

Future broadband: policy approach to next generation access

Introductory remarks

1. Connect – the union for professionals in communications is a trade union representing more than 20,000 employees in the information and communications technology industry. Our members work in a managerial, professional and senior, policy-developing capacity in a wide range of companies in an industry which has experienced both major and continual change, with a consequent impact on their prospects and on the type of work they are called on to perform.
2. Connect thus has a strong interest in regulation and in public policy initiatives and is pleased to respond to this most recent consultative initiative by Ofcom. Our sections below refer in specific order to the sections numbered in Ofcom's document.

General, Introduction, Sections 1 and 2

3. We would welcome the establishment of regulatory certainty about next generation access networks ahead of time: it will facilitate the decision for operators as regards whether or not to invest in the new technology in the safe knowledge of the regulatory regime that will apply. At the same time, we need to recognise that this is not such a future-oriented exercise, given the tentative steps to wireline fibre which are already being taken at the Ebbsfleet development and via the Digital Yorkshire project, as well as by Virgin Media as a result of its apparently successful trial of high-speed services and its pronounced intention on the strength of this trial to extend the offer across the network by the end of 2008. It is clear that operators do see the need for investment in high-speed services in the absence of regulatory intervention (and without the regulatory certainty that Ofcom is seeking to establish). It's also a clear sign of the principles under which operators would now, as if from scratch, build a network at the local level.
4. The level of competition in the existing, current generation broadband market, facilitated by the existing regulatory regime that applies, and its encouragement for innovation and

expansion, has certainly helped to establish the vibrant, dynamic market that we already have. However, it is of considerable importance here that the model of competition in current generation broadband is one that is based heavily on price. This has created certain public expectations that may not be conducive to the making of a case for the investment required to build next generation access networks entirely from private-sector sources. It embodies a low willingness to pay amongst consumers, at least initially, and especially when the early evidence is that consumers tend to use next generation access networks for a broadly similar range of activities as current generation ones. Consequently, we believe that it would be wise to pose the question as to whether a competition-oriented model is an appropriate one for the future, given the very different circumstances in which next generation access investment is likely to take place, and we would rather have seen Ofcom starting from first principles here rather than assuming that competition, because it has delivered in the past, is likely to do so in the future too.

5. We want to emphasise that it is clear that the UK needs higher speed broadband access – other countries are investing in NGA developments and, while it's not clear that the UK citizens are yet losing out, there is a clear argument that we need to do so too before this becomes apparent as, in some respects by then it may be too late to catch up. International comparison provides only limited evidence as to how and when things should happen in Britain, but it does provide a clear pointer forwards. It's also clear to us that the key question in an approach geared towards seeing next generation access networks as a commercial proposition is the extent to which those commercial operators who supply such networks may be allowed to profit from them – and that this needs to be sufficient to deliver that investment in the first place.

6. As a trade union, we also feel that employees need to be taken into account in the decisions that Ofcom reaches. If we are truly to benefit as a society from the deployment of next generation access, it is likely to be on the basis that the industry employees charged with the delivery of next generation access in practice are sufficiently confident of their prospects and also of the skills sets that are likely to characterise their future employment. Clarity here will assist in the development of employee support for the development of investment plans as well as in their actual implementation, and we recommend that Ofcom develop an employee focus to its activities in this area.

7. We believe that the principles of the regulation of broadband market that Ofcom has outlined – contestability, innovation and equivalence – continue to be fair, but only up to a point: the level of investment in NGA developments is much higher than that (essentially upgrading) investment which was required to deliver current generation broadband and

certainly the addition of a fourth principle concerning return on investment is very necessary. Here, we mean not just a way to compensate investors for the risks they have taken in building next generation access; we do need to find a way of allowing them to earn a return on that capital investment. Where it can be provided for, certainty is also a decent addition to the regulatory armour.

8. We feel that an NGA network is relatively easy to define: it is not by itself a question of line speeds or the levels of services supported although these are an essential, integral part of it – it's a question of where investment 'beyond copper' needs to take place in the existing architecture, by whatever means, where it is apparent that the current technologies are no longer able to deliver bandwidth requirements on a mass market basis. That is a question of technology, but it's also a question of the development of services which people require and which they are prepared to pay for. We feel that this is something that simply must take place, at least at the level of a definition of what these are likely to be, together with a reasonably informed view of what people are prepared to pay for them, prior to investment in the necessary infrastructure. We would particularly urge Ofcom to take up a role in assisting citizens understand what services might be available, and in helping them to understand the market basis for any additional payments that may well be required, as an essential contributor to the public debate which we believe to be necessary to form the case for next generation access.

