Public funding for broadband networks — recent developments

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1. Introduction

Many public initiatives are taking place at national, regional or even local level to advance the development of fast Internet access and the widespread deployment of broadband infrastructures. Although such initiatives are in line with the Commission's overall policy of making broadband crucial to European growth and quality of life in the years ahead, public intervention inevitably raises the question of the conditions under which public funding for broadband (2) can be deemed to be compatible with the EC State aid rules (3).

Broadband services and networks are evolving fast, moving Europe towards the "knowledge-based society". Likewise, State funding is now shifting from basic broadband infrastructure to "next generation" broadband networks capable of delivering multimedia services over fibre networks. Over the past two years, the Commission has assessed several projects involving public support for broadband and has so far issued 22 decisions, concerning projects in 10 countries. In two cases, no aid was present (4), while in 19 cases, the Commission decided not to raise objections as the aid was deemed compatible under Article 87(3)(c) EC Treaty (5). The Commission opened a formal investigation and adopted a negative final decision only in one case regarding State support for a fibre access network in the Dutch town of Appingedam (6).

White, grey and black areas: the starting point

The main motivation for State intervention in broadband is to bridge the "digital divide" between more affluent areas and remote regions without appropriate broadband offers. Most of the projects assessed by the Commission concerned *white areas,* which are rural and scarcely populated zones, where no broadband services or only expensive leased line or satellite services could be offered. State support for broadband in these regions is generally deemed compatible if certain proportionality conditions are respected. State intervention in *grey areas,* where basic broadband services are already provided, requires a more detailed assessment by the Commission. In *black areas,* characterised by the availability of different broadband services over at least two competing infrastructures (such as telephone and cable TV networks), the justification for State intervention is doubtful as there is a high risk that State intervention may crowd out existing and future investments by market players.

The above distinction between *white, grey* and *black areas,* derived from coverage considerations, can be taken as the starting point to explain the reasons for State intervention and also the impact of the State aid on competition in a specific region or market. That said, each case will still need to be assessed on its own merits, taking into account the specific market context (availability and take-up of broadband, available infrastructure, degree of competition, etc.) and the proportionality of the public intervention.

This article illustrates the Commission's approach by briefly describing the assessment for three recent broadband cases, highlighting the most relevant parts of the analysis. The compatibility assessment in all three cases is based on a "balancing test" in line with the "refined economic approach" set out in the State aid action plan. Although the Commission's assessment has evolved compared to

(1) The content of this article does not necessarily reflect the official position of the European Communities. Responsibility for the information and views expressed lies entirely with the authors. The authors wish to thank Obhi Chatterjee for his valuable comments.

(2) Broadband services can be delivered using various combinations of communications network technologies ("platforms"). Technologies can feature either fixed or radio based transmission infrastructure, and they can substitute or complement each other according to the individual situation. Current mass-market broadband services in the EU-15 have generally download speeds starting from 512Kbit/s/ — 1Mbit/s. For business users, much higher speeds are generally needed.

(3) See also "State aid rules and public funding of broadband", by Monika Hencsey, Olivia Reymond, Alexander Riedl, Sandro Santamato and Jan Gerrit Westerhof, Competition Policy Newsletter, Spring 2005.

(4) The decision in case N382/2004, "Haut débit en Limousin — DORSAL" (F) of 3.5.2005 has been appealed by UPC France in the Court of First Instance, case T-367/05.

(5) Decisions available at http://ec.europa.eu/competition/state_aid/decisions/

(6) Case C35/2005 "Broadband development in Appingedam", opening decision OJ C 321, 16.12.2005, p. 7 and final decision of 19.7.2006 (not yet published).

earlier "broadband" cases, the basic tests in any assessment under Article 87 (3) (c) EC have not changed. First, State intervention should be well justified, either in terms of pursuing an accepted objective of social or economic cohesion or as a remedy for a well-defined market failure. Second, State intervention must be proportionate to the objective pursued and finally, the measure must have a positive effect overall on welfare and competition.

2. Description of Recent Cases

Broadband in underserved Territories of Greece (7)

This case concerned the implementation of a comprehensive national broadband policy aiming to remedy both the supply and the demand side shortcomings of the Greek broadband market.

