Mobile Communications in Mexico in the Latin American Context

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INTRODUCTION

The growth of the mobile network worldwide since the late 1990s has exceeded any expectations. According to the International Telecommunications Union (ITU), there are currently 6.8 billion mobile-cellular subscriptions in the world, which closely approaches the world population of 7.1 billion (ITU, 2013). In Latin America, mobile telephony has shown a higher growth rate than the world average; for the first quarter of 2013 it reached 116 subscriptions per 100 inhabitants. Almost all countries in the region have a penetration above 100 subscriptions per 100 inhabitants, with outstanding rates in Chile, Uruguay and El Salvador of 155, 144 and 143, respectively (Wireless Intelligence, 2013).

Moreover, the expansion of the mobile network has a pro-poor tendency that has provided access to telecom services for those previously excluded from this market. Innovative business models such as prepaid, regulatory policies such as calling party pays and strategies used by the poor such as shared use of handsets, texting, ring-call-back and micro-financing of service vendors are some of the mechanisms that have made mobile services affordable to the poor.

Today, in the age of the Internet and the diffusion of mobile broadband, we are witnessing a new kind of transformation in the lives of the poor. Through its ability to carry large volumes of data and deliver advanced applications that have the potential of enhancing benefits in other sectors such as education, health, government and citizen participation, broadband embodies the promises of the information revolution. Mobile broadband adoption is replicating at even faster pace than that of mobile telephony, which promises to reach higher levels of network coverage and lower prices of connection and use in a fairly short period compared with fixed broadband. Moreover, mobile broadband quality is growing at faster pace than fixed; 4G technologies may overpass the penetration and quality of fixed broadband in the short run. If this is to be true, mobile broadband will play a significant role in making available the benefits of Internet to a great majority of the population in Latin America; it will serve as the primary mean of democratizing access and use of ICT's.

This article will identify the existing literature on mobile telephony as well as mobile broadband in developing countries followed by a general overview of the state of the mobile sector in Mexico in the context of the Latin America region. It will identify the current challenges policies face to promote a democratization of the Internet in the region.

Pioneering scholars in the study of mobile impact are: PhD. Robert Jensen (Jensen, 2007) at University of California Los Angeles and PhD. Leonard Waverman (Roller & Waverman, 2001) at McMaster University. *Current leading scholars* are PhD. Jonathan Donner (Donner, 2008) at Microsoft Research India, Richard Duncombe (Duncombe, 2011) at Manchester University, and Latin American-based research network *Dialogo Regional sobre la Sociedad de la Información*, DIRSI (Jordán, Galperin and Peres, 2013).

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OVERVIEW: MOBILE SERVICES AND THE UNDERSERVED POPULATION

Given the dramatic uptake of mobile voice services in the worldwide population, students of ICT found a strong interest in understanding the causes and impacts of this adoption in developing countries. A significant explanatory variable identified by studies were market mechanisms such as pre-paid and calling party pays have significantly contributed to mobile expansion in developing countries (Hodge, 2005; Mariscal & Bonina, 2006; Stork, Esselaar, & Ndiwalana, 2006). A key variable identified with network deployment is competition; the higher degree of competition in the mobile sector relative to the fixed sector played an important role in the growth of mobiles around the world (Petrazzini & Clark, 1996; Wallsten, 2001). This is a result, to a significant degree, of the fact that mobile services were initiated in a more liberalized market than fixed services.

Also, the institutional factor received increasing attention; the efficiency of regulatory institutions became a key factor to explain network deployment. The process by which institutions have an impact on telecommunications development is through the use of norms, rules and contracts to provide incentives that seek to align the firms' decisions to the more general objectives of society (public interest). Thus, the possibilities of success of regulatory policies are crucially dependent on the effectiveness of institutions where the regulatory process takes place. Heinz & Zelner (2001) as well as Levy & Spiller (1996) suggest that differences in the provision of telecommunications services arise from institutional frameworks that condition investment through the provision of property rights as well as credible and effective governance. In particular, an effective regulatory institution delivers policies that are transparent, predictable and credible (Noll, 1999).

Econometric studies construct indexes that try to measure these characteristics through specific country variables and evaluate their impact on network deployment (Gutiérrez & Berg, 2000; Gutiérrez, 2003; Jordana & Sancho, 1999; Ros, 1999). The results of these studies empirically support the basic intuition; a regulatory agency that has autonomy and independence, accountability, clarity of roles and objectives as well as transparency and participation leads to an effective regulation.

Following the institutional perspective but analyzing the more broad political systems, Andonova (2006) compares mobile deployment with Internet penetration in developing countries through an econometric exercise that includes variables that try to capture the quality of institutional factors such as political rights and liberties. Internet and fixed penetration result highly correlated with institutional efficiency which suggests that the digital divide is the result of an institutional divide. However, she finds that mobile deployment is less dependent on a solid institutional environment than is Internet infrastructure. The rationale behind this is that mobile technologies contain less site-specific assets; it is built on cheaper, easily re-deployable infrastructure than fixed or Internet technology. Thus, mobile telephony has expanded in less friendly institutional environments that generally prevail in developing countries.

On another line of inquiry, studies that empirically document ICTs contributions to economic and social development are multidisciplinary and vary across segments of the ICTs market as well as across regions (Meijers, 2004; Madden & Savage, 1998; Roller & Waverman, 2001; Waverman, Meschi, & Fuss, 2005). In terms of the impact of mobile diffusion, studies interested in the development component of ICTs (Information Communications Technologies for Development; ICT4D) seek to identify how mobiles may contribute to economic growth as well as to poverty reduction. The conception of ICT for development perceives the role of these technologies as a disruptive innovation and a revolutionary step in the history of mankind, which Manuel Castells has called the "Age of Information" (Unwin, 2009).

One of the main reasons behind this optimism is the possibility of a quantum leap in development through the use of technologies such as the