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Chapter 1 Introduction

The Fibre to the Home Council (FTTH Council) has been calling for greater clarification from the Commission regarding State Aid for some time and warmly welcomes the publication of the Commission's State Aid guidelines¹ for consultation. Public financing will inevitably play an important role in the deployment of significant infrastructure based projects such as those required in the transition to very high speed networks. The need for State support is evident particularly where population densities and costs are likely to make an economic return uncertain.

While the FTTH Council firmly believes that normal market forces and in particular competitive forces should deliver fibre to the home for the mass market, certain areas will not commercially support fibre to the home without some form of State intervention. The FTTH Council further notes that the problem of NGA provision may not be limited to the access network and that State support in white and certain grey areas to strengthen the necessary backhaul capacity may be required. Social and economic considerations justify the use of State funds to finance fibre to the home developments in such circumstances but it is important that such financing does not create uncertainty in the minds of investors about the extent to which they could find themselves competing with State financed networks.

There is a growing appreciation of the important role that very high capacity fibre to the home network networks will play in the future but there is also a concern that such networks are being deployed more slowly in Europe than should be the case. The FTTH Council has considerable experience in monitoring FTTH developments across the EU and beyond. While FTTH is at a very early stage of development in the EU, we can see that most of today's FTTH investments have been made by new entrant operators, local authorities and other regional initiatives². While there is a body of opinion that believes that only when incumbent operators commit to making FTTH investments will we see a mass market deployment of fibre in Europe, the FTTH Council does not subscribe to this view and believes that under the right conditions, any player could take the initiative and make a large scale fibre deployment. Already there are indications in some Member States that this can be the case.

The role of the State is particularly important in driving the pace of fibre deployment, either as the party who makes the essential underlying infrastructure investments directly or as a partner with private investors promoting shared networks for all access seekers. The State may also act more indirectly by acting as a facilitator who can ensure funding³ for projects is available or make the passive infrastructure elements which are the basic building blocks available on terms which could allow operators to quickly deploy their networks.

Not only do market operators need to understand the role that State aid may play as well as the limits of such State interventions but State bodies themselves need to understand the role that they can legitimately play. The role of the State is identified as being first to ensure that there is sufficient access to broadband in all its forms and second to facilitate the acceleration

¹ Community Guidelines for the application of State aid rules in relation to rapid deployment of broadband networks

² http://www.ftthcouncil.eu/documents/studies/Market_Data-December_2008.pdf

³ See for example a Portuguese initiative providing €800 million in available finance for fibre roll-out: <http://www.planotecnologico.pt/NewsPage.aspx?idCat=33&idMasterCat=30&idLang=2&idContent=2350&idLayout=6&site=technological-plan>

of NGA deployment. The second of these roles can play an important role in stimulating the knowledge based economy and in that sense, the State is rightly seen as an important actor in ensuring Europe is positioned to take advantage of technological advances (such as cloud computing or home working etc.) to the maximum extent possible in a bid to lead Europe out of recession. Not only are public bodies considering their role in ensuring that the digital divide is bridged but they are also trying to understand how they can accelerate the deployments of fibre networks in the cities and commercial centres of their economies as towns, regions and cities compete with each other.

While the mechanism for delivering very high speed networks should be left to the market, the FTTH Council believes that the Commission is correct to place significant emphasis on fibre as the most prominent future solution. The FTTH Council fully endorses the principle of technological neutrality and believes that it is appropriate that market forces determine the winning technology, however the trends in terms of broadband capacity point to fibre as the only technology capable of delivering the necessary bandwidth in the future.

The publication of the State Aid Guidelines is therefore a welcome and necessary clarification of what the rules surrounding investments by the State are. Nevertheless, there are a number of aspects which the Council would like to see addressed or where greater clarification is needed. We touch on these points in the following sections.

Chapter 2. The need for appropriate public interventions

Basic principles for public interventions.

A basic principle for public interventions is that public agencies should only intervene in markets where there is a clear case of market failure. Market failure where a sub-optimal market equilibrium is reached can take many forms, but one of the most important forms is an externality that cannot be internalised by the market.

In economics, an externality of an economic transaction is an impact on a party that is not directly involved in the transaction. In such a case, prices do not reflect the full costs or benefits in production or consumption of a product or service. Producers and consumers in a market may either not bear all of the costs or not reap all of the benefits of the economic activity. Probably the best known network externality is the case of the standard telephone where the more people own telephones, the more valuable the telephone is to each owner. Over time, positive network effects can create a bandwagon effect as the network becomes more valuable and more people join, in a positive feedback loop.

