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FINANCING OF THE ROLL-OUT OF BROADBAND NETWORKS

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EU STATE AID CONTROL IN THE BROADBAND SECTOR[1]

1. Introduction

1. Investment in telecommunications infrastructure is assumed to have significant positive spill-overs for the economy as a whole.[2] A positive impact on economic development and employment by investing in broadband networks has been found also for areas with low population density. However, very different policies have been applied to pursue the goal of achieving ubiquitous high speed broadband coverage[3].

2. The rapid deployment of broadband infrastructure is a priority for the EU. Today, internet access in the EU is mainly based on first generation broadband. Most people connect to the cyberspace over telephone copper and TV cable networks, both of which offer only limited speeds.[4] Next Generation Access (NGA) technologies (VDSL, Cable Docsis 3.0 and FTTP) that enable to access high-speed internet are available to 62% in the EU. Coverage in rural areas is substantially lower for fixed technologies (89.7%), and especially for NGA (18.1%)[5].

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1 EU Commission contribution by Oliver Stehmann, Annette Kliemann and Ann Rutgeerts, European Commission – DG Competition. The views expressed in this paper are those of the authors and do not necessarily reflect the views of DG Competition or the European Commission.

2 There is ample literature discussing the positive spill-overs of the telecommunications (broadband) infrastructure for the economy as a whole. For instance, in an empirical research Röller and Waverman (2001) demonstrate such a positive impact for 21 OECD countries in the 1970s and 1980s. More recently, using a similar approach for broadband technology, Czerich et al. (2009) show for the period from 1996 to 2007 that the development of such networks led to a 2.7% to 3.9% higher per capita GNP for 25 OECD countries. Fornefeld, Delaunay and Elixman (2008) estimate that in the economically advanced countries 0.89% of economic growth can be attributed to the broadband sector. Röller, L-H. und L. Waverman (2001): Telecommunications Infrastructure and Economic Development: A Simultaneous Approach in: American Economic Review 91 (4), S. 909-923. Czernich, N., O.Falck, T. Kretschmer und L. Woessmann (2009): Broadband Infrastructure and Economic Growth, in: CES Working Papers No. 2861. Fornefeld, M., Delaunay, G., und Elixman, D (2008): The impact of broadband on growth and productivity. Report by Micus, Mansgement Consulting GmbH, Berlin / Germany.

3 The most radical approach was taken by Australia and New Zealand where the complete roll-out relied on public funds, forcing all operators to compete on this infrastructure. In South Korea and Japan, governments provided "soft loans" to the incumbent operators to undertake such investment. In the US, a mixture was applied between state funding and regulatory intervention. The "American Recovery and Reinvestment Act" (ARRA) has set aside 7.2 billion Dollar for the construction of broadband networks. In addition incumbents benefit from a "regulatory holiday".

4 Basic broadband is available to all in the EU, when considering all major technologies (xDSL, Cable, Fibre to the Premises, WiMax, HSPA, LTE and Satellite). Taking only fixed, fixed wireless (WiMAX) and mobile wireless (HSPA and LTE) into account, the coverage goes down to 99.4%. Fixed and fixed-wireless technologies, which are mainly used as primary internet connections at home, cover 97.1% of EU homes (Digital Agenda Scoreboard 2014 – Broadband markets).

5 Digital Agenda Scoreboard 2014 – Broadband markets.

3. While in the EU there is a clear trend towards delivering higher speeds using first generation broadband technologies, following the upgrade of Cable and DSL infrastructures and the new deployments of NGA networks, fast broadband subscriptions are getting more widespread in Europe. Currently there are 6.3 fast broadband subscriptions (offering a headline download speed of minimum 30 Mbps) per 100 people, up from 2.5 two years ago. Ultrafast connections (providing speeds equal to or above 100 Mbps) represent only a fraction of fixed broadband subscriptions in the EU (around 1.5 subscriptions per 100 people, corresponding to 3% of homes).[6]

