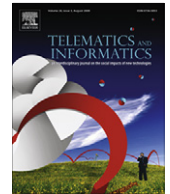




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Demand for broadband access in Greece

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ABSTRACT

As broadband access networks are relatively new in Greece, it is really difficult and involves great risk to determine the potential market for broadband services. The intent of this paper is to add to the discussion of delivering fixed broadband lines to customers in Greece taking into account regulation issues, the strategic movements of the market key players and the commonly admitted inequality of broadband access availability between urban and rural areas. In addition, using time-series analysis and examining the correlations between the number of fixed broadband lines and specific demographic factors for the past three years (mid 2006–mid 2009), an attempt to estimate empirically the forthcoming demand for broadband lines is conducted. Population's income and effective competition are recognized as the strongest determinants of broadband development. In addition, it yields that demand for broadband will continue to have a positive trend for the years to come as people are becoming more and more familiar with new technologies, with youth being the pioneer to the use of innovative services that require broadband access.

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1. Introduction

Broadband access is a vehicle that allows the delivery of an entirely new breed of media services and communications-oriented applications. It is these new services and applications that differentiate broadband from dial-up Internet access and give consumers a reason for subscribing to broadband. Audio and video being the obvious cornerstones of this high-speed revolution, speedy connections coupled with always-on access improve the consumer multimedia experience and change the types of business models that are viable in the interactive marketplace. Moreover, it is commonly accepted that broadband access constitutes a key factor in the effort of economic growth and performance enhancement. Broadband shrinks the world and enables telecommuting for collaborative projects across countries or across the globe and therefore infuses capital into the markets. Especially for developing countries, for every 10 percentage-point increase in high-speed Internet connections there is an increase in economic growth of 1.3 percentage points (World Bank Report, 2009). Likewise communities that had mass-market broadband experienced more rapid growth in employment and in the number of businesses, mainly in technology-intensive sectors, compared to communities without broadband (Europe's Information Society, 2008).

Although broadband is not deemed to be the replacer of traditional communication formats, broadband services cannot be delivered via traditional distribution systems. In order to be able to provide such services to the public, telecommunications companies need to invest substantial amounts of capital expenditure (excavation works for installation of new fiber optic cables within cities and between them, procurement and installation of new generation transmission equipment, provision assurance for new services, etc.). As a consequence, they may feel reluctant to do so when demand for the services

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or even worse the services themselves appear to be a “black box”, as there is no guarantee for the respective investment depreciation. Not being the only factor, this approach can explain to a great degree the diversity in broadband diffusion between countries as it would be impossible to anticipate telecommunications companies to be willing to undertake such risks to the same level (Annemijn et al., 2006). On the other hand, not infrequently, investment is promoted for investment’s sake, rather than its efficacy and this can lead to over investment which can be disastrous especially for companies with deficient economic figures. All these along with the fact that broadband access is prerequisite for diverse advanced and relatively new services (i.e. Voice over Internet Protocol [VoIP] services, very rapid data downloads, streaming IP Television, Video on Demand [VoD], etc.), accentuate the question of forecasting the demand which, though a complex procedure, is of high importance in the decision of a carrier to enter the market. Regarding private funded companies in particular, estimation of market potential is of high necessity since expected profits need to be estimated and as time goes by, hopefully, verified in order to ensure the necessary cash flow for earnings and further investments (Rappoport et al., 1999).

In most nations, provision of telecommunications services was initially performed by public companies (traditional Telecommunications Organizations, TOs) which owned the infrastructure networks. With the need for liberating the market being more and more exigent these companies were to play a significant role in the process of broadband development as they were considered incumbent to supply the infrastructure to new entrants. However, it was soon discovered that this could constitute an impede towards broadband evolution since the incumbent firms in some cases chose to exercise the option to delay and in that way raised the entry barriers for other companies (Alleman and Rappoport, 2007). Recognizing this effect, special actions were taken by regulator authorities in order to enhance the development of infrastructure-based competition as it was considered to be the road towards broadband development (Sohn et al., 2008, Trkman et al., 2008 and Preston et al., 2007).

Focusing on the European Union (EU) and taking into account the dissimilarity between a significant number of variables, perception of the impact of broadband on the national economy and corresponding actions were quite diverse among EU countries across time. Foreseeing this phenomenon and the actual creation of a new market, or better, a market comprising new services, European Commission issued laws and directives to be adopted by member state countries in order to establish the correct framework within which broadband development should take place. Thereafter, local regulation authorities were created in countries aiming to control the market through policies and legislative amendments towards the elimination of monopoly effects and the respective induction of new investments in the Information and Communication Technology (ICT) area.

This paper explores the Greek telecommunications market. It endeavors to provide an empirical estimation of the demand for broadband access lines based on a time-series analysis and taking into account that the era of broadband in Greece is still on an early stage in particular with regard to the short history of real competitive environment. It uses data by the National Regulator Authority and the companies that offer broadband services regarding the diffusion of sites (exchange offices) with broadband availability and the number of the corresponding subscribers focusing on how this number fluctuated during the period mid 2006–mid 2009. The only distinction between subscribers is that of having chosen the incumbent or another company (so called alternative operator) for broadband access. Integrated Services Digital Network (ISDN) is not considered as broadband connection therefore data concern exclusively Asymmetric Digital Subscriber Lines (ADSL) connections, both symmetric and asymmetric, without further analysis to different speed packages as companies offer a variety of choice for download/upload speed. For the sake of uniformity in data analysis, all DSL connections are considered as broadband independent of the respective download/upload speed. In addition, data are examined in separate for the 13 territories in which Greece is administratively divided in order to observe possible inequalities between different geographic areas and perform correlations with external variables such as income, age, level of education of each territory’s population according to data by the National Statistic Service and the Observatory for the Greek Information Society. The 13 territories examined are shown below:

	Abbr.	Description
1	EMac & Thr	Eastern Macedonia & Thrace
2	Att	Attica
3	NA	North Aegean Islands
4	WGr	Western Greece
5	WMac	Western Macedonia
6	Epir	Epirus
7	Thes	Thessaly
8	Ion	Ionian Islands
9	CMac	Central Macedonia
10	Cre	Crete
11	SA	South Aegean Islands
12	Pel	Peloponnesus
13	CGr	Central Greece

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