

O2 (UK) LIMITED RESPONSE

OFCOM CONSULTATION: FUTURE BROADBAND – POLICY APPROACH TO NEXT GENERATION ACCESS

Executive summary

A balanced regime

1. As an investor in the UK, O2 is supportive of a balanced regulatory framework that encourages efficient and timely investment by all market players - not just by the incumbent alone - in next generation access (NGA).

Know where you are going

2. We are mindful of the difficulties inherent in defining a regulatory framework for a NGA network environment. We welcome the analysis Ofcom has done to date. It has established a timely and essential dialogue on what is a challenging regulatory area. We believe that Ofcom's consultation sets out some interesting and constructive options – although, we believe that more work is necessary in some areas to determine if they are the right cornerstones for the regulatory framework going forward. Playing out scenarios might help identify possible future competitive landscapes – and the likely impact for customers.

Be forward looking

3. We believe that Ofcom can be innovative in its approach. As Ofcom recognises, mechanically rolling the existing regime onto next generation access networks presents considerable risk – and runs counter to the principle that remedies must be designed for the specifics of any market failure. Rather, Ofcom must stand back and ask itself: will the market deliver competition to the benefit of consumers of its own accord or are enduring bottlenecks likely to arise (market failure) such that intervention is necessary for next generation deployments. Ofcom's founding ideals of intervening only where justified and with the lightest possible approach remain relevant. The debate is: what are the right principles, what are the right potential remedies for next generation access, and to a large extent there is then a separate debate about where and to whom the remedies need to be applied (market reviews and assessment of the level of competition).

A balanced non-disruptive approach

4. As an investor in LLU, O2 not surprisingly wishes to see a smooth, appropriately signalled, non-disruptive transition from current copper networks towards next

generation access networks that allows market players to adapt. We see some proposals of the consultation document as positive in this regard. We welcome Ofcom's analysis of the potential attractiveness of a range of passive and active access products. However, we nonetheless believe that some remedies require a more detailed assessment, such as an evaluation of the potential for access to ducts and the potential evolution of other passive access options from a new entrant perspective. Such solutions, either regulated or commercial, may make investment by alternative players feasible without the inefficiencies and limitations of a single network model.

5. Finding balance in the regulatory regime will be crucial: enabling the regime to be light touch and encourage the market to work where it can to deliver sufficient and sustainable competition whilst elsewhere ensuring that, where necessary, competition is fostered through the right ex ante approaches.
6. We also believe that clarity as to the application and role and of BT's Undertakings in a next generation access environment is essential. Ofcom begins to touch on this dimension in Section 8 of the consultation.

Introduction

Our perspective

7. O2 welcomes the opportunity to comment on Ofcom's emerging policy approach to next generation access.
8. In responding to this consultation, O2 (UK) Limited ("O2") is able to draw on its perspective as an investor in the UK market – both as a new broadband player (based on unbundling) and as an established mobile player. In addition, O2 has the benefit of other Telefonica companies' experience in some other EU territories as either new entrant or incumbent players. As such, we believe our perspective can be a useful litmus test for helping Ofcom shape the right balanced policy approach to next generation access networks in the UK.

A timely approach

9. As Ofcom recognises, the development of the right balanced regulatory framework is an important and timely piece of work which is needed in order to help promote competition and consumer interests and provide regulatory clarity for investors. We share Ofcom's view that, notwithstanding any market uncertainties or discussion around how and why the timing of UK deployment may differ to other markets, it is important for Ofcom to now move forward to provide as much clarity and transparency to stakeholders as possible in this debate. It is central to ensure that regulation does not distort efficient and timely investment in next generation access and moreover, that the migration from today's regulatory regime is an appropriate one for all stakeholders.

10. Accordingly, we welcome the clarity Ofcom now seeks to provide about both the regulatory principles it believes should underpin its approach – as well as the more detailed discussion around the active and passive access remedies Ofcom believes would be appropriate for next generation access (where an operator has significant market power in the relevant market).
11. O2 very much welcomes the UK debate Ofcom has sought to encourage about what the right balanced regulatory approach for next generation should be, how Ofcom should tackle the regulatory challenges inherent in the work and, just as importantly, grasp the regulatory opportunities afforded¹.

