Chapter 17
Broadband Infrastructures as a Common Service and the Role of Local Governments

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ABSTRACT

Broadband infrastructure is widely viewed as a major development driver. In addition, access to broadband networks is considered by many as a common service to be offered to all. This chapter presents interesting national strategies as well as practices and initiatives of municipalities for to broadband and next generation access networks. It, also, presents five scenarios for business models showing the way in which public agencies and the private sector may work together to offer fibre-to-the-home. Finally, it presents a case study of a Greek inter-municipal company emphasizing to the operating environment, the technical and economic factors, the results of financial analysis, and the assessment of sustainability.

INTRODUCTION

This chapter focuses on the role of the Local Governments/Authorities in the development of open access broadband infrastructures and their involvement in the management, operation, maintenance and expansion of the broadband networks. This role is emphasized through the concise presenta-tion of most important national strategies and practices/initiatives of various municipalities. In addition five selected scenarios for business models on municipal broadband infrastructure exploitation are briefly described. A considerable part of this chapter is dedicated to the presentation of a Greek inter-municipal company which has as main task the holding, management, maintenance and expansion of passive equipment of broadband

metropolitan networks installed in 24 participating Greek municipalities.

The term "broadband" means an advanced and innovative environment, from a social and technological view, which consists of fast network connections and appropriate network infrastructure for the development of new applications and services. Broadband in simple terms means a constant connection to the Internet without complicated settings, high speed (10-100 times the conventional connection) for new applications and reliable digital connections with guaranteed and consistent high performance. The provision of broadband services is now a key factor for improving the quality of life, education and economy. According to the i2010 (European Information Society 2010) initiative, broadband access is intended to stimulate the development of services, applications and content while providing a safe speed broadband access to Internet, modern online public services, electronic government (e-government), electronic learning services (e-learning), electronic health services (e-health), dynamic environment for electronic business (e-business), secure information infrastructure, mass availability of broadband access at competitive prices, benchmarking progress and dissemination of good practices.

The importance of broadband infrastructure is internationally confirmed by the activation of various advanced countries, which take initiatives to develop appropriate broadband infrastructure, adapt an alternative way to develop their economy and overcome any "technological blockades" of their citizens (Chlamtac, Gumaste, & Szabo, 2005). Next Generation Networks (NGNs) and Broadband infrastructure in general is a key element in the provisioning of e-government services to all citizens, which are both means and targets for the public sector reform. In addition the access to broadband infrastructure is increasingly recognized as a public good (common) and the local and national governments have the task of ensuring its proper and wide deployment.

Apart from providing basic services to citizens and businesses, a lot of local authorities have embraced the provision of broadband services to the list of their strategies as a means to the development of the local economy. There are various reasons and motives for which the local government decided to invest in broadband, whether to develop networks or provide services. The most important are: promotion of economic development, revenue increase of the municipality, services in remote and rural areas, e-government services, public security services, applications that make efficient routine services provided by municipalities (e.g. GIS) and projection of the municipal authority activities.

In general, a large number of Broadband Metropolitan Area Networks (BMAN) has been developed in municipalities along different parts of the globe, using the fibre optic technology as the "communication avenue" for the next decades. But to fully exploit the optic infrastructure and the benefits offered by broadband services, there is an urgent need for the creation of a group of cooperating partners allowing neutral management of broadband infrastructure, so as to ensure maintenance, expansion and most of all sustainability of these networks. Local governments internationally take a series of initiatives to provide broadband infrastructure, mainly optical fibre to each building. These initiatives address the broadband as a common and aim to ensure the connection of all buildings with fibre (FTTx), regardless of geographical distribution. The general term Fibre-to-the-x (FTTx), describes any architecture that uses fiber optics to replace part or all of the copper or other technologies to the local loop, and even to the buildings or homes (as is the case for FTTB and FTTH respectively). There are several variants such as FTTC: Fibre-to-the-Curb or Fibre-to-the-Cabinet where the optical fibre reaches up to the street cabinet that is near the subscribers' premises (typically approx up to 300m from the premises), FTTB: Fibre-to-the-Building, where the fibre reaches the

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