In a competitive market, the existence of externalities would cause either too much or too little of the good to be produced or consumed in terms of overall costs and benefits to society. If there exist external costs such as pollution, the good will be overproduced by a competitive market, as the producer does not take into account the external costs when producing the good. If there are external benefits, such as in areas of education or public safety, too little of the good would be produced by private markets as producers and buyers do not take into account the external benefits to others. Here, overall cost and benefit to society is defined as the sum of the economic benefits and costs for all parties involved.

Many of the potential uses of broadband such as cloud computing (which could have big economic impacts depending on the number of participants), home working, tele-medicine and -care, have significant impacts with them which can be classified as positive externalities, such as relief of traffic congestion allowing other commuters to save time, impact on the environment etc. It should be stressed that the very high bandwidths available under FTTH scenarios are likely to be used in a very large number of ways which may or may not be conceivable today.

With such uses, the commitment of significant State resources may be even more justified than would otherwise be the case. However, it still carries the risk of crowding out other private investments which might otherwise be made. It could effectively discourage investment by market players or could simply lead to inefficient choices of technology or poor delivery solutions if the form of financing is not chosen carefully. Whatever solutions are being proposed must be set in a way which is as future proof as possible and does not seek to predict outcome.

Public authorities must therefore rely on market forces to the greatest extent possible as with demand and supply uncertainties, a well functioning market ought to determine the optimum solutions. The Government needs to determine the extent to which competition is possible and the likely geographic scope of that competition as well as the ways that the competition that

exists can be extended. It should also ensure and facilitate competition to the greatest extent possible and seek to lower barriers to entry wherever possible.

The use of State Aid must therefore be carefully directed so as to impact the market dynamic in a way which supports competition and which supports investments while minimising the impact on the market driven outcomes. The FTTH Council sees a potential trap that public authorities could ultimately see markets as complimenting State Aid failures rather than as seeing State Aid as a compliment to market failures!

The FTTH Council is therefore glad to see a continued focus on some basic principles in the State Aid draft. On a forward looking perspective, by placing the emphasis on lowering fundamental entry barriers in a way that is neutral about the form of entry that is likely to take place the market dynamic is facilitated with minimal distortion on the form of that dynamic.

In addition, this kind of direction gives clarity to market players that investments in publically funded competing networks should be minimised whilst the cost of deployment will be lowered. A clear message such as this is likely to stimulate investments in fibre networks.

Chapter 3. Getting the Intervention correct

The importance of competition and preserving the competitive dynamic

The evidence from traditional broadband markets demonstrates that the presence of competitive providers has a very desirable effect on take-up and on delivery conditions.

A key characteristic of today's broadband markets is the variation in supply mechanism and the drivers of consumer take-up across Europe. Experience has shown that take up has been fastest where there is competition between different delivery platforms (or at least there is the threat of such competition). This occurs typically in densely populated areas where cable is deployed and DSL is relatively cheap, so that there is a double effect of price competition on access and ease of supply. Where inter-modal competition between platforms is not effective, the next best option for competition is LLU, since LLU allows entrants to bypass the incumbent network apart from the copper loop and thus create truly differentiated competitive offerings. Consistent with the 'ladder of investment'⁴ hypothesis, regulators in Europe have made intermediate access products available to facilitate entry. In particular, forms of resale and bitstream have tended to have a more limited impact on the competitive dynamic than other forms of access competition.

The ladder of investment hypotheses encourages regulators to use variations in access pricing to elicit entry at various levels of the value chain, such that new entrants can decide on their investment in a step-by-step way, and can establish a customer base (critical mass) before they go to the next step of deploying their own infrastructure. Indeed it is foreseen that entrants will also deploy physical infrastructures in a step by step manner. Thus new entrant operators might enter the market by re-selling the incumbent's DSL product, but, having built up a base of customers, might then wish to transfer them to LLU, which should offer a higher margin (since the access seeker uses fewer components of the incumbent's network) and allow greater service innovation.

This mechanism has been used very successfully in countries such as France where there is a cable operator with very limited coverage. Successful LLU deployment is tantamount to creating a competing network since operators compete across almost the entire value chain. Competition based on bitstream or resale has contributed to a weaker form of competition

In those areas where infrastructure based competition is feasible, such regulatory interventions have as their long-term objective the emergence of self-sustaining effective competition and the ultimate withdrawal of regulatory obligations.

The risks of state aid dependency

However, significant investments by publicly financed agencies have the potential to distort such a competitive evolution if it is not carried out under a clear and transparent framework. While the activities of public bodies are bound by obligation not to use public funds to crowd out private investments, such obligations will inevitably create doubt in the minds of private investors unless those obligations are clearly specified.