Section 3 – Next generation access: the broader context

Consultation question: 'When do you consider that it would be timely and efficient for next generation access to take place in the UK?'

Response: This is likely to be largely a commercial decision and dependent on the commercial realities of wireline operators. There is little evidence that current speeds present a problem while the further mileage that there remains in copper is likely to indicate that the implementation of NGA networks on a widespread scale is unlikely to be achieved early. In this respect, the case for next generation access is, as yet, far from clear. Nevertheless, there is likely to be a commercial imperative based on the plans of other operators where there is competition between network operators. There is also a national interest at stake here too and we believe, as we argue later on, that this supports the case for public intervention in next generation access deployment. If this case is not supported, however, we would agree with the Ofcom conclusion that the commercial decisions of operators need to be kept under review, both in terms of satisfaction with current speeds, innovations requiring higher speeds and the international context, and, most importantly, a definition of the services that will necessitate higher speeds.

9. There does not appear to be a clear case for widespread investment in NGA at the present time in the particular circumstances of the UK, but we are concerned that the UK is falling behind an increasing number of other countries in NGA investments, that further

investments in current copper-based technologies will not provide the national reach for fast broadband that should be the objective for the UK, and that judgements on the suitability of NGA investments might change quite quickly. We believe that the case for relatively early investments in NGA would be enhanced by the enunciation of clear public policy goals from Government, the formulation of a clear and stable regulatory framework from Ofcom, research into the economic and social value of fast broadband, and trials of different typologies and applications.

10. International examples perhaps provide rather limited assistance in determining how Britain should react in the context of the deployment of next generation access networks: circumstances are largely different and, where they are not, it is largely a commercial decision for operators (with a nod to the national economic and commercial interest in having advanced access networks). Nevertheless, we should be aware of (and perhaps most focused on) what is happening elsewhere in Europe as regulatory regimes here are likely to be similar to our own.

11. Examples of public-private partnerships in Europe also likely to be useful because these are also happening in the UK, with demand aggregation helping to build a business case or operators being able to realise savings by 'repeatable propositions' outside of the immediate public sector customer. They are also likely to continue to feature as a driver in the UK alongside competition – at least in urban areas, where it exists – with the cable sector. Nevertheless, such a model is likely to lead to the differential implementation of NGA networks, as with the roll-out of current generation broadband. We should recognise that an approach to deployment based on competition is likely to lead to a sharp widening of the digital divide. It is possible (although it is not particularly desirable, for a number of reasons) that we may see similar consumer-based campaigns (and offers by BT) as marked the roll-out of exchanges to be equipped for current generation broadband, as Ofcom recognises in Section 5 of its consultation document. Conversely, this potentially may play a role in overcoming the digital divide that we feel NGA developments are likely to widen; Ofcom should also recognise that it has a role to play here too in encouraging approaches to demand aggregation which make the case for NGA investment.

12. Ofcom is right that it is hard to predict with reliability what services people might want over NGA networks when they haven't used or seen the service, while the level of satisfaction with existing broadband speeds is likely to be subject to rapid changes (not least in the context of increased contention) and, as such, this is not a useful indicator on which to pin public policy development. Furthermore, as a nation we have an interest in developing consumer services in the abstract of the constraints provided by current technology.

Nevertheless, these things do go hand-in-hand in the sense to which a business case for this investment can be sustained. Where competition between network operators exists, it is likely that this will inject a note of urgency into the responses and plans of other operators ahead of current technologies and services; we are already seeing plans announced for next generation access speeds from some alternative operators and these are likely to prompt a response from competitors. In the meantime, it's not clear that the limits of copper are yet being breached in a way that there is a case for investment but, given the lag between identifying this and the eventual rolling-out of a network, there is likely to be a loss for the nation were we to wait for such breaches to prime that investment.

13. Ofcom is therefore right to keep these issues under continual review, in conjunction with interest groups, but we would want to see Ofcom take a much stronger role in leading the public debate around identifying what services are likely to be available and the likely level of consumer demand, preparedness to pay, etc. Some work has already been done here and Section 7 of the consultation document points to some of the services which may be developed as a result of NGA developments, or which may require them. Clearly these are strongly based on IPTV and HDTV, particularly when delivered on a multi-channel basis, but we would like to see Ofcom take a stronger role in identifying the scope for NGA developments. Certainly Connect will be seeking to do so early in 2008 with a campaign and supporting documents of our own.

