

# Chapter XLVIII

## Impact of Broadband VoIP on Telecoms: A Cross-Country Analysis

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### ABSTRACT

*VoIP is a technology that has received much attention over the past few years. Speculations are rampant that it will be “the technology” for telecommunications of the future, as broadband gains mass market penetration in every nation. It holds the promise of ubiquity and eliminates the need for a separate infrastructure for telecommunications. In this chapter, we have undertaken a cross country analysis of two economies, Germany and India, at varied levels of broadband voice over internet protocol (VoIP) diffusion, to examine the future potential of this technology in the respective nations and their telecommunications industries. Our brief analysis revealed some valuable insights regarding the impact of VoIP in both economies which may prove to be useful for other economies and telecommunication industries.*

### INTRODUCTION

Voice over internet protocol (VoIP) is touted to be a technology that has the potential to change the telecommunications industry across the globe. The basic infrastructure for this technology is the diffusion of broadband into the mass market. In developed nations with high broadband diffusion, VoIP holds the promise of ubiquitous communication, eliminating the need to maintain a separate telecommunications infrastructure. Lately, some reports also seem to suggest that

developing economies such as Nigeria are trying to “leap frog” into new technologies, eliminating the need for building a new infrastructure for telecommunications (Olarunda & Olarunda, 2006). Speculations continue to emerge that VoIP will be an inexpensive and pervasive technology that will eventually eliminate the need for a separate telecommunications infrastructure (Kouroupas, 2006). However, research on the impact of VoIP in developed and developing economies is still emerging and fragmented. This chapter proposes

to address this gap in research by taking a closer look at two economies: Germany and India.

Germany is a developed nation with a strong telecommunication infrastructure. The telecommunications market is almost completely deregulated (some exceptions such as the recent VDSL legislation still exist) and competitive. Consumer demand and uptake of broadband Internet services is high within the nation with OECD (2005) statistics indicating 10.7 million DSL subscribers as of December 2005, which translates into almost one-third of all households. The rising demand for cheaper communications and the ubiquity offered by the VoIP solution has driven its growth to mature stages of acceptance. Competition continues to rise among the existing 80 plus providers for broadband VoIP services (GerVoip, 2006).

Research also indicates that the overall European telecommunications market is more vulnerable to VoIP providers because of per minute tariffs (Richardson, 2005). Conversely, the developing nation of India has had a disparate telecommunication infrastructure. Although consumer demand for Internet services is rising, broadband uptake is low and fragmented within the nation. While Search Agency (2006) reported that in March 2005, India had a total of 815 thousand broadband households; TRAI (2006) reported a total of 7.5 million subscribers for broadband in the country, as of November 2005. The telecommunications, although privatized, are still regulated strictly via the Telecom Regulatory Authority of India (TRAI, 2006). Indirectly, the market with varied service providers is still dominated by the older monopoly telecom companies which hold the high market share.

Within the nation, the rural areas which house a high volume of population often do not have a telecommunications infrastructure that lends itself to per household access of broadband. Urban areas are densely populated by young households that cannot afford to own a PC or broadband connection per household. The initiatives of the government to connect the whole nation have resulted in communication via public telephone booths and lately cybercafés across the nation. The lack of infrastructure in rural areas is currently be-

ing addressed via availability of low cost mobile communications. In this climate, in an attempt to address the disparities with the promise of the ubiquitous communications that VoIP offers, the government of India is moving towards a unified licensing for the use of VoIP (Hindustan Times, 2006). As a result, there are approximately 70 VoIP providers in India who are competing in various regions, but are still regulated by TRAI which restricts the usage of VoIP for domestic calls.

This chapter's mission is to present a preliminary analysis on the possible impact of VoIP in the two countries. The chapter is structured as follows. We begin the next section by presenting an overview of VoIP, placing it into the context of both the nations concerned. Subsequently, a section on broadband is presented as a facilitator for VoIP. Drawing from these sections, a brief discussion follows which analyzes the impact of VoIP on the telecommunications sector in both nations. Finally, an outlook for both economies is presented, covering the future of VoIP and its impact on telecommunications and on the industry. We expect that this chapter will provide an opportunity for both economies to learn from each other, while appreciating the economy specific factors. Conversely, we also expect the chapter to be of relevance to other developed/developing economies, policy makers, forums, telecom industries, vendors of equipment, and academics as it reveals unique and common factors that are applicable globally.

### **VOIP: A SYNOPSIS**

VoIP is an IP based telephony term for a set of facilities that are used to manage the delivery of voice over the Internet (Wallingford, 2005). It involves sending voice based information in digitized format in discrete packets rather than using the traditional circuit committed protocols as in the case of public switched telephone networks (PSTN). As Ledford (2006, p. 4) explains, "in simple terms, it is a way to have a telephone conversation using the Internet, rather than a traditional telephone line." For a basic telephone call, the phone is connected to a jack in the wall which connects to the

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