4. Around the world governments intervene to foster the development of the telecommunications and broadband sector. Only in the EEA state funding is subject to State aid control. Since 2003, the Commission has taken more than 130 State aid decisions in the broadband sector.[7]

5. The main objective of State aid control in this sector is to reconcile the conflicting objectives of fostering rapid roll-out of broadband infrastructure and limiting distortions of competition; in particular the crowding-out of private investment. Until 2009, the financial support offered by Member States for the broadband development was assessed directly under the State aid rules of the Treaty on a case-by-case basis. On the basis of this case practice, in 2009 the Commission adopted Guidelines for the assessment of State aid in broadband.[8] Since then, the Broadband Guidelines form the fundamental reference for State aid assessment.

6. In the light of rapid technological and regulatory change, the 2009 Guidelines provided for a review to be carried out within three years. In the context of this review the Commission carried out two public consultations and procured a study carried out by WIK Consult on the implementation of the existing Broadband Guidelines.[9] The study looked at 10 cases and provided recommendations on technological and competition issues to be tackled in the review.

7. The review was concluded in 2012 and on 26 January 2013 new Broadband Guidelines have entered into force.[10] Changes to the Guidelines became necessary to take into account technological progress and the Digital Agenda[11], which emphasises that Europe needs widely available and competitively priced fast and ultra-fast Internet access. The Europe 2020 Strategy restates the objective to bring basic broadband to all Europeans by 2013 and it seeks to ensure that, by 2020

- all Europeans have access to much higher Internet speeds of above 30 Mbps, and
- 50% or more of European households subscribe to Internet connections above 100 Mbps.

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6 Digital Agenda Scoreboard 2014 – Broadband markets.

7 The list of Commission's broadband decisions is available here: http://ec.europa.eu/competition/sectors/telecommunications/broadband_decisions.pdf.

8 Communication from the Commission — Community Guidelines for the application of State aid rules in relation to rapid deployment of broadband networks Text with EEA relevance, OJ C 235, 30.9.2009, p. 7–25: http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:52009XC0930(02):EN:NOT.

9 See http://ec.europa.eu/competition/consultations/2011_broadband_guidelines/final_report_en.pdf.

10 EU Guidelines for the application of State aid rules in relation to the rapid deployment of broadband networks, OJ C 25 of 26.1.2013, p.1, see: http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:C:2013:025:0001:0026:EN:PDF.

11 "A Digital Agenda for Europe", Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions COM (2010) 245.

8. According to the Digital Agenda the Member States had to draw up national broadband strategies that may contain funding instruments.

9. The biggest obstacle to achieve these objectives is indeed the significant "funding gap": While most of the necessary investments are made by private companies, investments of private operators alone will not yield the desired results. Apart from the fact that the investment costs of deploying ultra-fast (fibre based) broadband networks are particularly high, the (incumbent) operators consider that there is not yet enough demand for services requiring such advanced networks. In this case, it is more profitable to carry on operating their existing infrastructure. Even in countries where investments are progressing, commercial deployment of ultra-fast broadband networks are focused on few major (capital) cities.

10. Over the last three years, the Commission approved over EUR 9.5 billion of broadband State aid. This amount, however, does not include all government support to the sector, as not all State measures fall under the definition of State aid.[12] In addition to Member State financing, also the EU provides funding.

2. Analysis

11. Broadband infrastructure creates significant general economic benefits, which exceed the private benefits of individual operators. This leads to a market failure as there is too little private investment from the viewpoint of society as a whole. In addition, there exist high entry barriers in the form of considerable fixed and sunk costs of broadband infrastructure investment. Such market failure could justify public intervention, including the granting of State aid. This holds in particular in rural and less populated areas.

12. On the other hand, public funds have to be used cautiously in a sector such as the electronic communications, which has already been fully liberalised. Public support for broadband investment should be complementary and not substitute the investments of private market players. To minimise distortions of competition, state intervention should limit as much as possible the risk of crowding out private investments and of altering commercial investment incentives. Crowding out of private investments would not only lead to the waste of taxpayer's money[13], it would also distort competition, drive away private investors and therefore it could delay achieving the Digital Agenda objective itself.

