openreach

Promoting investment and competition in fibre networks: Initial proposals – approach to cost modelling

Openreach response to Ofcom's consultation

Foreword

This response is provided by Openreach Limited[1]. Openreach is a wholesale network provider. We support more than 600 Communications Providers (CPs) to connect the 30 million UK homes and business to their networks. We sell our products and services to CPs so they can add their own products and provide their customers with bundled landline, mobile, broadband, TV and data services. Our services are available to everybody and our products have the same prices, terms and conditions, no matter who buys them.

As noted at various points in this response, we reserve our right to make further submissions on Ofcom's modelling approach as and when Ofcom consults on the specific detail of its modelling and the outputs produced and relied upon in making policy decisions.

[1] Openreach Limited is a wholly-owned subsidiary of BT Group Plc.

Promoting competition and investment in fibre networks: initial consultation on the approach to modelling the cost a fibre network

1. One of Ofcom's key strategic objectives is to encourage the large-scale deployment of new fibre networks. In this context, we agree that it is important that Ofcom attempts to understand the likely future costs of building such networks. This would provide Ofcom with additional insights into the commercial challenges investors (or potential investors) are facing today and will face in the future and will assist in considering future policy options to support its strategic objective.

2. Ofcom is constructing a detailed, scenario-driven bottom-up model of fibre network build. The overall design of the model would produce two key outputs under a range of different scenarios:

    - **total network build costs** under a range of network deployment and demand scenarios – i.e. for different network builders deploying different scales of network build in different geographies at different pace to deliver different forecast volumes of services.

    - **service-level unit costs** for each set of deployment and demand scenarios – i.e. the model generates a 'cost recovery' profile for an assumed set of services and an assumed level of demand for those services as they are supplied over the assumed network deployment.

3. By implication, under any combination of scenarios, if service-level prices were set to equal the service-level unit costs derived by Ofcom's model ***and*** take-up of those services was as forecast, investors would get a fair return (i.e. in line with a return the model assumes would be 'fair'). Running different deployment and service demand/supply scenarios through such a model, could therefore assist Ofcom in thinking about a range of policy issues, including:

    - What price levels potential network builders in different geographic areas would need to achieve to drive successful investments at different levels of take-up;

    - The scope for there to be competitive fibre deployment by 2 or more builders in a particular area;

    - How anchor price controls on existing access services on copper and VDSL network and/or on FTTP services might affect incentives to invest in alternative fibre networks by, for instance, making it harder to set prices for services over the fibre network at levels that would support cost recovery; and

    - What policy approaches – allowing higher prices, government subsidy – could be needed to support investment in more expensive build areas with limited scope for competitive build.

4. However, the challenges and limitations of this cost-modelling exercise should not be understated and this needs to be factored in to Ofcom's approach to building the model. The value of any model as a tool for considering the policy options faced by Ofcom today will be contingent on:

    - the reasonableness of the bottom-up model's **design and calibration** in attempting to identify the engineering requirements for a network deployment plan in any given area and derive network build costs;

    - the relevance of the **scenarios selected to drive model outputs** and **approaches taken to generate service-level unit costs** to the policy issues under consideration; and

    - **how Ofcom uses the model** in making policy decisions.

The bottom-up model's design and calibration

5. We believe the high-level approach Ofcom would take to the modelling exercise and the assumptions it would make around the network elements required to construct a fibre network (as summarised in Section 2 of the consultation paper and in Cartesian's Model Report) are broadly reasonable. The model captures the assets and activities need to construct and operate a fibre network. However, it is a much more detailed exercise to ensure that the specific design assumptions and calibration of the model capture realistic views on the volumes of network elements that might be required to construct fibre networks across different geographies within the UK by different network builders.

6. To this end, we welcome Ofcom's statements that it would look to calibrate its model by reference to operator data where available and will work with Ofcom to support this exercise over coming months. We would also welcome more detail on the way in which the model makes assumptions about network routing and design in different geographies and how this differs under 'scorched earth' and 'scorched node' assumptions. We can then compare assumptions to our own experiences and make more informed comments on why specific differences might arise.

