

## Chapter 106

# Understanding the Dimensions of the Broadband Gap: More than a Penetration Divide

**Maria Rosalia Vicente**  
*University of Oviedo, Spain*

**Ana Jesus Lopez**  
*University of Oviedo, Spain*

### INTRODUCTION

Over the last decade the Internet has brought about significant changes in the economies and societies worldwide. It has changed communication habits, adapting incrementally to the needs of the users of the networks. It has created a world-wide web of knowledge sharing, creativity, and collaboration and has fostered globalization. In this context, new and traditional players are adapting to the challenges through new business models.

Nowadays, the diffusion of broadband is providing the basis for the transition to the Internet of the future. In the next years the development of very high-speed networks will permit the launch of new interactive media and content services. The widespread expansion of low cost wireless broadband

will allow the Internet to become more pervasive (European Commission, 2006).

While the broadband market is developing rapidly worldwide, there are notable signs of a broadband gap both between and within countries. According to Eurostat, in January 2008 broadband penetration rates across Europe varied from 7.6% in Bulgaria to 35.76% in Denmark. Differences are visible not only in terms of penetration rates but also in speeds and prices, among others.

Therefore, the development of an accurate picture of the broadband gap requires taking into account several issues in addition to penetration. Within this context, our paper focuses on the analysis of the European broadband gap by means of multivariate statistical methods, and in particular, factor and cluster analyses.

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## **BACKGROUND**

As the diffusion of Information and Communication Technologies (ICT) has taken place the issue of the digital divide has emerged to occupy a central position on both international and national forums.

According to the OECD (2001) “the term digital divide refers to the gap between individuals, households, businesses, and geographic areas at different socio-economic levels with regard both to their opportunities to access information and communication technologies and to their use of the Internet for a wide variety of activities”.

The digital divide is a complex, multifaceted, and evolving concept. At first the issue of the digital divide was understood in binary terms: the gap between ICT “haves” and “have-nots”. But as the number of Internet users has grown, the digital divide has progressively shifted from an “access” divide to a more complex “use” divide that can be indirectly observed through the diversity and variety of Internet use, and the very heterogeneous abilities of individuals to find information online in an efficient and effective way (Hargittai, 2002; OECD, 2008a).

Broadband has had a very significant effect on this variety of Internet use. High-speed connections have opened up a huge range of interactive applications and services, with more and more user-generated content being uploaded and shared.

Therefore, the broadband gap should not be seen as a mere penetration divide. Above all, it is a divide in the range of services people can access and use. And, more fundamentally, it suggests how future divides in wealth may take shape, as broadband is increasingly determining the ability of individuals, firms, and nations to create future wealth.

## **FRAMEWORK AND CASE OF THE STUDY**

### **Framework**

Over the last years most discussions about broadband policy have focused on the issue of penetration. While “getting connected” is an essential first step, there are many other factors involved in the deployment of broadband. As Flamm et al. (2007) pointed out: only ten years ago, it made sense to ask, who had Internet access and who did not? Now we ask: how fast is your connection? How fast is fast? And what services can you access to?

Then, it becomes clear that a country cannot properly assess its progress or know how to raise its international standing in broadband if it only pays attention to penetration figures (Wallsten, 2008).

Thus, the development of a meaningful framework to analyze the broadband gap should start by recognizing its nature as a general purpose technology: broadband has allowed the launch of a whole bunch of new services in all sectors, which benefits may extend everywhere and to anyone (households, business, etc.). Nonetheless, the appropriability of such benefits depends on at least two factors: the quality of the connections, and individuals’ digital skills. Moreover the diffusion of broadband is affected by the price of access which depends on both the competition in telecommunications market and the investment in this sector. Likewise, infrastructure influences the propensity to use advanced communication technologies and services.

In this context, the measurement of how well a country leverages broadband capabilities requires the evaluation of all these factors, comparing them with other nations.

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