14. We need also to recognise the institutional shareholder realities to which wireline operators are subject in the context of further investment – to which many other international operators are not subject (for instance, in the far east but also in Europe too). This is likely to be a significant factor behind differential rates of deployment of NGA developments.

Section 4 – The regulatory challenges

Consultation question: 'Do you agree with the principles outlined for regulating next generation access?'

Response: A very qualified 'yes', with the addition of a principle which recognises the need to allow operators to recoup their investment in rolling-out NGA developments and which reflects the risks involved. This is likely to act as an essential brake on the extent to which 'contestability' at the level of third-party operators can be achieved as a regulatory principle at this stage. We would also like to see Ofcom adopt a policy on how it will deal with the digital divide, which we see as not only inevitable under a competition-based approach but which is also likely to be much wider than currently.

15. It's clear that regulatory policy must not inhibit investment nor act so as to foreclose competition in the future, and that it should be consistent, clear and transparent. Ofcom is

right to recognise that the first new significant investment in original network access, as opposed to investment in upgrades, needs to be subject to fresh consideration and to recognise the need both to facilitate as well as to reward investment. The need to encourage competitive access to networks must not take place on terms that jeopardise that network investment being made. Meanwhile, it is certainly possible to see such an investment as encouraging a move to a return to first principles.

16. The model of functional separation within BT no doubt continues to be the right one, with Openreach operating on the basis of equivalence for wholesale access but allowed to do so on a basis that recognises its need not just to recoup costs but to make a return for its parent. Ofcom needs to engage in detailed consultation with BT as a company over the dimensions of that return if BT is able to make the case to its shareholders that such increased levels of investment by Openreach, on top of what has been made in the next generation network in which BT is currently investing, are required. Demonstrating what returns can be expected is likely to play a significant role in that: investment is unlikely to happen, in a competitive scenario, unless returns can be predicted which fall within the notion of the level of risk acceptable to a commercial company.

17. Given that we are in a pre-investment period, we would certainly agree that regulatory policy should keep its range of options for promoting competition open in the meantime, pending further consultation with the main industry players and likely investors.

18. In the context of the continuation of the model of functional separation in an NGA network environment, the Undertakings provided by BT continue to be relevant and their observance needs to be maintained. As we go on to explain below, functional separation has a strong role to play in delivering high quality next generation access in the context of the likely limited ability of other operators to have sufficient scale to mount serious investment campaigns of their own, regardless of the extent to which this is desirable from an environmental perspective.

19. It would be unsurprising were there not to be a digital divide arising as a result of a differential investment in wireline NGA developments. After all, cable, one of the envisaged drivers for competition in NGA, has (left to itself) only just passed half UK homes and the prospects for this improving substantially seem remote. Clearly, for the cable industry, half of UK homes are, for want of a better word, 'uneconomic' as regards a roll-out of the existing cable network. It's likely that these are predominantly in rural areas – certainly they are away from major conurbations – and it's likely that at least a similar percentage of homes are also 'uneconomic' as regards being a priority case for a roll-out of NGA developments (probably, it is much higher).

20. So, we feel that NGA networks will almost certainly increase the digital divide. At the same time, it is a rather insufficient response to say that it is too early to deal with it – this is undoubtedly true in the sense of the practical implementation of any such plan, but Ofcom does need to have a specific policy in place for dealing with it in the likely event that it does occur. This will allow it to be proactive in achieving its principal duty of securing the availability ‘throughout the UK’ of a wide range of electronic communications services; if it does not, this is likely to remain merely an aspiration. If there is a social and economic welfare benefit to current generation broadband services, as Ofcom clearly believes, this is already taking place on an unequal basis and this inequality can only increase unless Ofcom takes (and then implements) a stance on which policy options it favours. This is also a key part of the regulatory environment on which Ofcom is otherwise seeking to provide certainty and needs to be subject to the same consideration.