The country is characterised by many rural and mountainous regions and numerous islands with a very low population density compared to the EU average. As a result, providers of broadband services had focused their activities mainly on the Athens and Thessalonika metropolitan areas and capitals of prefectures where economic activity is concentrated. As a result, broadband networks cover only a very small part of the Greek territory. Moreover, the penetration rate for retail broadband access was one of the lowest in Europe with only 1% of all citizens using broadband (8).

Given the lack of adequate broadband infrastructure in most parts of the country and the low level of demand for broadband services, the Greek authorities came up with a comprehensive support program with an overall State aid budget of € 210 million, consisting of 2 axes:

The first axis concerned the supply-side and aimed to boost network investments in broadband access infrastructure to enable successful bidders to provide broadband services in underserved territories of Greece.

The second axis focused on a series of complementary but necessary actions to stimulate demand for retail broadband services by funding the acquisition by end-users of PCs, modems, and providing financial support to certain socially or otherwise disadvantaged categories of the population.

(7) Case N201/2006 "Broadband in underserved territories of Greece" of 4.7.2006 .

(8) European electronic communications regulations and markets 2005 (11th REPORT) COM(2006)68 final, p. 122.

Presence of State aid

The Commission considered that, as regards the supply-side elements of the project, the measure represented aid to the successful bidders to the extent that it directly subsidised the provision of retail broadband services in certain regions of Greece. Operators using the wholesale provision were also indirect beneficiaries of the aid. The demand-side subsidies of the measure did not constitute aid within the meaning of Article 87 (1) of the EC Treaty as either the beneficiaries were not undertakings or, as far as SMEs were concerned, the funding would not exceed the de minimis threshold.

Compatibility assessment: applying the "balancing test"

The notified project was at the core of the Greek national broadband strategy and in line with Community policies in this field outlined most recently in the Commission's i2010 Communication (9) to achieve better broadband coverage and take-up. The Commission concluded that by securing or improving broadband access for citizens and businesses in underserved regions of Greece, the measure would help to achieve greater cohesion and economic development and thus serve the common interest.

Secondly, the Commission analysed whether the aid was well-designed to serve an objective of common interest. If it is true that, as regards the supply side, tariff and access regulation imposed by the Greek regulator might be another instrument of State intervention, ex ante regulation presupposes that a broadband access infrastructure already exists. This was clearly not the case for most of the areas concerned. Likewise, even if such wholesale access existed, alternative providers would need to combine the use of (regulated) wholesale products from the incumbent (full or shared unbundling of the local loop, the last mile connecting the end customer) with their own network investments, which may not be profitable in areas where demand is low. Therefore, on balance, the Commission considered that the development of broadband infrastructure by means of State co-financing was an appropriate instrument to achieve the declared objectives.

Third, as regards proportionality, the Commission found that the Greek authorities had designed the measure in a way which minimised the State aid involved and the potential distortions of competition arising from the scheme. To limit their intervention, the Greek authorities had clearly identified

(9) http://ec.europa.eu/i2010.

the geographic areas which were lagging behind in terms of broadband deployment. Moreover, State funding was provided on the basis of an open tender, with wholesale access to the subsidised infrastructure being granted to third party providers on non-discriminatory terms and without favouring or imposing any kind of access technology.

Conclusion

Altogether, the Commission concluded that the distortions of competition and the effect on trade were limited so that the measure would have a positive effect overall. Consequently, the Commission approved the project.

Metropolitan Area Networks — Ireland

In June 2005, the Irish authorities notified the Commission of the roll-out of Metropolitan Area Networks ("MANs") which are part of the Irish Regional Broadband Programme ([10]). The case concerned State support for the roll-out of an electronic communications infrastructure in a grey area, where the incumbent already offered or planned to offer basic broadband services and therefore called for an in-depth assessment by the Commission.

In October 2005, only 5.3% of the Irish population had broadband access, one of the lowest rates in Europe. There were various explanations for this "broadband gap": Ireland has a very distinct population distribution with a large part of the population located in the greater Dublin area. As a result, infrastructure investment by alternative operators has mainly been limited to the capital and to regional connectivity linking the major cities. This has led to a lack of infrastructure competition in smaller towns and cities (TV cable networks are only present in a few cities). Moreover, it was only in 2002 that Eircom, the incumbent provider, had started to offer mass market retail broadband.