⁴ Cave, M. "The Economics of Wholesale Broadband Access", MMR-Beilage 10/2003 (MultiMedia und Recht Vol. 6, 16 Oct. 2003), pp. 15

As currently drafted, the Commission guidance deals with two main themes, areas where NGA won't be delivered absent State interventions and areas where it may be delivered but where delivery may be accelerated. Two types of digital divide can be identified, the first exists between classic PSTN services and basic broadband and the second between basic broadband and NGA based broadband.

The Commission rightly identifies the need to bridge both divides simultaneously and the FTTH Council welcomes the comment that the presence of basic broadband (as defined in paragraph 48) should not be included in the assessment of whether an area is white, grey or black. The FTTH Council supports very strongly the Commission view that the presence of DSL deployments should not prejudice in any way the assessment of whether NGA is likely to be deployed or not in a given area.

The FTTH Council believe that plans by operators to deploy NGA within 5 years as suggested in paragraphs 64 and 65 ought to be substantiated to some extent.

Clearly in the case of accelerated deployments, market actors can have legitimate concerns. The FTTH Council believes that State subsidies cannot be recurring with periodic, iterative investments as particular technologies become outdated or insufficient to meet demand and need to be upgraded further. Therefore the FTTH Council believes that the Commission must warn against State investments which are likely to become outdated relatively quickly. The Commission needs to stress the fact that fibre end-to-end solutions are a long term investment capable of meeting the needs of end user over the long term. Large scale investments made in alternative solutions run the risk of quickly becoming stranded and leaving behind the very problems they were meant to address such as digital divide.

The need for to avoid a broad brush approach to technological neutrality

The FTTH Council is concerned that the Commission is taking an overly broad view of what constitutes an NGA network which warrants State Aid. All indications regarding patterns of use by broadband users indicates that in the near future only end-to-end fibre based solutions will be capable of meeting the needs of end users⁵.

- European broadband speeds are rising at 50% + per annum.
- High end broadband usage per home is growing at 20% per annum.
- FTTH broadband homes drive 3x more traffic than ADSL homes in Europe.

Today's usage patterns clearly demonstrate that end-to-end fibre solutions will be needed to meet European broadband requirements in the near future. Investments in potential transition technologies have the potential to raise costs unnecessarily and to delay the ultimate transition to an NGA based network. The FTTH Council therefore welcomes the emphasis being placed on fibre in section 3, 'State aid for NGA networks'. In particular, the recognition that basic DSL based broadband networks should not be included in the white, grey black assessment is welcomed.

This position should not be misinterpreted as an attack on technological neutrality. The FTTH Council fully endorses the principle of technological neutrality and believes that it is appropriate that free market forces determine the winning technology. However, under any reasonable view of the trends in terms of broadband capacity needs, a threshold will soon be

⁵ See research undertaken by Ventura Team LLP for the FTTH Council.

passed where the only technology capable of delivering the necessary bandwidth is fibre. Within an FTTH context there are any number of solutions, technologies and deployment models which will all vie with each other in the market. Any signals or measures which would delay or impede the momentum to a FTTH solution should be resisted in our view both as being potentially wasteful of public funds and damaging to the market dynamic. Therefore the emphasis in the current document which is placed on financing the basic infrastructure of future networks, be that civil infrastructures or other elements, assumed to be mainly passive infrastructure, is entirely appropriate in the view of the FTTH Council.

The Council believe that the Commission needs to be clearer on the dangers of investing public funds in time-limited infrastructures which are unlikely to be adequate to meet end user needs in the medium term.

Specifically, at paragraph 66 (and again at 74) the Commission proposes to use ‘best economic offer’ for future looking NGA assessments much as it has in the past. The FTTH Council believes that the Commission should modify its “best economic offer” criteria to include a quality assessment since a pure lowest bid approach would not lead to the choice of the most appropriate future proof technology.

One final area of concern for the FTTH Council is that there seems an underlying presumption in this consultation document that the necessary and appropriate backhaul capacity will exist or will be put in place commercially. The FTTH Council believes that in white areas and in certain grey areas that this may not be the case even though the presence of such backhaul capacity could prove to be a key enabler of NGA deployment. Today’s backhaul capacity was built for existing traffic patterns which may change in the future and which may be materially different to what is required.

The FTTH Council believes that the public sector can act as a vital catalyst to accelerate the roll out of infrastructure by lowering entry barriers and facilitating competition. This can be developed based on access to passive infrastructures and the ability to pursue independent deployment strategies. Investments in passive infrastructures lower entry barriers for all operators and provides for any operator to move first which in turn may create its own dynamic. Even if the first operator to deploy in a given area does not ultimately engage in a large scale deployment, the real possibility that it could happen may, of itself, stimulate other operators to accelerate their investments in NGA. The FTTH Council believes that this can be the best mechanism for ensuring mass market deployment in an appropriate and timely manner.