21. It is clear that some locations (Yorkshire, Scotland) are already taking initiatives here to ensure they will not be left behind. Ofcom needs to encourage such initiatives, as well as to identify what it will do for those areas for which it is clear that NGA developments are unlikely to be commercially viable. We understand Ofcom’s reluctance to identify the areas likely to be next generation ‘broadband not-spots’, even on a percentage basis – but it is not necessary to do so to realise that having a plan in place to deal with the situation in general is likely, as we have pointed out above, to be required. In any case, clear and early consultation with the wireline operators likely to be rolling out NGA developments, as well as with local authorities in a position to assist with demand aggregation, will also be necessary. Consequently, we would like to see Ofcom adopt a proactive policy setting out what it will do to overcome the digital divide that is likely to result from NGA deployment.

Section 5 – Securing investment in next generation access

Consultation question: ‘How should Ofcom reflect risk in regulated access terms?’

Response: This needs to be the result of continued and detailed discussion with operators in a position to make investments as these become nearer to being made on a mass basis, and with other interested parties. We do not feel that the various suggestions of the range of options open to commercial organisations to ‘de-risk’ investment have, in sum, much to commend themselves in the instant case. We feel that a model based on upstream prices being set by the asset owner is the most appropriate one at this stage.

22. We are less convinced of the powers of competition to drive investment in NGA developments. This is certainly true up to a point and, as we have already said, we have to recognise that cable has, despite a legacy of twenty years of network construction, still only just passed a majority of homes while the prospects for networks to be extended outside the

current core are very slim. So, competition will drive investment in urban areas, but not rural/smaller ones – and, even where it will operate, it is likely to do so in such a way as to widen the digital divide.

23. In terms of the extent to which competition between service providers may spur investment in next generation networks, we have to recognise that functional separation gives BT, as a service provider also, a role in pressing for expanded capacities. We feel that this section of the consultation document lacks recognition of the essential point that, in the scenario provided by functional separation, the network owner is Openreach, owned by BT but divided from it as a whole by the particular Undertakings provided to Ofcom. In this respect, Openreach, lacking a retail operation of its own, has little interest in not developing a comprehensive wholesale product where it has the necessary investment resource to do so: this is more or less its *raison d'être*. Clearly, such a product will have to be launched on the basis of the equivalence that underpins the functional separation commitments which we have pointed out above need to be maintained.

24. We would agree – as we have already pointed out in this response – that competition between service providers may spur investment by wireline owners where those services can be identified and are considered to be economically supportable and, in this context, we have no reason to suspect that Openreach, as the largest wireline 'owner', would block investment on grounds of denying rivals the opportunity to do so. BT Retail, as a service provider alongside many others, will act with the other providers as a spur to Openreach to invest in good time in a timeframe which matches the timetable for the commercial launches of their own products where these require an expanded capacity.

25. Wireline operators like Openreach will, in conjunction with service providers and their own ability to source investment capital, determine the most appropriate model for NGA network investment. There is no need for Ofcom to intervene here unless it becomes clear that such conversations are not taking place.

26. Ofcom certainly needs to signal carefully that it will allow a higher return on investment than is currently provided for within its regulatory models based on cost, and that these should assume some element of risk. However, if it is unable to guarantee that such a regime will be continued in the long-term, on the grounds that one market review cannot bind a successor, then the implication is that there is no regulatory certainty for network operators beyond the life of that one market review. On top of all the uncertainty surrounding the investment in the first place, this, in turn, is likely to act as a major deterrent to operator-investors. Given that it is inconceivable that investment returns can be sufficiently recouped within the life of one market review, and that a much more long-term view of returns will be

required, Ofcom will need to review the impact of its market reviews on how operator-investors will be allowed to recoup their network investment. It certainly seems likely that a period for the investment to earn returns will need to stretch across several market reviews. We don't believe that this needs to present a problem in theory, in the context of functional separation, but if it is a problem within the European Framework, this is an issue that Ofcom will have to tackle in conjunction with its fellow European regulators.

27. The model of upstream prices being set by the asset owner has most to commend itself, provided that it takes place on the basis of equivalence. This means that prices are set by those most able to judge what the market can stand, thus removing the onerous nature of such a requirement from Ofcom, while helping to deliver Ofcom's goal for investment to be made in a timely and efficient way. Given that margins are most likely to be improved in a wholesale access offering by increased traffic, we feel that such a model is, essentially, self-policing in terms of its ability otherwise to restrict or inhibit competition between service providers.