7. More generally, it is important to recognise that Ofcom is conducting a desk-based exercise that would attempt to forecast how network could be deployed in any area of the UK – going well beyond areas where Openreach or other builders have deployed. While a desk-based approach can be taken to estimating build design and associated costs, network builders would always follow-up such desk-based assessments with detailed local surveys before finalising specific deployment plans for an area. Plans and cost estimates may be further iterated once build in an area is underway. This is why network builders will tend to allow for some contingency around build costs assumed in investment plans built on desk-based assessments. Therefore, as well as testing the reasonableness of its assumptions on build design with Openreach and other network builders, Ofcom look to should factor uncertainties into its modelling through allowing contingency in order to avoid outputs being skewed by assumptions around build design and build cost that may not be achievable in the real world.

8. In Section 4 of the consultation and, again, in the Cartesian Model Report, some further detail is provided around network dimensioning assumptions. These will drive the volume of network elements required for a given level of assumed coverage and assumed demand. We note that the approach would assume, among other things:

    - Any assumed network deployment across postcode sectors would deploy in sequence from lowest cost to highest cost sectors as determined by the model;
    - Networks are deployed to reach FTTP customers first, with leased lines supplied as demand is assumed to arise; and
    - Physical infrastructure is shared where capacity is available.

9. It is not clear at this stage how these assumptions would directly affect the way the model generated outputs on both total network build costs and service-level unit costs, but we would note that these assumptions will not reflect the way in which all networks are likely to be deployed – e.g. we would not build sequentially across different postcode sectors but would look for build to contiguous exchange areas; we are building to a range of geotypes with a diverse geographic spread across the nations and regions, so we are not working to a deployment plan that works from lowest cost up to highest cost in order; many network builders will focus on business customers first and build out networks from those areas; etc.

10. This emphasises the importance of understanding the sensitivity of outputs to variances in these assumptions and of ensuring that any assumptions made are considered appropriate to the purpose of the modelling exercise. By way of example, if Ofcom wanted to promote network deployment across a wide and diverse geographic area it is not clear that the proposed sequencing assumption would be appropriate given that this might have the effect of understating or

overstating total build costs and/or the phasing of cost recovery for a given scale of deployment. It would be helpful to engage with Ofcom to discuss and understand these assumptions in more detail.

The scenarios selected to drive model outputs and approach to deriving service-level unit costs

11. Ofcom is building a model that would allow it to derive network build costs and service-level unit costs for a broad range of scenarios around deployment and demand. It is helpful at this stage to build in that capability and flexibility. However, this begs the question about what scenarios will be relied upon – or given weight – in considering particular policy issues. As we set out below, it does not appear at this stage that Ofcom would intend to use specific unit cost outputs under specific scenarios to determine price levels for any services offered over Openreach's fibre networks. It may therefore be appropriate for Ofcom to give weight to a range of cost estimates generated by its model under different scenarios when considering its policy options. For instance, if the policy focus was on understanding the scope for competitive FTTP build in an area, it would be logical to consider unit costs based on market shares consistent with competing access networks as it assesses the scope for cost recovery and how that could affect today's network investment decisions. Other scenarios may be more appropriate for other policy issues and questions.

12. Similar issues arise with Ofcom's modelling options for "cost recovery" set out in Section 5 of the consultation. Among other things, Ofcom sets out different depreciation approaches that could be used and different methodologies for how shared costs could be allocated between – and recovered from – the different services offered from fibre networks. The relevance of the choices made between these approaches and methodologies again ultimately depends on how Ofcom might use model outputs to drive policy decisions. For instance, the depreciation approach adopted and method for allocating shared costs would be highly significant if Ofcom were looking to use the model to determine the specific level of prices that should be set at any point in time for any or each service supplied over the network. However, the need to choose between modelling assumptions may be less important where Ofcom is using the model outputs as a tool to understand what *options* network builders might face in extracting value from their investments and what paths exist for them to deliver full cost recovery, including a fair return for their investors. As discussed below, our expectation is that Ofcom would not be using model outputs to determine specific price levels. It therefore makes sense for Ofcom to build the model in a way that allows different views of potential cost recovery to be derived, but not determine a single way in which this should happen.

13. Furthermore, we note that any depreciation costs derived under different approaches and/or shared costs allocated to services under different methodologies will necessarily be sensitive to assumptions made about the future in terms of levels of demand and mix of services sold. So the choice of "cost recovery" methodology would work with the choice of deployment and demand scenario to derive different levels of service-level unit costs.