The Irish government argued that there were not enough commercial incentives for private operators to build alternative infrastructures capable of providing broadband services in smaller towns outside the main cities of Ireland. The MAN programme, which involves up to € 170 million of State funds, entails the construction of open, carrier-neutral optical fibre rings to enable the provision of wholesale services to electronic communications operators. Networks will be built in up to 120 Irish towns where such an open neutral wholesale infrastructure is not available. The management and exploitation of the networks, which remain in public ownership, will be tendered out to a wholesale operator. This wholesale operator will offer services to telecommunications companies which deliver high-speed electronic communications services to end users.

The Irish authorities argued that the measure did not involve State aid within the meaning of Article 87 (1) EC Treaty. Consequently, the Commission first had to establish whether the intervention by the Irish authorities constituted State aid.

State aid or general infrastructure?

At the outset the Commission refuted the argument that the MANs represented "general infrastructure", built to remedy the lack of market investments and that no advantage would be conferred upon a specific undertaking. For the Commission, only infrastructure which is needed for the State to fulfil its responsibilities towards the general public could be considered as "general infrastructure" (i.e., bridges, ports, motorways, etc). Moreover it should be a facility that is unlikely to be provided by the market because it would not be economically viable, and the way it is operated should not selectively favour any specific undertaking. The Commission observed that fibre networks such as the MANs are actually deployed by market operators providing electronic communication services, although not necessarily on the conditions sought by the Irish Government.

Likewise, the Commission refuted the argument by the Irish Government that the running of the MANs by the wholesale operator chosen could be classified as a Service of General Economic Interest. This was in fact more of a public-private-partnership than a provision of such a service. In that respect, the planned measure was also different from earlier cases dealt with by the Commission ([11]).

The Irish authorities do not act like a market investor

The Irish authorities stated that their intervention was necessary precisely because market players are unwilling to invest in deploying an infrastructure similar to the MANs. Therefore, the Commission concluded that the investment by the authorities was not guided by profitability considerations but primarily by the aim to lower entry barriers for alternative operators to boost the competitive supply of broadband services. A market operator would have either not invested in the project

([10]) Case N284/2005 "Regional Broadband Programme: Metropolitan Area Networks ("MANs"), phases II and III" — (IRL) of 8.3.2006.

([11]) For instance case N381/2004, "Projet de réseau de télécommunication haut débit des Pyrénées-Atlantiques" (F) of 16.11.2004.

or not concluded a contract with the wholesale operator at the likely conditions. The Commission concluded that the measure involved State aid to the wholesale operator, third party operators and end users carrying out an economic activity since it gave them an economic advantage, was publicly funded, had the potential to distort competition and affected trade between the EU Member States.

Compatibility assessment

Again, the Commission assessed, directly under Article 87(3)(c), whether the aid measure was aimed at a well-defined objective of common interest and addressed either a market failure or fulfilled a cohesion objective. The project is a key element of the Irish national broadband strategy and in line with Community policies in this field. In essence, the MANs aim to improve broadband access for Irish citizens and businesses by tackling the lack of broadband infrastructure in the targeted towns.

Cohesion objective and market failure considerations

Broadband networks are generally more profitable to roll-out where potential demand is higher and concentrated, i.e. in densely populated areas. Because of high fixed costs, unit costs escalate as population densities drop. In areas where demand is not very developed and cost recovery is uncertain, private operators might find it difficult to secure funding for infrastructure projects. There is evidence that incumbents with market power in "traditional" services such as voice telephony almost invariably also had first-mover advantages by offering broadband to their existing clients, allowing them to leverage their traditional market power into new markets. These characteristics of the sector and the previous existence of a State monopoly in the Irish market have led to market failure in the form of market power by Eircom in a number of markets.

Although *ex ante* regulation had partly addressed the absence of competitive conditions and the lack of infrastructure competition, in the areas targeted by the measure, Eircom was still the only network operator that could partially compete with the future MANs. It should be stressed that Eircom is a vertically integrated provider which did not provide access to those elements of its core infrastructure for which there is no regulated access for other providers.

Consequently, the Commission considered that by funding the establishment of an open wholesale infrastructure in towns outside Dublin, the authorities pursue genuine cohesion and economic development objectives which would have a positive impact on the supply and competition in the towns covered by the measure.