28. We regard that Ofcom's proposal for anchor product pricing suffers from many internal contradictions and does not present a viable way forward. Ofcom presents as one of the objectives of its pricing regime on next generation access, in the context of establishing whether anchor product pricing is a viable alternative, that no consumer should be worse off either now or in the future as a result of the introduction of next generation access. We do not think that it is not possible to have such an objective in principle: should NGA developments deliver service improvements then this should be reflected in the prices that consumers are charged above and beyond what they pay for the particular service they are using. It is unrealistic to expect service providers to absorb such costs; neither is it desirable that the costs are bundled together in the price of the service being used, which may potentially lead to inefficiencies. We are also concerned that defining the anchor product presents too many practical problems, increases inflexibility and runs the risk of increasing uncertainty when Ofcom is seeking as a specific aim of the consultation to minimise this so as to encourage investment. In the latter context, given that anchor product pricing has not been used elsewhere, we do not feel that this is an appropriate point in which to experiment with its use.

Section 6 – Promoting competition in next generation access

Consultation question: ‘Do you agree with the need for both passive and active access remedies to promote competition?’

Response: It is hard to argue that competition should be restricted to one form or the other; as a principle, competition should take place wherever operators want to offer alternative products. We do not see that the passive remedy of sub-loop unbundling, as outlined in the consultation document, has much to commend it, but we would see a future for active access remedies based on the offer of wholesale products to correct any market failures that may emerge. Nevertheless, we would like to point out that competition on the basis of alternative infrastructures is likely to be inefficient and may also, if the example of the cable industry is anything to go by, carry adverse environmental implications.

29. Competition is likely to deliver the same benefits that it already has for current generation broadband where a wholesale access product is designed and offered on an equivalent basis. We do not think that too much should be made of the potential for a network owner to design a product that meets the needs of its own downstream product supplier at the expense of alternative suppliers; such a view belongs to a different era of telecoms regulation and is unlikely to reflect the practical realities which apply in the post-functional separation world. Nevertheless, it is clearly right that full competition is allowed to take place between product suppliers, while the offer of a simple wholesale access product should serve the purpose of building competition. Given our earlier comment about the margins for the network operator stemming from traffic, we believe that this will be the case although there is clearly a role for Ofcom in monitoring continuing developments here.

30. We believe that there are policy issues concerning the efficiency of an investment scenario based on a number of alternative suppliers offering their own fibre networks to end consumers. Furthermore, there are environmental implications (not least in terms of carbon, but not limited to carbon alone) of them doing so which are concerned not only with the production and deployment of under-utilised (or even unlit) capacity, but also with the sheer physical interruptions of installing alternative networks. This was certainly the case with the development of the cable industry and there is an argument that says, in a situation where policy is anyway likely to see a widening of the digital divide, that a multiplicity of fibre provision to well catered-for consumers, effectively at the expense of a number of other, essentially starved consumers, is not an effective way to meet the aim of a provision which operates ‘throughout the UK’. A greater reliance on planning rather than on the market would be helpful here. Furthermore, there may very well be a significant practical problem regarding access to ducts which, in many existing cases (as opposed to new build developments), may not provide sufficient physical space to allow access to the desired range of competitors.

31. The same arguments inevitably apply to the establishment of alternative backhaul networks: we can see a competitive rationale for it – but not an economic one. Here, our preference would be for alternative suppliers to lease wholesale lines on an equivalent basis from the wireline operator.

32. We believe, as we have just pointed out, that Ofcom is right to point to the likely variable scope for access to ducts and that, in particular, many older ducts are unlikely physically to be able to offer decent potential for capacity addition. Ofcom argues that physically limited ducts are likely to offer potential problem areas concerning logistics and work management issues (certainly in the case of establishing priority access); we believe that Ofcom should recognise that there are health and safety at work issues which need to be specifically taken into account here too.

33. Given the benefits brought to competition by local loop unbundling in current generation broadband in general, it is hard to argue that a similar scenario should not be developed for fibre to the cabinet NGA deployments: there is a natural tendency to assume that the remedy can be extended smoothly from one application to another. Nevertheless, we feel that the case for sub-loop unbundling needs a significant amount of further work before it can be proposed as a likely remedy to any market failures. Ofcom recognises in its consultation document that the proportion of the market that can support sustainable competition may be lower than is currently the case and that consumers may even then end up without a choice of provider. At the same time, the sheer magnitude of the problems caused by unbundling so many street cabinets is likely to render such a process impossible for most alternative operators except in narrowly-focused areas. In this uncertain scenario, the argument for sub-loop unbundling is lost completely. More work needs to be done here before the unbundling of sub-loops can even be identified as a potential remedy for any eventual market failures: a remedy that is suspected will not work in practice is not a remedy at all. And indeed, we suspect that a case for it is unlikely to be made out at all.