13. State aid control has to reconcile these conflicting goals.

14. As a further complication, the State aid assessment needs to take into account that there exist several competing infrastructure platforms (like cable, mobile, satellite and fixed line networks) which all go through a rapid technological development. State intervention could distort the process of innovation if preference is given to certain technologies.

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12 It should also be noted that a new General Block Exemption Regulation was recently adopted, which exempts unproblematic broadband projects with a budget below 70 million EUR from notification to the Commission. The aim of this Regulation is to allow the Commission to focus its state aid control on significant broadband projects. The Regulation will enter into force on 1 July 2014. See http://europa.eu/rapid/press-release_IP-14-587_en.htm and http://ec.europa.eu/competition/state_aid/legislation/block.html#gber.

13 To take an extreme example from the US where State aid control does not exist: Eisenach and Caves (2011) report that a large part of the "Rural Utilities Service" (RUS) from the ARRA funded broadband initiative was invested in areas where a high proportion of households was already previously served by private providers. In the three projects examined only 452 new homes were connected to broadband infrastructure with a state subsidy of USD 232 million. According to the authors, this massively wasteful investment resulted from the fact that the ARRA left to the RUS substantial freedom while the latter had insufficient experience in the sector. As a result, mainly projects in the suburbs were funded. Eisenach and Cates (2011), p. 4 - 10.

2.1 The main principles of the Broadband guidelines

15. The main purpose of State aid control in the broadband sector is to achieve a balance between fostering infrastructure rollout and preserving market competition.

16. The broadband Guidelines distinguish between basic and NGA networks. The logic behind the distinction is that while the former is based on the existing legacy network, NGAs represent new infrastructures with enhanced characteristics, and able to deliver advanced connectivity services (very high upload and download speeds). The Guidelines, after clarifying what constitutes State aid, set out the conditions under which aid could be declared compatible.

17. This is done on the basis of the so-called balancing test. It weighs the positive impact of the aid measure against its potential negative effects such as distortion of competition or trade. On the positive side, the aid has to address a market failure (which has to be demonstrated by the Member State). In order to assess the existence of market failures, the Guidelines use the concept of white, black or grey target areas for State intervention.

18. "White areas" are those where broadband services are currently not available and where no network expansion plans are pursued by private investors within the near future (specified as a period of 3 years). These areas are eligible for State aid. In contrast to that, no State intervention is in principle needed in "black areas", since these are characterised by at least two broadband network providers and by the provision of broadband services under competitive market conditions. In "grey areas", considered as those with a de facto monopoly, State aid is permitted only under certain circumstances, and a more thorough assessment is needed. To justify the proposed categorisation of a particular region, the Member State has to provide detailed mapping information including coverage and market analysis. The 'colour scheme' applies to both basic broadband and NGA funding.

19. The balancing test then sets out a number of principles to limit the distortion of competition to the minimum. First, it has to be demonstrated that, in order to address the market failure, there is no better way of intervention (such as regulation). Moreover, the Guidelines indicate concrete conditions that have to be fulfilled for the intervention to be considered as not excessively distortive: an open tender process, the choice of the most economically advantageous offer, technological neutrality, use of existing infrastructure, wholesale third party access at prices derived from benchmarking and a claw-back mechanism to avoid over-compensation.

2.2 Main changes in the 2013 Broadband guidelines

20. To align the Broadband Guidelines with the Digital Agenda objectives, a new chapter has been added on "ultra-fast" NGA infrastructure (speeds well above 100 Mb/s). Under certain (strict) conditions[14], State aid to build such "ultra-fast" NGA networks may be allowed even in urban areas where there exist already competing NGA networks. The granting authority must first prove that the subsidised network exhibits significant enhanced technological characteristics and performance compared to the verifiable characteristics and performance of existing or planned networks. Further, it must prove that the subsidised network will be based on an open architecture operated as a wholesale only network and that the aid does not lead to excessive distortion of competition with other NGA technologies that have recently been the subject of significant new infrastructure investments by market operators in the same target area[15].

