



Long term risk sharing contracts as an approach to establish public–private partnerships for investment into next generation access networks

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ABSTRACT

This paper develops an investment/pricing model for the deployment of basic broadband networks which, along with other applications, is applicable to public–private partnership projects. In particular, a new investment model is suggested to be used for finance deployment over a longer term by enabling both private and public investors to participate in the roll-out of next generation access (NGA) infrastructure. This so-called “long-term risk sharing concept” has several notable benefits compared with the traditional regulatory approach. Above all, the model enables both private operators and public authorities to share the risk of investing in NGA infrastructure. Thus the model offers a way for public authorities to achieve a timely and countrywide roll-out of NGA networks, including in areas where NGA investment would otherwise not occur.

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1. Introduction

The telecommunications sector is at the beginning of a new era. The roll-out of new access networks, so called next generation access (NGA) networks is driven by technological developments and increasing demand for high speed broadband services. For the first time numerous operators compete with each other right from the beginning in the building of such infrastructure (Pupillo, 2008). Yet, although the issue of NGA network roll-out is on the agenda for some years, in many countries investment in NGAs is so far rather limited. While former incumbents originally proposed huge investments in the roll-out of broadband infrastructure,² they have recently become very cautious. In some countries operators are only now in the planning process of deploying fibre in their access networks. The reasons for this are manifold, one of them being that in many areas the deployment of an NGA network is just not profitable.³

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² Deutsche Telekom proposed approximately €3 billion investment to roll-out very high-speed DSL and British Telecom in mid-2008 announced a GBP1.5 billion fibre plan to give 30% of homes access to fibre in the UK (European Commission, 2009a, p. 8).

³ Two other reasons are the unclear situation on the future regulation of NGAs and the economic crisis in 2008/09 which forced operators to reduce capital expenditure to improve their operating cash flow.

It is for this reason that governments and/or local authorities increasingly subsidise new networks or participate in public–private partnerships (PPP) for the deployment of NGA broadband infrastructure.⁴ Examples of public–private partnerships could be public services or public utilities which regularly replace their electric wires or their gas pipes which enables them to deploy fibre infrastructure at the same time on low cost levels. A key feature of such PPP-projects is that the funding of a project in a pre-defined geographical area occurs from the private and the public sector, thus distributing the investment risk between both parties. Thereby the role of the public partner can either be to construct and manage a publicly owned NGA infrastructure or to financially support the construction of a privately owned NGA network.⁵ The advantage of such projects is that the public partner can define the objectives to be attained in terms of public interest, while at the same time benefiting from the private sector's management and operational experience. Yet, when granting state funds public authorities must adhere to the European and national state aid regulations with regard to funding local infrastructures (Gómez-Barroso & Feijóo, 2009, p. 8). In particular, it must be ensured that state aid does neither undermine the incentives of market operators to invest in broadband in the first place nor distort competition between different operators.

In this paper an investment–pricing model for the deployment of basic broadband networks is developed which is applicable to PPP-projects. In particular, a new investment model is suggested to be used to finance deployment over a longer term by enabling both private and public investors to participate in the roll-out of NGA infrastructure. This so-called “long-term risk-sharing concept” (LTRSC) has several notable benefits compared to the traditional regulatory approach, where contract durations are usually restricted and wholesale rates are regulated on a cost basis. Above all, the model enables both private operators and public authorities to share the risk of investing in NGA infrastructure. Thereby the model offers a way for public authorities to achieve a timely and countrywide roll-out of NGA networks, also in areas where NGA investment would otherwise not occur.

The paper is organised as follows: the first section explains the challenges of public–private partnerships for NGA networks. Thereby the requirements to be met in order for state aid to be in line with EU legislation are laid down. Assuming that in certain areas the establishment of a NGA infrastructure will not take place without public financial support it is argued that long-term risk-sharing contracts are an effective approach to address this problem. The main section elaborates the concept of “long-term risk-sharing contracts”. Starting with an outline of requirements to be met by long-term risk-sharing contracts, a pricing model for such contracts is developed. The model uses an example for calculating the price and the duration of such contracts. In the final section it will be shown that the model not only meets the requirements for public funding at the European level, it also meets the objectives of creating an investment-friendly environment for NGA roll-out and ensuring competitive telecom markets under public–private partnerships.

2. Challenges of public–private partnerships for NGA networks

Today's regulatory challenge in an NGA environment is to allow for new and flexible forms of regulations avoiding under-investment. This is because NGA investments bear a very high risk due to the fact that future penetration rates and the willingness to pay for fibre access are uncertain (Fredebeul-Krein & Steingröver, 2009, p. 96).⁶ Given the high level of market and regulatory uncertainty, a deviation of the private and the social investment incentive is likely to be strong (Jerosewski, 2008). This is particularly the case if the NGA investor has to bear the full risk of the investment.⁷

It is therefore no surprise that major telecom companies throughout Europe do not yet see a business case to invest in NGAs outside of new-build sites. They argue that there is limited evidence of demand for NGAs and consumers are not willing to pay significantly more for NGA than for existing broadband. Moreover, technical innovations may allow more to be delivered with current broadband; for example, improvements in the core network. Given that the costs of deployment will be many times higher than current broadband, operators do not yet want to make a decision on whether to invest. First experience with the roll-out of NGA infrastructure demonstrates that, if at all, it takes place in urban areas (European Commission, 2009b, p. 37). Whether it will be spreading to the rest of a country, especially to rural areas, is for the time being more than questionable.

In particular, local authorities from rural areas are worried that they will be left behind should they not be able to participate in the deployment of NGA infrastructure. In order to prevent a ‘digital divide’ between urban and rural areas, public sector intervention is requested. For this purpose, proponents of such an approach call for the identification of areas that will be commercially unattractive and to address this with public sector schemes. One such scheme would be for the local government to fully or partly finance the deployment of an NGA network to be run as a utility.⁸ According to a

⁴ For instance, Ramos, Arcos, and Amuna (2009) have identified in Spain more than 60 publicly supported broadband network deployment projects. Also Nucciarelli, Sadowski, and Achard (2010) and Sadowski, Nucciarelli, and de Rooij (2009) have investigated PPP-projects on broadband access in Italy and the Netherlands.

⁵ For a more detailed discussion of different PPP-models see also Ramos et al. (2009, p. 74), Gómez-Barroso and Feijóo (2010) and Henten and Falch (2008).

⁶ See also Never (2008) and Fijnvandraat (2008).

⁷ It is for this reason that some argue in favour of regulatory holidays (Gans & King, 2004).

⁸ Many other suggestions to speed deployment of NGAs have been made. Public authorities may decide to ease the acquisition process of rights of way, require that network operators coordinate their civil work or share part of their infrastructure. Also public authorities can undertake part of the civil

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