14. Network builders face huge uncertainty around future levels of demand for services and would want flexibility over time in dealing with the challenge of how to recover the costs of investment and deliver a fair return to their investments. They will make judgements ahead of investment about how and when costs could be recovered across a portfolio of services during a period where customer valuations of bandwidth capability and/or service reliability/quality are uncertain but expected to grow. But they would recognise the potential need to adjust their approach in light of market developments. In these circumstances, it would not be appropriate, from a policy perspective, to place undue weight on particular set of unit cost figures that were driven not just by a particular approach to depreciation and/or shared cost allocations, but by a particular demand scenario based on a view of the volume and mix of services that might be sold. Instead, as discussed below, Ofcom should adopt an open approach that allows the selection of scenarios and choice of cost recovery methodologies to be flexed to produce a range of unit cost figures that could then allow judgements to be made about key regulatory policy decisions.

How Ofcom uses the model in making policy decisions

15. As suggested above, the relevance around many of the modelling issues Ofcom is considering – choice of deployment and demand scenarios and choice of cost recovery methodology – will be linked to the way in which Ofcom envisages it might use model outputs.

16. Our view is that the primary use of the model is a tool to help inform regulatory judgements around policy choices rather than to determine specific price levels, noting that:

    - Under the March 2019 Approach to remedies consultation, Ofcom did not propose 'cost-based' charge controls on FTTP services. It therefore follows that there are no plans to use the outputs of the model to directly determine the prices that Openreach would be allowed to charge for the supply of any FTTP services.

    - While Ofcom had suggested that 'RAB style regulation' might be applied in geographic areas defined as 'non-competitive', it is not clear that this means Ofcom would look to set prices by reference to forecasts of FTTP build costs over time rather than by reference to incurred costs.

17. Ofcom should therefore be looking to use the model to derive outputs in a flexible way that allows it to, for instance, identify a range of plausible figures for total network build costs in a particular geographic area and then assess the challenges and options faced by network builders in driving cost recovery from the prices set across different services over a reasonable time period. So, as noted above, Ofcom could consider the extent to which anchor prices on existing services might impact the ability of network builders to sustain prices for services on the fibre network at levels that would support cost recovery. As a result, it could consider the extent to which higher anchor price levels would support network investment. Ofcom could also use outputs from the cost model relating to estimated build in postcode sectors in the provisionally defined 'non-competitive' area to consider how to set regulatory remedies.

18. We would expect Ofcom to narrow down the network deployment and demand scenarios used to estimate total network build costs in different areas and select scenarios relevant to the policy issue they are considering (e.g. as noted above, using demand scenarios consistent with the presence of competing networks where Ofcom wants to consider the conditions that would support competitive build). However, we believe Ofcom can and should be more flexible in its approach to cost recovery assumptions to ensure it considers a wide range of routes network builders could take to deliver fair returns on investments. In both cases, Ofcom should be transparent about its choices and the range of outcomes it gives weight to when making policy decisions.

19. We would also not expect Ofcom's policy decisions to be exclusively driven by outputs from the cost model. The exercise Ofcom is carrying out should be broadly similar to that being carried out by all network builders and potential network builders ahead of network build. To obtain support for any deployment plan, network builders – whether Openreach or alternative network suppliers – will need to take a view on expected costs of deploying and operating the planned network and identify the conditions under which they might expect to generate revenues that could earn a sufficiently attractive return in a reasonable timeframe. Investors will need to assess the achievability of any proposed deployment presented to them, taking account of a range of risks and uncertainties faced ahead of build, including how demand and supply conditions may evolve. Build would only proceed where investors expect, taking account of the balance of identified risks and opportunities, that the investment would drive a fair return.

20. We would expect that as part of this market review, Ofcom would have sight of the detail of investment plans produced by different network builders and these will provide highly relevant insights into how investors are actually making investment decisions – e.g. what are their business models, what expectations do they have about payback durations,

expected returns, risks, etc. Ofcom should avoid assuming its model provides a uniquely objective view of the economics of the investment decision when information presented to investment boards, etc, would need to be based on robustly developed forecasts of expected costs and revenues.

Next steps

21. We will work with Ofcom to help to calibrate the model in an appropriate way reflecting our experiences of network build to date and expectations of build design and costings in different geographic areas. We would also welcome the opportunity to gain a better understanding of Ofcom's assumptions in key areas and of how Ofcom envisages using the model in making policy decisions.