14 In particular, the existing or planned NGA networks do not reach the end-user premises with fibre networks, the market situation is not evolving towards the achievement of a competitive provision of ultra-fast services above 100 Mbit/s in the near future (including taking into account the investment plans of commercial operators) and there is expected demand for such qualitative improvements.

15 This would normally be the case when, due to the aid, market operators cannot recoup the infrastructure investments undertaken in an appropriate period taking into account normal amortisation time. The

21. Also, the 2013 Guidelines introduce a new category of very fast networks, so called "NGN" (Next Generation Networks). These are backhaul networks which – unlike NGA – do not reach the end-user. Investment in NGN fibre infrastructure therefore does not necessarily provide very high speed access to the end-user, as this would depend on the technology used to cover the "last mile".

22. The Commission has also clarified its position on state funding for NGN infrastructure in the Spanish *Xarxa Oberta* case. In that case, the Commission found that support for an upgrade in a basic broadband area, in which several basic broadband providers are present, should only be authorised if there is a mechanism to ensure that the higher speed will reach the end consumer. The State aid should not lead to a mere duplication of existing basic networks or broadband offers, but be granted only if the supported network provides added value.[16]

23. NGN investment has indeed positive features. It brings the fibre closer to the end-consumer. Backhaul networks are a necessary input for retail operators which can connect different types of "last-mile" infrastructure themselves (e.g. fixed-wireless access in competition to copper based fixed infrastructure)[17]. The 2013 Guidelines provide that such pro-competitive features will be taken into account in the assessment of such projects.

24. Furthermore, in the public consultation that preceded the 2013 Guidelines, a number of stakeholders and Member States noted that the NGA definition of the 2009 Guidelines only refers to fixed fibre networks and does not take into account recent technological developments with regard to wireless and mobile technologies. As a result, the NGA definition has been broadened and based on qualitative criteria, in particular to guarantee (i) actual delivery of very high speeds, (ii) a variety of advanced digital services and (iii) substantially higher upload speeds compared to basic broadband networks. Fibre based access networks, advanced cable networks and certain advanced wireless access networks that are capable of delivering reliable high speeds per subscriber are explicitly mentioned as possible NGA networks while it is acknowledged that other technologies may be included in the future.

25. With regard to the Guidelines' compatibility criteria, a number of refinements have been introduced. The most important criterion is the requirement that the operator of a publicly funded network has to grant its competitors access to the infrastructure. While it is impossible to define all possible types of wholesale access products, the Guidelines include an annex which sets out the minimum access requirements of different broadband access network technologies. Further, based on recent decision practice[18], more flexibility has been introduced with regard to the open access conditions for areas with low population density. Indeed, in rural and remote areas there is often only limited demand for access.

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following (interconnected) factors will in particular be taken into account: the size of the investment, how recent it is, the minimum period required in order to get an adequate return on the investment and the likely effect of the roll-out of the new subsidised ultra-fast network on the number of subscribers to the existing NGA networks and the relative subscription prices.

16 See Commission decision of 11.8.2010, N 407/2009 – Spain, Xarxa Oberta and decision of 24.1.2011, N 451/2010 Germany Rotenburg Wümme.

17 E.g. in Poland, a backhaul network was built covering mostly passive elements. By providing wholesale access to other operators, the project aims at encouraging private investment into NGA networks ("last mile" connections). To prevent undue distortions of competition, connection for the provision of basic broadband services is not permitted in areas where at least two competing basic broadband networks are already in place ("basic black area"). SA.33386 – Poland – Broadband network in Lower Silesia, 19 October 2012.

18 In particular: SA. 31316, Programme national Très Haut Débit - France, Commission decision of 19.10.2011. and SA. 33671, Broadband Delivery (BD) UK – United Kingdom, Commission decision of 20.11.2012.