Robust founding principles

12. O2 believes that the fundamental cornerstones of Ofcom's approach to regulation expressed upon Ofcom's foundation: a bias against intervention and only intervene where necessary (and then in as light as touch manner as possible) remain as relevant for next generation access as they have always been. We are also firm supporters of Ofcom's policy to find a stable and non disruptive deregulatory path wherever possible: removing sector specific regulation where it can and relying on its concurrent powers under the Competition Act.

Be forward looking

13. In the following pages, O2 responds to the specific questions Ofcom raises in the consultation. We look forward to working with Ofcom and other stakeholders in the coming months on this important and timely work. Achieving the right policy approach given the particular circumstances of the UK market is critical.

Question 1. When do you consider it would be timely and efficient for next generation access investment to take place in the UK?

Reducing regulatory uncertainty

14. O2 believes that it is important for Ofcom to now move forward and shape the appropriate regulatory framework for the next generation access environment. By focussing on identifying the appropriate regulatory approach to take, Ofcom can help reduce regulatory uncertainty for the market and investors. Ofcom has a clear role to ensure (as per the underpinning regulatory principles it proposes in the consultation) that it establishes the right regulatory policy and regime – one that does not inhibit efficient and timely investment by the markets and to ensure

¹ Ofcom's Telecoms Strategic Review observed that nga represents an opportunity for a new competitive structure to emerge which would avoid the regulatory battles of the last twenty years [para 8.60] Ofcom TSR Phase 2.

that the timing of its regulatory decision, or inaction, does not result in foreclosure of options for competition in the future (both of which are, we believe, valid underlying principles).

15. The key is for Ofcom to now ensure that the right regulatory approach and regime is in place to promote competition and consumer interests and avoids distorting market incentives for efficient and timely investment. Furthermore, neither Ofcom nor BT should move to foreclose on future options².

Clarity of regulation is required

16. O2 believes that there is a clear need to clarify the regulatory framework for NGA networks in order to give the market the freedom to decide on the efficient time to invest. Ofcom provides a useful assessment as to how the UK environment may differ from other markets. However, in principle, we see no objective reason why Nielsen's law³ (high-end user's connection speed grows by 50% per year) doesn't hold for the UK and hence drive fibre deployment. As such we believe there is a clear need to ensure that the appropriate framework is in place - competitive dynamics and market demand will drive investment. Notwithstanding that uncertainties may still remain at this stage around the timing and manner in which widespread next generation access deployments will be made in the UK, as Ofcom points out in its consultation, some announcements around deployments and trials are nevertheless emerging.

17. The importance of succeeding in creating the right regulatory strategy and mindset for the future is crucial in enabling the sector to deliver the welfare benefits for citizens and consumers that next generation access can promise. O2 believes that a stable, objective and proportionate regulatory environment is essential if the broadband sector is to deliver its full potential.

18. Ofcom's consultation also comes at a time when the regulatory approach to next generation broadband is being widely debated in Europe. Against this backdrop we support Ofcom in its desire to move the UK debate forward and produce a clear and strategic approach to next generation access.

Remedies tailored to next generation challenges and opportunities

19. O2 believes that remedies should be tailored to the character and nature of the market failure identified. Accordingly, like Ofcom, we too do not believe that current generation remedies should simply be rolled over in a mechanistic way and applied to next generation access (see Ofcom's comment at 5.1: "*simply*

² E.g. As Ofcom notes, might opportunities for competition based on passive access (viable duct access/ GPON or wavelength unbundling?) emerge – is so, then these would need to be considered as options for FTTH.

³ <http://www.useit.com/alertbox/980405.html>

rolling forward this current regulation to next generation access might artificially delay investment, or lead to inefficient investment choices.”). Rather, Ofcom needs to assess what potential remedies may be appropriate and, where remedies are demonstrably necessary in relation to next generation access deployment to address market failure, such remedies must be tailored to the specific challenges (and seek to avoid stifling the opportunities) of next generation access deployment. Equally, Ofcom must give due weight to the role existing remedies and BT Undertakings have to play for legacy deployments.

Question 2. Do you agree with the principles outlined for regulating next generation access?