34. An active line access product would, we feel, get around many of these problems while also side-stepping the issues caused by having alternative operators invest in competing networks. There are potential problems which may appear, as Ofcom points out, but we feel that these will be more or less eliminated by sensible discussions between service providers and network owners, as well as by the practical rationale that the wireline operator needs to increase traffic as a means of increasing margins. We consider that this will increase the tendency to offer a high-quality product. In our view, were Ofcom to be considering a choice between the two at this stage, an active line access product should be the primary choice of remedy and that unbundling should be very much a fall-back, at least until it is clearer as

regards its impact on competition. The practical implementation of Openreach's fibre to the home build at Ebbsfleet, where Ofcom considers that viable competition would come from an active line access product, confirms us in our view that this is the most appropriate course of action in general, both for fibre to the home and for fibre to the cabinet applications.

35. In general, the Ebbsfleet development provides interesting scope for the testing of approaches and clearly this offers the potential for Ofcom to take careful note of events there in terms of informing its planning for NGA. The approach of both Openreach and Ofcom itself to using Ebbsfleet as a trial, as detailed in Section 9 of the consultation document, is to be welcomed although we note that some of the regulatory approaches that apply are to be the subject of a separate consultation and that what has been permitted in the Ebbsfleet development may not be permitted elsewhere.

Section 7 – The case for direct intervention in next generation access investment

Consultation question: 'Do you consider there to be a role for direct regulatory or public policy intervention to create artificial incentives for earlier investment in next generation access?'

Response: We do not see such a role, at least not when the debate about public support for NGA developments is couched in such specific terms as the creation of artificial incentives for earlier investment. This is patently an unattractive option: the creation of artificial incentives is likely to be economically inefficient and we do not see that it is a worthwhile use of public money simply in having something built earlier (and then, presumably, subsequently operated entirely in line with commercial interests), especially when the implication is that such investment would occur eventually anyway.

However, we do see a role for public money in the broader question which we feel needs to be raised. If we are as a nation to have a next generation access network, reaching throughout the UK, we think there is considerable merit in debating whether such a network should be publicly owned. We think that this is likely to resolve many of the problems outlined in Ofcom's consultation and which we have mentioned above – and, at the very least, the scope for public intervention on this scale is a debate worth having openly.

36. Ofcom focuses its consultation here on whether the likely later deployment of NGA developments in the UK provides a case for national intervention (i.e. in order to bring about earlier deployments). We have seen already that local authorities are starting to band together to articulate a case for investment in advance of the timetable for investment as envisaged by network operators. This is one aspect of national intervention – but there are others. As we have pointed out above, there are several aspects of concern surrounding NGA developments which leads us to consider it worthwhile opening a debate as to whether there is a case for a publicly-supported development of an NGA network in general. Amongst others, these include:

- the environmental implications
- the likely lack of competition between operators
- a likely widening of the digital divide
- industry-leader benefits in possessing early expertise in software development and hardware implementation and deployment
- the lack of symmetry between the most likely users of next generation access networks (residential consumers) and the most likely beneficiaries in terms of economic value (SMEs).

37. Furthermore, Ofcom's own principle of 'maximising the potential for innovation' seems to us also to point towards a case for having a publicly-supported, nationally-owned, NGA network.

38. It has also been pointed out that the mooted £15bn for an NGA network compares favourably with the £16bn likely to be spent on Crossrail and, whereas the latter project benefits only London and the south-east, a NGA network operating throughout the UK clearly brings benefit to the whole nation. We might also raise as comparison the likely cost of the London Olympics in 2012 which, again, will benefit the London area (although the likely eventual costs here are contentious). There are other parallels for such a network investment including, for example, the railways. Given the scale of the investment, if implemented in full across the nation, there is a strong argument for seeing this as a completely new network in contrast to the existing network in which the original taxpayer investment represents a sunk cost.

