and private sector to construct a business case to meet individual needs (a point-to-point connection for example) by investing in infrastructure, and then share that infrastructure more widely.

We believe the government has a powerful role to play:

- Helping with the creation of collaborative frameworks like the Tameside model.
- Providing assistance with dig once frameworks, perhaps even backed with legislation.
- Funding targeted attempts to break path dependencies - for example creating neutral exchange points, funding shared multi-point backhaul using rail, motorways, canals.
- Encouraging the development of shared infrastructure to support 5G deployment.