Clear coherent principles

20. O2 welcomes the setting of clear and coherent principles to underpin Ofcom’s regulatory approach. We believe that effort now in setting the right principles will pay off – in the short term by reducing regulatory uncertainty (helpful in circumstances when the precise details of any regulatory remedies are still to be set) and in the longer term by delivering results. Although, as ever, the devil will be in the detail of translating them into practice.
21. Broadly, we think the principles Ofcom proposes will provide solid foundations and we support them. However, we would caution that Ofcom must ensure that we do not get lost in layer upon layer of guiding principles. Furthermore, it is important for there to be clarity as to what practical application of these principles will look like – and how they lead to the endgame. At the moment, application of the principles may be somewhat ambiguous, so it is difficult to surmise what the effect would be when applied for promoting efficient investments in an environment of new generation networks.
22. We believe that it is important for Ofcom to be clear about its framework vision: where we are now, where do we want to get to and how do we get there.

The need to balance flexibility with clarity and certainty of direction

23. Given the level of uncertainty still prevalent, we support Ofcom’s approach of keeping a range of options open until there is greater clarity on the prospects for NGA investment. We think this flexibility can still deliver the necessary clarity. For example, ensuring that the cornerstone of sustainable infrastructure competition is at the heart of the approach. So don’t take decisions now which may foreclose this option for the future.
24. O2 notes that in considering the principles that are designed to shape the regulatory approach to next generation access, Ofcom has chosen to extend existing regulatory principles (innovation, equivalence, contestability) to next

generation networks and to add a further two (regulating risk and regulatory certainty).

25. Generally, we support these principles. However, next generation access networks are a major element of the new paradigm of electronic communications and the challenges in their deployment sharpen the need for a careful regulatory analysis. Indeed, Ofcom itself seems to indicate as much: "...simply rolling forward this current regulation to next generation access might artificially delay investment, or lead to inefficient investment choices".
26. As such, a mechanistic approach is not preferred. Rather we believe Ofcom must take a focussed approach. Identify where any market failure arises, consider if intervention is necessary to correct it (or will the market resolve itself) and if so, what are the proportionate remedies for the particular failure identified. Equally, care needs to be taken to avoid setting a framework which has a distorting effect by interfering with the rewarding of business risk inherent in next generation access investment and generating a lack of confidence in infrastructure competition.
27. We do not believe that risk should be calculated by regulators to establish the appropriate price structure. Market forces are more efficient for establishing prices – and regulatory intervention here is recognised as sub-optimal. Where sustainable competition is present, market led commercial negotiation for NGA networks may well emerge. Although, it will very much depend on the competitive conditions of any identified sub national market, the suitability of a general obligation to grant access under commercial terms or some kind of anchor product could usefully be explored here.
28. O2 believes that a clear, stable, objective and proportionate regulatory environment is essential if the broadband sector is to deliver on its potential and create the foreseen welfare benefits for UK consumers and citizens. We believe Ofcom should seek to:
 - Simplify regulation wherever possible. O2 supports this aspiration and welcomes Ofcom's intent to make its strategic principles clear. However, we believe Ofcom needs to be cautious about complicating regulation even further. In overlaying a further set of "principles" onto those principles and duties already set under the Communications Act and the European Framework, Ofcom needs to avoid making the fundamental underlying principles upon which regulation is built even more complex.
 - Be alive to real, market-driven innovation: Ofcom emphasises the importance of underpinning innovation. This is laudable. A focus on innovation also sets regulatory challenges. Ofcom recognises that it is not the regulator's role to pick winners and losers. The challenge is for Ofcom to reflect the reality of innovation and the private sector's approaches to risk and investment in its

own approach to economic regulation and assessing market power. Industry and the markets understand and calculate into their investment decisions the fact that there will be winners and losers. Ofcom needs to acknowledge this.

- Ensure Policy robustness in light of convergence: Generally, we believe that Ofcom should focus its strategy on addressing market failures. However, we also believe that Ofcom needs to ensure that, having forged its strategic principles to address market failures in the fixed market, it does not seek to force fit that strategy template inappropriately at some point in the future to other markets/market failures without first considering whether its strategy principles are still valid for the issue at hand.
- Have faith in the market and market outcomes: O2 believes that regulation should not decide winners and losers when technology is at stake. Ofcom seems concerned about “efficient technology selection” which is not the role of a regulator. Regulation should not influence the future of the market and some regulatory decisions clearly help to shape the market as can be seen when analysing prevailing technologies in Europe.

29. Overall, O2 believes it is key for Ofcom to create a regulatory environment based on solid regulatory principles that provides the right incentives for all market players to invest in next generation access networks.