39. We also believe that the economic and social benefits to the nation in having the network may well outweigh the benefits to a commercial provider in doing so (as evidenced, for example, by the tentative steps now being taken by operators being quite substantially behind what some local authorities desire). Furthermore, we would agree that many of the benefits of having a nation-wide network, in terms of social inclusion and social development, would not be taken into account in any private sector cost-benefit analysis and might well be sufficient to tip the balance in favour of investment when a private sector-based analysis alone might conclude it was not worthwhile. These sorts of externality, we believe, change radically the arguments behind a continued reliance on the market to deliver efficient and timely investment. Ofcom see these as potentially justifying a public case for regulatory or public intervention so as to achieve an earlier infrastructure build, whereas we see them in contrast as justifying a case for broader, public ownership of the network. There is, in our view, thus a clear argument (a) that the network would not otherwise be built

without public support (or, at least, not on a nation-wide basis) and (b) that this therefore implies that the nation should own the network. We believe that, together, these both make out and justify a clear case, in principle, for departing from Ofcom's market-based approach.

40. This is, of course, speculative to some extent as we do not have a public cost-benefit analysis of the social benefits of next generation access. We should recognise that the likely predominant rationale for such networks lying in private entertainment points towards the development of NGA networks being a commercial proposition – but there are other, social benefits too and, in any case, the usage to which such networks are put perhaps ought not to have a determining influence on the debate as to whether the public sector should or should not get involved in building them. The extent to which consumers understand they have to pay both for access as well as for services over NGA networks, as well as the domination of a model of competition in current generation broadband based on price, also has a contribution to make to this debate. We would like to see such a public cost-benefit analysis, which should take account of both the economic and the social benefits of NGA networks, produced as a matter of priority to help inform the debate further in this area. Many of the factors which need to be taken into account here are already set out in Section 7 which, at least to some extent, provides a recognisable framework within which such a cost-benefit analysis may be conducted.

41. Were such a public cost-benefit analysis to support the case for a nationally-supported network, how might this operate in practice? Further work clearly needs to be done here but, in outline, we would see such a move in the following terms: a network reaching throughout the UK is designed in conjunction with existing operators on the basis of full consensus, for instance as to technology selection, the regulatory regime and the wholesale access products that will be required; built according to the outcome of a public tender (or, more likely, a series of tenders); and then operated by a single operator on the basis of a regularly reviewed contract and in line with established regulatory principles. Service providers are free to connect with the network on the basis of their own models and service offers and, of course, on the basis of equivalence, while it would be relatively easy to take account of the points of interconnection between the next generation access network and those of other network operators (including cable and wireless) necessary to deliver services.

42. This sort of approach based on the full involvement of commercial operators would, we feel, overcome some of the difficulties implicit in the potential for economic inefficiencies surrounding regulatory or public policy-sourced involvement in deciding the terms of investment. At the same time, it relieves Ofcom of some of the burdens of determining how commercial operators might be allowed to earn a return on their investments and of the

period over which they may be allowed to do so. It should also remove the question of allowing higher prices to operate in the first instance, which would inhibit the take-up of a commercially-provided access network and which, by themselves, distort the market.

43. Especially in the light of the absence of a full economic and social cost-benefit analysis, we regard Ofcom's conclusion here that it would be 'inappropriate to have regulatory or public policy designed to accelerate next generation access deployment in the UK at this stage in order to deliver social or economic value' as being a little premature. Even then, it embodies an answer which does little more than hint at the broader question which we feel, in the light of Ofcom's own analysis of the range of factors concerning investment in next generation access networks, really ought to be asked. We believe that there is a need for a public debate over the terms of next generation access deployment with regard to whether such a network might be more beneficially deployed and operated as a publicly-owned network.

44. We would argue that such a network should, in this sense, be publicly-owned given the mismatches between a commercial perspective on the project and the economic and social benefits which would flow from it. We would also see public ownership as being instrumental to resolving many of the competition-based doubts which currently exist concerning next generation access network roll-out and, certainly, over some of the environmental issues which arise from an approach to network build which is wholly oriented around competition. Ofcom itself recognises in Section 8 that it is established in Europe that fixed telecoms is a natural monopoly upstream but has the potential to be competitive downstream. Nothing we have suggested here contravenes such an approach and, furthermore, we believe that the proposal is fully in tune with Ofcom's principles and aims as regards competition at this downstream level.

45. Nevertheless, we feel that this is a debate that we need to have as a society and one with which we would like to see Ofcom engage. This is so particularly in the interim period of Ofcom's existing conclusion in this area – that it needs carefully and closely to monitor the rate of pace of, and lessons arising from, international developments and to agree a way forward as to the most appropriate approach across a wide range of stakeholders.