Economic incentives for third parties to engage in these areas may be too small in comparison to other regions even when wholesale services are available. In such circumstances, wide-ranging access conditions could disproportionately inflate costs of broadband projects without generating more competition.

26. Therefore, the 2013 Guidelines foresee that in such areas with low population density or for small local companies, it may be envisaged to require access products that necessitate costly interventions on the subsidised infrastructure only in case of a reasonable demand from a third-party operator. The demand is considered reasonable if (i) the access seeker provides a coherent business plan which justifies the development of the product on the subsidised network and (ii) no comparable access product is already offered in the same geographic area by another operator at equivalent prices to those of more densely populated areas.

27. Several other changes aim at improving the use of existing infrastructure to avoid duplication of investments, to reflect stakeholders' requests for more transparency and to improve the implementation of State aid decisions.

28. Member States are required to keep a central database for existing infrastructure and public tenders. As regards implementation, National Regulatory Authorities (NRAs) will be more involved with regard to technical issues, such as, for instance, regarding wholesale access pricing. This allows limiting the risk of competitive distortions and reducing the transaction cost of operators. Finally, a new requirement of a "light" ex post reporting obligation on certain elements of the authorised measures should lead to an improved assessment of the effectiveness of the authorised aid and of state aid policy in the field.

3. Outlook

29. Driven by technological progress, the two main changes in the 2013 broadband guidelines are the widening of the NGA definition and the new chapter on ultra-fast networks.

30. The broadening of the NGA definition in the new broadband guidelines could make public funding of NGA infrastructure more difficult in the future, because it automatically increases the areas that are considered to be NGA "grey" or even "black"[19] and for which more strict rules apply or where state funding is in principle excluded entirely.

31. If, for instance, in a particular area there already exist an advanced mobile and a fixed wired network, which under the new definition could now both qualify as NGA, public funding of additional infrastructure would in principle no longer be permitted – unless all the conditions of the new "ultra-fast" section are fulfilled.

32. On the other hand, and as a result of the first point, one may expect that such a change could encourage private investment in these technologies, as they would be better protected against being

[19] In order to assess the existence of market failures, the Guidelines use the concept of white, black or grey target areas for State intervention. "White areas" are those where broadband services are currently not available and where no network expansion plans are pursued by private investors within the near future (specified as a period of 3 years). These areas are eligible for State aid. In contrast to that, no State intervention is needed in "black areas", since these are characterised by at least two broadband network providers and by the provision of broadband services under competitive market conditions (facilities-based competition). In "grey areas", considered as those with a de facto monopoly, State aid is permitted only under certain circumstances, and a more thorough assessment is needed. To justify the proposed categorisation of a particular region, the Member State has to provide detailed mapping information including coverage and market analysis. The 'colour scheme' applies to both, basic broadband and NGA funding.

overbuilt by another publicly funded NGA network. The new NGA definition also opens the possibility that bidders propose different technical solutions to publicly funded NGA projects. This should increase competition in tender procedures with a positive impact on the necessary aid amount.

33. The effect of the new chapter on ultra-fast networks is more difficult to predict. While it opens the door for public funding in black (urban) NGA areas, the conditions attached are strict. In addition, one may expect that many of these cases could be controversial as the incumbent NGA operators will be concerned about the detrimental effect of such intervention on their prior investment. This raises the risk of litigation. So far, there have been only two public interventions in urban areas. Both have been appealed before the Court.[20]

[20] Case SA. 331/2008, Haut-de-Seine – France, Commission decision of 30.09.2009, confirmed by the Court (Judgments in cases T-79/10, Colt Télécommunications France v. Commission; T-258/10, Orange v. Commission; and T-325/10, Iliad & Ors v. Commission) and case SA.33540 City of Birmingham – UK, Commission decision of 12.06.2012 (appeal to the Court withdrawn after the aid granting authority decided not to implement the project).