30. In light of the particular investment and innovation challenges ahead in the UK, and potential risks associated with these, Ofcom has a clear role to play in the process and O2 suggests that a full review of options be taken before deciding on the policy approach that will be followed.

31. The approach to regulating NGA networks should not automatically be based on past remedies. Just as Ofcom demonstrated its openness to new thinking with the Ofcom/ BT new regulatory settlement, we believe there is opportunity, with the necessary safeguards and transitory periods, for an approach which evolves towards a more investment friendly framework. In some areas, sustainable competition may see negotiated commercial access emerge whilst in other areas, equivalence of inputs may remain key.

The other pieces of the jigsaw

32. Geographic segmentation: O2 notes with interest Ofcom’s proposals to deregulate a substantial part of UK’s wholesale broadband market, having found no SMP at the sub-national level. This proposal is a first in Europe, and represents a clear watershed in terms of deregulation – although, currently limited to a specific market. Whilst we appreciate that the consultation document is about what remedies may be appropriate and that an analysis of the market itself will be undertaken separately, the approach to sub national markets is an important element of Ofcom’s overall strategic intent and must, we believe be

considered in the scenario analysis and further assessment of the remedies proposed.

33. Wider platform competition: Whilst, regulatory focus continues in fixed-line access, we believe that Ofcom is right to maintain a holistic eye on the sector and the potential for alternative competitive technologies (e.g. wireless) over time.
34. BT's Undertakings: We believe that clarity as to the application and role and of BT's Undertakings in a next generation access environment is essential. Ofcom begins to touch on this dimension in Section 8 of the consultation. We believe this area needs further development.
35. The specific nature of the UK experience: Although, Ofcom explains that existing regulation "might" have a deterrent effect on NGA investment, elsewhere (8.22 to 8.26) Ofcom makes clear that it does not believe that the creation of Openreach and the associated undertakings "have" had such an affect in the UK. We appreciate this is an important conclusion for Ofcom to stress for the UK. Although, as we understand it, Ofcom "certainly don't believe that all regulators would need to follow the UK approach to achieve effective competition" (Ed Richards cited by L. Waverman and K. Dasgupta)⁴.

Question 3. How should Ofcom reflect risk in regulated access terms?

Sound underlying principles and be alive to the real risk of regulatory failure

36. O2 shares Ofcom's view that the right regulatory regime needs to be in place to ensure that the incentives for investment are not distorted by regulation.
37. As discussed elsewhere, we believe the principles Ofcom proposes are likely to be solid cornerstones to help achieve this goal. Competition in next generation access may come from a variety of players and platforms – with some more constrained than others (for example, unbundlers). We support Ofcom's intent that the regulatory regime should afford contestability of investment in next generation access, reflect the risk in investment and provide regulatory certainty for all players.

A balanced, forward looking approach

38. O2 believes that Ofcom needs to take a balanced approach. The regime must avoid disincentivising efficient and timely investment for the market – for both new and established players. As such, O2 shares Ofcom's view on the need for establishing a regulatory environment that acts as an incentive to investments

⁴ Mandated Functional Separation: Act in Haste, Repent at Leisure? Leonard Waverman and Kalyan Dasgupta, 5 November 2007

and promotes sustainable competition in the rollout of new generation access networks. We believe that Ofcom's regulatory approach must be to design a framework to address the particular challenges, opportunities and dynamics of next generation access.

39. In relation to passive and active access. We support a stable regulatory environment that promotes the development of competition based on the rollout of infrastructures, insofar as it is viable, and which allows the various players that wish to invest, to compete under equal terms in a NGA environment. This does not rule out the need to maintain competition based on services under those circumstances which, due to market conditions, do not allow the rollout of competing platforms. However, as Ofcom recognise, reliance on active products means that competition is dependent on the access network owner's investment timing - hence why passive access options are desirable.
40. The approach should seek to ensure that the sector is not subject to more distortions/uncertainties than those which are inherent to the business itself and to its innovative dynamics. Therefore we need a stable regulatory framework with the necessary regulatory certainties that provides guarantees for investor incentive and in the rollout of new networks.
41. We believe that the new regulatory framework for next generation should be evolutionary, non-disruptive and be established on the competitive realities of markets and their future prospects. As we explain below, we believe it is important analyse the likely impact of the various regulatory alternatives and consider the objectives of promoting investment, innovation, competition and customer benefits over the long term. We believe careful assessment is crucial to ensure the promotion of a balanced regulatory framework that avoids competitive discontinuity and allows for a return on the investments made under terms of efficiency.