Well-designed and proportional aid

As in the Greek broadband case (see above), given the inherent limitations of *ex ante* regulation as a means to enable the supply of broadband services in rural and remote regions, the Commission considered that the development of broadband infrastructure through State co-financing was an appropriate instrument to achieve the set objectives. As regards proportionality, the Commission found that the Irish authorities had designed the measure in a way which minimised the State aid involved and the potential distortions of competition arising from the scheme. The authorities have committed to roll-out MANs only where such an infrastructure or comparable services are not available, and implemented a number of necessary safeguards (such as requiring open tender procedures, a detailed concession agreement, and the wholesale character of the programme).

Overall impact on competition and trade

The Commission also assessed the overall impact of the measure on competition and trade in qualitative, rather than quantitative, terms. The lack of competition (both between and within platforms) had been identified as an important reason for the relatively poor performance in relation to broadband supply and take-up in Ireland. Consequently, the Commission found that the measure may not only benefit broadband users through facilitating the entry of alternative providers into the market, but may also increase the competitive pressure on the incumbent provider Eircom.

Eircom had already accelerated its investments in broadband infrastructure and started the mass market roll-out of retail broadband in 2003, decreasing prices in 2004 and 2005. While there could be many reasons for this behaviour, price decreases are consistent with the hypothesis that investment in the MANs would facilitate competition, and that Eircom was trying to reduce the attractiveness of the market to new entrants. Finally, the availability of an open wholesale infrastructure facilitates market entry for operators from other Member States, which would have a positive effect on Community trade.

Conclusion

In view of the particular characteristics of the Irish market, the Commission concluded that the overall effect of the measure on the broadband market would be positive and that the aid was compatible with the common market.

The Appingedam case: crowding out existing operators

This was the first State aid for broadband which the Commission declared incompatible with the EC Treaty on the grounds that the State intervention was not justified by the existing market conditions. The municipality of Appingedam, a small town in the north of the Netherlands, intended to support the deployment of a glass-fibre access network for electronic communications. The municipality considered that public intervention was needed to encourage the supply of advanced broadband services to companies and citizens. The passive layer of this "Fibre-to-the-Home" network (i.e. the ducts and fibre) would be owned by the municipality while the active layer (i.e. the management and operation of the network) would be tendered to a private-sector wholesale operator. This operator would only offer wholesale services to service providers but could not offer retail services.

Essent Kabelcom, a major cable operator also active in Appingedam, filed a complaint with the Commission in November 2004 claiming that the measure involved illegal aid. Essent had also lodged an appeal in a national court in September 2004, prompting the court to order the municipality to notify its plans to the Commission and to suspend the further rollout of the network. Because the Commission had doubts about the compatibility of the measure, it opened the formal investigation procedure in October 2005.

Presence of State aid

As in the Irish case, the Dutch authorities argued that the measure did not entail State aid and that the provision of the passive network could be seen as a typical task of a public authority providing "public" infrastructure open to all parties at similar conditions. The Commission refuted this argument for the same reasons as in the Irish case. Although the Dutch authorities did not suggest that the measure involved the provision of a service of general economic interest, the Commission also examined this aspect. Again, as in the Irish case, the Commission concluded that the wholesale operator is not entrusted with a mandate to enable broadband access to the general public as a service of general economic interest.

The Dutch authorities claimed that the investments by the municipality were necessary precisely because market players were not willing to invest in the passive fibre network as the expected return on investment is not sufficiently high. This demonstrated that the municipality was not acting as a rational private investor so its investment in the network did not pass the market investor test.

Consequently, the Commission concluded that the measure constituted State aid within the meaning of Article 87(1) EC Treaty on the grounds that the funding granted by the municipality conferred a specific advantage to the selected network operator (and the providers of electronic communications services), distorted competition, and had an effect on trade.

Compatibility assessment

In line with the assessment in the other broadband cases outlined above, the Commission examined whether the measure either remedied a market failure or pursued a cohesion objective.

Market failure?

Concerning the existence of potential market failures, recent data ([12]) confirmed the high degree of competition and the multitude of broadband offers in the Dutch market, which has the highest broadband penetration (30%) in the EU. Moreover, the Commission pointed out that the Dutch broadband market is a fast-moving environment in which providers of electronic communications services, including cable operators and Internet Service Providers, continue to introduce very high capacity broadband services without State support.