Chapter 4 Future State Aid needs and the need to support competition

While the FTTH Council firmly believes that the only technology capable of delivering the necessary bandwidth is fibre, there is a need to be technologically neutral in choosing the form of that fibre solution. Within an FTTH context there is a broad range of solutions, technologies and deployment models which are all competing with each other in the market.

The FTTH Council would also point out that each of these fibre models has a range of advantages and disadvantages associated with them. Different models may be better suited to certain markets or indeed certain market areas within Member States' national markets as some models may be better suited to a low density deployment for instance whilst other fibre based deployment models may be better suited to deployment in densely populated areas. There may be no single 'winning solution' therefore and it would be dangerous to propose such a solution as might be interpreted in some of the draft (wording).

Nevertheless, the FTTH Council understands the Commission's basic proposal as being that where public funds are used to finance network deployments, then such funds must be used in a way that facilitates competition and the competitive process to the maximum extent possible. This is a position which the FTTH Council endorses fully. As already noted, the FTTH Council sees competition and the competitive investment process as central to the whole endeavour of ensuring a rapid deployment of networks and for stimulating the end user demand which will drive take up.

A requirement that public finance supports projects that maximise the scope for third party competition in all its forms, whether based on competing parallel networks, access to fibre or other forms of access competition which preserve incentives to invest as well as competitive access provision, is entirely legitimate. However, to specify a physical or technical form of such access in advance goes too far in the FTTH Council's view and should be avoided. This can be achieved by keeping the scope of intervention related to civil work infrastructure, dark fibre and backhaul networks.

Any uncertainty about the availability of access or the access mechanisms in place where State funding is used would undermine not only incentives to invest but also raise the cost of capital for all operators on the market. The issue for Europe would be that the timeframe in which operators make their investments where doubts remain will inevitably be after our major trading partners have already done so. Europe still has the opportunity to take a lead in fibre investments and to position itself in the current economic downturn to take advantage of the next business cycle.

Therefore the suggestion that, as a barrier lowering mechanism, public finance could be used under certain conditions to create a financial fund to facilitate early investments in fibre networks is welcome in the FTTH Council's view.

Such interventions do not distort the market when done at a sufficiently low infrastructure level but provide a very important lever required in getting FTTH moving. Of note is an investment fund set up by the Portuguese Government for that market, which all local market fixed operators have signed up to. That fund appears to be an important element in a broad strategy to ensure fibre deployment happens in that market. France is going the same way and

has announced a €750M fund managed by the state owned bank Caisse des Dépôts to speed up FTTH deployment. Indeed, these funds also appear to be consistent with the Commission's own broadband development funding which was earmarked at the end of this year.

The FTTH Council would welcome references to other types of mechanisms that could be used to address other notable bottlenecks in FTTH business plans such as in-building wiring or other measures that would facilitate a transition from copper based access to fibre based access.

Chapter 5 Conclusions

In the review of the regulatory framework as well as the previously issued first draft Recommendation on the regulation of NGA, the Commission set out clearly the primacy of infrastructure based competition in establishing a robust competitive environment as the means to maximise consumer benefit while recognising that it will not be economically viable to create competing infrastructures everywhere.

Regulators will need to geographically isolate areas where the chances for competitive outcomes are greater from those where competitive processes are unlikely to deliver consumer benefits. As the State Aid document points out, public bodies should consider doing this regardless of the current state of competition in these areas but base their decisions on an identified potential to support competition in order to limit those geographic areas where state interventions are required.

While public support beyond those competitive areas will be needed this document is consistent with the Commission's basic approach that infrastructure competition should be pursued where it is possible.

Today, there is a broad range of solutions, technologies and deployment models which are all competing with each other in the market. This does not imply though that the Commission should opt for or favour a particular technology or deployment model. On the contrary the FTTH Council believe that the solutions deployed should be determined on the market. The FTTH Council supports the fundamental approach in the draft guidelines which requires investments that use public funds to support competition and the competitive process to the maximum extent possible.

The Council explicitly endorses the exclusions of DSL deployments from the assessments of whether an area is likely to be black, white or grey. The presence of DSL deployments is unlikely to be very informative about the prospects for NGA deployments.

Clearly, identifying geographic areas that are likely to see market driven deployment will be more difficult as the assessor moves from white towards black. In such circumstances the FTTH Council believes that the Commission should restrict public interventions to those that lower barriers to entry, for instance by emphasising investments in passive infrastructures.

The FTTH Council believes that the Commission should recognise that in white areas and in certain grey areas, State support to ensure that sufficient backhaul capacity is available may also be appropriate.

Competition neutral interventions such as the creation of Government managed funds to make available finance for fibre investments should also be encouraged and developed further in the Council's view.

The FTTH Council supports a continued emphasis on market driven competition with other forms of support where a competitive outcome is not feasible.