Embrace innovative solutions where appropriate – but test and evaluate them thoroughly

42. O2 believes that anchor product regulation coupled with equivalence of inputs should be explored. On face value, as an approach, it appears an attractive option. However, we believe that more work needs to be done to develop the concept and assess how it might work in practice given various scenarios. We discuss this in greater detail below. As Ofcom itself recognises, an approach based on anchor product regulation is innovative and requires careful definition and clarity (along with the underlying aims of such regulation).
43. In general, O2 agrees with the principles proposed by Ofcom with regard to ensuring the ability of all players to contest the rollout of NGAs, sufficiently reflecting the risk of investments and guaranteeing regulatory certainty, as a means for promoting investments in new generation access networks.

Nevertheless, the analysis made by Ofcom in relation to the application of these principles is somewhat ambiguous, so it is difficult to surmise what the effect would be when it is applied for promoting efficient investments in an environment of new generation networks.

44. Thus, while agreeing with the benefits discussed in the Ofcom consultation document, Ofcom nevertheless needs to avoid allowing ambiguity around the application of the various principles (contestability, reflecting risk and regulatory certainty) to arise. As ever, the devil will be in the detail of application and so we believe a rigorous analysis specifying what they translate to in practice and their possible effect on the market is required. Without this, a set of principles can of course create their own uncertainty for players.
45. As part of assessing the possible regulatory scenarios applicable in an environment of new generation access networks, we believe that Ofcom must consider how the market and competition is likely to evolve based on the framework and remedies proposed in its consultation. Furthermore, how potential remedies will promote investments, innovation, and sustainable competition and deliver customer benefits needs to be assessed.
46. Equally, we believe there needs to be clarity and certainty around the continued application of the BT undertakings and equality principles. We welcome the discussion Ofcom initiates in the consultation document. However, we believe this is an essential dimension which requires further refinement and development.
47. Finding balance in the regulatory regime will be crucial: enabling the regime to be light touch and encourage the market to work where it can to deliver sufficient and sustainable competition whilst elsewhere ensuring that, where necessary, competition is fostered through the right ex ante approaches.

Clarity of definition and boundaries for anchor products

48. O2 acknowledges the difficulties inherent in defining a regulatory framework applicable in a NGA network environment and appreciates the effort being made by Ofcom regarding the introduction of a new “anchor” product concept as a means of guaranteeing sustainable competition.
49. We would suggest that Ofcom does more work to flesh out the details of how this might work – to deliver clarity. The focus considered by Ofcom in defining this new product(s) is very broad and seems to leave the regulator with a wide range of possibilities for intervention, which would go from a scenario of minimum regulatory intervention, close to a regulatory forbearance for NGA networks, to a scenario of exhaustive regulation for wholesale products over NGA networks. In no way would this help to provide regulatory certainty to players.

50. A cost-benefit analysis would seem a sensible check and balance in order to identify the implications of the various proposals.
51. We think the concept of anchor products is worth exploring more – as discussed elsewhere, a suitable framework around such products may offer a real opportunity to deliver a non- disruptive migration and replicability of services provided over new generation networks.

Question 4. Do you agree with the need for both passive and active access remedies to promote competition?

Clarity of objectives – sustainable and contestable competition

52. O2 believes that the UK market is likely to need both passive and active remedies to promote competition.
53. With reference to our earlier point that Ofcom needs to determine what the end game looks like, then the imposition of regulatory remedies should be aimed at promoting the evolution towards a competitive environment in which a sustainable and sufficient level of competition between infrastructures exists. However, as the Consultation document discusses, the outlook for practical passive access solutions to emerge may be limited at the outset (but this is not to discount them for the future – indeed we believe that Ofcom must be careful not to foreclose a particular option – see below). So the existence of competition at the level of services can also be suitable and is a complement to competition in infrastructures (although as we discuss, they carry with them inherent limitations). However, at this stage, we do not believe that, active access is, sufficient for guaranteeing the efficient evolution of infrastructures for the communication networks that will be required in the future.

