

Chapter XII

Improving Broadband Access in Rural Areas

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ABSTRACT

The chapter explores the characteristics of rural broadband infrastructure development. Taking the existing installed base into consideration, small rural communities can initiate bottom-up cultivation of broadband infrastructure. Such initiatives are important contributions to overcoming the disparity in broadband access. In effect they aggregate demand by creating a larger total market for suppliers than the individual needs of the actors. The proposal is to use descriptive clusters as a way to reveal the installed base. A set of questions and answers will be defined to reveal the installed base. This can be used to acquire an overview of the types of resources available and the choices that need to be made. The use of descriptive clusters places emphasis on the local context and culture. With a bottom-up strategy, questions must be answered in relation to the local context. The responses and lessons learned may vary from one location to the next, making blueprint implementations impossible.

INTRODUCTION

To the question “Is it possible to improve broadband access in rural areas?” we must reply, “Yes.” However, the question of “How?” must be answered by taking into consideration a combination of policies, strategies, collaboration, and costs involved, not only on a national level but also on the local level. This chapter explores the development of broadband access in a deregulated market and in relation to areas that are least favored.

In countries with a deregulated telecommunications market, the process of developing the broadband infrastructure differs from earlier

infrastructure processes. In a competitive market, telecommunications operators are likely to develop broadband infrastructure in urban areas, while rural areas with lower demand are developed at a much slower rate because of higher costs and insufficient demand. Access and adoption/demand of broadband technology is a ‘chicken or egg’ problem. Before a broadband infrastructure may be adopted, it must be made available, while the access providers require a sufficient level of demand before extending their services. However, an OECD (2004) status report on broadband provision in rural and remote areas suggests that the competitive market works even in these areas.

Why is this true, and what are the characteristics of rural broadband development? This chapter explores the role of the installed base in the development of two rural broadband initiatives in Sogn og Fjordane County, Norway, and discusses how different installed bases resulted in different processes and different infrastructures (see Table 3 for more details).

The chapter is divided into six sections: background, research methodology, key theoretical perspectives, a description of the cases, a discussion, and a conclusion, including practical implications. It explores the development of access to broadband in a rural region¹ in the context of a deregulated market. It also explores factors that influence a bottom-up development of broadband infrastructure in rural areas as opposed to the traditional rollout of infrastructure.

BACKGROUND

At the time the telecommunications market was deregulated, the Norwegian government chose a demand-driven strategy for the development and delivery of broadband Internet access. The competition among telecommunications providers was thought to be sufficient to ensure general access to broadband services. In the context of market-driven development, it is not profitable to roll out broadband to all parts of the country, and the national providers did not plan to develop a universal service. In March 2004, roughly 77% of Norwegian households had access to broadband infrastructure (Teleplan, 2003a), while by the end of 2005 this figure had increased to 88% (Post_og_teletilsynet, 2006a).

The government initiated a program called Høykom² to increase the demand for broadband services, which also applies to rural areas; this program supports local and regional government by partially funding the acquisition of broadband access and the development of broadband services in the public sector. Although this support is welcomed, local and regional governments are still required to provide a substantial part of the investment required, which can sometimes prove

difficult. When information and service providers deliver services requiring broadband capacity, the inhabitants and businesses must have access to a high-speed connection in order to take advantage of such services.

As a result of this situation, a myriad of broadband providers have come into existence. A study completed in 2004 identified 130 broadband providers in Norway (Norsk_Telecom, 2004), and in 2006, a similar study identified 150 providers (Post_og_teletilsynet, 2006b). In 2004, about 10 of the 130 were categorized as national providers, delivering broadband services with national coverage. About 40 were defined as “regional actors,” and the remaining 80 were characterized as local providers serving local communities. The many small local providers were the result of local initiatives. The municipalities participated as owners for about 50 of the providers identified in 2004 (Norsk_Telecom, 2004).

Broadband Access

Under the regulated market, new segments of the telecommunications infrastructure were often developed as a top-down rollout and were designed for specific purposes. These infrastructure segments were more or less uniform, and existed in markets which might be characterized as monopolies or duopolies (OECD, 2004). In Europe, this changed with the deregulation of the telecommunications market in 1998. As a result, the telecommunications infrastructure is now being developed in the context of a competitive market. One drawback of this development is that areas with smaller competitive markets, such as rural and remote areas, may not gain access to broadband infrastructure (Grubestic & Murray, 2002; OECD, 2004; Stanton, 2004). The constantly increasing use of information and communication technology (ICT) and the economic transformation currently underway (Grubestic, 2003) make access to broadband technology essential for people’s lives.

In a competitive market, the basic assumption is that telecommunications operators are less likely to develop broadband infrastructures in rural areas because of higher costs and insufficient demand

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