Hence, there were strong indications that market forces alone would deliver appropriate coverage and meet the consumers' demands for high-bandwidth services. In this regard, a report by the Netherlands Bureau for Economic Policy Analysis ([13]) had also stated explicitly that there is generally no market failure in the broadband market in the Netherlands, that firms have adequate incentives to invest in broadband and that the best government policy would be to rely on market forces. The report further revealed that existing market failures are mainly limited to market power and regulation by the Dutch regulator OPTA seemed to address this issue.

More specifically, Appingedam could be considered as a *black area* where demand supports a competitive supply of broadband services. As regards the *retail market,* both KPN (the fixed line incumbent) and Essent offer "triple play services" (telephony, broadband and digital/analogue TV) to end users. Both operators have the technical capabilities to further increase the bandwidth capacity of their networks. Concerning, the *wholesale market,* the Dutch regulator OPTA has already imposed regu-

([12]) Footnote 8 and OECD broadband statistics December 2005.

([13]) *Do market failures hamper the perspectives of broadband?,* Centraal Planbureau, December 2005.

latory remedies on KPN in relation to the market for the unbundling of the local loop. Moreover, Essent also offers a form of wholesale broadband access to third parties on the Dutch market.

The Dutch authorities argued that advanced content services and applications need networks with higher capacity than those offered by the existing copper or hybrid copper-fibre cable networks. However, it is difficult at this stage to envisage mass-market applications in the near to mid-term future which could not be delivered over existing (or upgraded) broadband networks. This means that services delivered over the municipal fibre network in Appingedam and those delivered over existing networks are substitutable and that accordingly the potential distortion of competition by the measure will remain high for the foreseeable future. In summary, the Commission considered that there is no market failure at present which would require financial State support and that the proposed public intervention risks crowding out private initiatives.

Cohesion objective?

The Commission also assessed whether the measure could have a cohesion policy rationale. Although Appingedam is located in a peripheral region of the Netherlands, the intervention is taking place in a town where retail and wholesale broadband services are already available via various providers of electronic communications services and networks at service conditions and prices comparable to other regions.

Conclusion

Consequently, the construction of an additional network in Appingedam with State funding would neither address a market failure nor a cohesion problem. The measure would distort competition due to its impact on the investments of private operators. Hence, in view of the absence of an objective of common interest, the Commission concluded that measure did not fulfil the criteria under Article 87 (3) (c) and was deemed to be incompatible. As the construction of the network had not yet started, no aid had to be recovered.

3. Conclusions and outlook

The assessment of recent cases shows that the market situation in Member States varies considerably and State intervention in favour of broadband can take many different forms. Therefore, each case has to be assessed on its own merits and there are no simple general guiding principles which apply to all projects. Nevertheless, while the recent decisions concern different types of State support for broadband, they highlight positive and negative aspects of public intervention and illustrate how similar measures would be assessed under the State aid rules.

A snapshot of the overall broadband market shows that the technical, economic and regulatory environment for broadband deployment and usage is evolving rapidly in the EU. Operators are migrating their networks gradually to Internet Protocol (IP)-based platforms and are rolling-out (or plan to deploy) VDSL ([14]) and FTTH ([15]) infrastructures. New wireless networks are mushrooming in many European cities.

Given the crucial importance of broadband for economic development and the creation of a knowledge and information-based society, public authorities get involved in various ways in the roll-out of these networks and could play a positive role in facilitating this process. For instance, rapid, operator-friendly authorisation procedures or lower fees for rights of way would be helpful. Moreover, if public authorities decide to invest in broadband infrastructure with private investors under equal conditions and on market terms, this would not be regarded as State aid.

That said, there are signs that public authorities are not only trying to foster the widespread development of broadband networks in remote and rural areas but have also started intervening in so-called *black areas*. This kind of intervention raises a whole new set of issues as competition is more likely to be distorted. The Commission intends to monitor these developments closely and its policy will evolve in response to new patterns of public intervention.

([14]) Very high-speed Digital Subscriber Line.
([15]) Fibre-to-the-Home, optical local access networks.