Clearly evaluate the likely outcomes

54. We refer elsewhere to Ofcom undertaking some scenario analysis. We suggest that as part of this work, Ofcom carefully analyse the extent in which the regulatory remedies that are imposed on operators with significant market power help to promote the rollout of new infrastructures and innovation.
55. As Ofcom recognises, this analysis must consider the differences that may exist in specific geographic areas - sub national, regional or local - and whether the difference are due to the competitive situation or due to the characteristics of the existing infrastructures (for example the availability of ducts may be greater in areas with new construction than in other areas).
56. Whilst the regime is being debated, pre-regulation fibre deployments are of course being made. As Ofcom notes, this brings with it the opportunity to test

new business models and the benefits of new services – as well as raising some specific issues right now in the market. Accordingly, we look forward to Ofcom’s specific (and timely) consultation on ‘new build’ deployments – and we welcome Ofcom’s confirmation that it would expect any current deployments to conform to the requirements of the Ofcom’s subsequently determined “new build” approach.

Passive and active solutions

57. *Access to ducts* - Given that the availability of ducts is a key aspect for enabling operators to rollout new communication networks (as the Ofcom consultation acknowledges, civils can represent up to 70% of the investment to be made) we believe that it is important that full consideration is given to the opportunities access to ducts may afford. We believe greater analysis of the options would be sensible here. Whilst we note that it has been suggested that poor documentation and duct congestion may make access difficult (in some places), we believe that this option should not be discounted and that more consideration should be given as to how this could be made to work (for example, the opportunity to overcome congestion problems using technologies based on ‘soft ducts’). In particular it would be useful to examine the availability of ducts to assess the feasibility of passive solutions, not only those that belong to telecom companies such as BT or the cable operators but also those that belong to other service companies such as sewer systems, or those used for water, electricity or gas supply (although, clearly telecoms ducts may be more naturally suited – in the right place, cheaper and safer to operate etc).
58. Furthermore, in the case of new construction such as, for example, the Ebbsfleet valley, it should be possible to ensure the availability of sufficient ducts for a reasonable level of infrastructure competition.
59. *Unbundling of sub-loops (FTTC deployments)* - As acknowledged by Ofcom, access to sub-loops is a remedy with a fairly limited scope for competition because of the economic and practical co-location challenges for a non-incumbent (unbundling, backhaul, cabinet capex and opex). As such, the opportunity for alternative operators to achieve a sufficient economy of would be restricted to a limited part of the UK. We also note Ofcom’s comment that sub loop unbundling would not be an input into downstream BT products – which raises questions over the likely competitiveness of pricing.
60. Furthermore, solutions based on FTTC are unlikely to be future proofed (as FTTC options would generally need to be superseded at some point by FTTH). Hence such solutions would have a limited time frame (ie. a stepping stone to FTTH). Given that the shorter life of the solution will translate into steeper recovery of costs, this further complicates the possibilities of entry operators in developing viable business models.

61. We note that Ofcom indicates that if there is sufficient interest for industry it proposes that initial work be undertaken to explore how the product could be made more robust. Whilst we do not discount the value of this approach, generally, save for certain limited areas, at this stage we do not foresee that sub loop unbundling offers a realistic or practical access product. Accordingly, competition would rely on other types of remedies.
62. *Unbundling of fibre optic (FTTH deployments)* - O2 acknowledges the difficulties that currently exist for unbundling fibre optic access networks (FTTH) since in the medium term we understand relevant FTTH rollouts will be based on GPON. For the time being, solutions based on unbundling at the splitter or using wavelength at the exchange do not appear viable. Whilst we do not discount that the viability of these options may change in the future (and of course the possibility that it may be some years before there is widespread next generation deployment), for the time being, we believe that alternative access options such as ducts afford greater opportunity for passive access based competition at this stage.
63. *FTTB deployments/ In-building networks* - Ofcom does not explicitly consider FTTB architecture, regulation and access. For completeness and clarity, it would be helpful if Ofcom could explain its approach to any such deployment in the UK.
64. In addition, the consultation does not comment on options in relation to in building networks (other than to record the approach in the French market). Of course, the low overall proportion of multiple occupancy dwellings in the UK may mean that competitive access to in building networks is low on the priority of access challenges to crack. However, we believe that Ofcom does need to consider what framework would be appropriate here.
65. *Migrating from existing regulation* - As Ofcom recognises, some forms of next generation access deployment raise questions as to the future continued availability of existing regulated access products. Whilst Ofcom understandably makes clear that it is a question of “when” rather than “if” existing regulation should be updated, as an investor in LLU, O2 believes that it is imperative that transition is non-disruptive of the competitive gains afforded to date via unbundling and that today’s access inputs are not withdrawn in an inappropriate and disruptive timescale. In addition, whilst LLU access regulation is maintained, it should reflect opportunities (for example, VDSL2 from the exchange) for increasing speed and other technical characteristics.
66. O2 recognises that it is not Ofcom’s place to “guarantee” the investments of LLU players. However, given Ofcom’s previous public statements about its commitments to competition in the LLU space, such players will have a legitimate expectation that Ofcom will give an adequate signal of a change in policy and that LLU players will have adequate time to recoup any investments made up to that point. If LLU players chose to invest past Ofcom’s signal, that would be at their own risk.

67. It is imperative, therefore, that there is transparency in any decision to remove regulated wholesale products, including sufficiently advanced signalling of intent and a well defined migration period for operators and consumers using these products should include measures that enable unbundled services to evolve towards other models such as utilization of other passive type services: (for example ducts), development of alternative networks or use of active type wholesale services.
68. *Backhaul* – As Ofcom recognise, it is imperative that the right backhaul products are encompassed within the framework.

Active access products

69. *Active access* – We believe that remedies based on active type accesses are likely to be an appropriate and necessary complement for passive type remedies. Ensuring fit for purpose products are delivered in a way that provides the necessary replicability and delivers equivalence will be the challenge.
70. The potential for next generation active access to potentially provide greater flexibility is to be welcomed. However, with active access services based on a flexible type of wholesale service with Ethernet type interfaces, a balance needs to be struck between flexibility and cost. The introduction of an overly high degree of flexibility and connection points for active services could give rise to a decrease in the efficiency of the network that would have to be super-dimensioned thus giving rise to an increase in the cost of wholesale services. A suitable balanced approach needs to be taken to provide for flexibility and innovation in an efficient manner avoiding an unsustainable cost base for the market.
71. As mentioned elsewhere (and as Ofcom recognises), whilst active solutions undoubtedly will have a role to play, reliance on active access means that competition goes at the access network operator's pace – i.e. where the incumbent rolls out fibre to the customer. This is different to DSL where copper was pre-existing.
72. The specific selection of certain technical interfaces based on Ethernet (page 58, paragraph 6.57) may still be premature so Ofcom should leave the topic more open.

In summary

73. O2 considers that it is foreseeable that the need may exist for active and passive type access remedies. However at the time their possible implementation is considered, the following should be taken into consideration:
- The remedies should promote the development of competition based on infrastructures.

- The implementation of remedies should consider the differences in competition at a sub-national level (this is of course a matter for market reviews rather than a consultation on remedies).
- Access to ducts may offer important opportunities for the development of competition. A study should be launched in how to develop these opportunities (and not simply considering telecom operators' ducts). Equally, other options need to be considered, for example, in-building networks.
- The transitional conditions that would apply if access to loops is eliminated as the network evolves towards fibre optic should be laid down sufficiently in advance.
- It is reasonable to establish active type access remedies wherever competition is not viable due to the fact that passive type remedies do not exist or wherever there is insufficient competition between operators with infrastructure. The level of flexibility and the number of access points should be sufficient in order to achieve suitable levels of efficiency.

Question 5. Do you consider there to be a role of direct regulatory or public policy intervention to create artificial incentives for earlier investment in next generation access?

Avoid artificial regulatory incentives

74. Generally, for the regulator, creating artificial incentives is not to be encouraged. Baking/ creating creation of artificial incentives via a regulatory regime carries risk of distorting/ getting it wrong. The greater the intervention, the greater the risk of regulatory failure. We believe that, for the regulator, the principle of 'leave it to the market' still stands, underpinned by Ofcom's general principles of encouraging competition at deepest level in network where enduring bottlenecks and SMP arise.

75. Public initiative should be complementary to or in coordination with private initiatives by operators, however, care needs to be taken Public intervention can distort (bury) the incentives for private investment – and lay ground for a public monopoly.

But government should be open to possibilities

76. Having said this, there may be other options that could be considered. For example: Incentives for duct sharing in new build? Incentives for developers to install fit for purpose ducts? Register and mapping of suitable ducts etc?