

THE IMPACT OF REFORMS IN THE TELECOMMUNICATION SECTOR AND ITS EFFECTS ON LATIN AMERICA

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ABSTRACT

Less developing countries (LDCs) are located on the wrong side of the “digital gap” and confront an enormous challenge from the network revolution which is unfolding. To take advantage of this revolution, LDCs must attract foreign direct investments (FDIs) to develop the necessary infrastructure in the telecommunication-computer realm and acquire the technological know-how embedded in them. Deregulation and privatization are important incentives to the latter. In Latin America the proliferation of regional and multilateral agreements with integration as a purpose has generated a trade as an outcome and therefore, a stimulus to economic growth. Information technology is a relevant parameter in this endeavor.

Keywords: Latin America, LDCs, telecommunications, privatization, convergence, e-commerce, digital gap.

INTRODUCTION

The majority population of the earth, about five billion people, live in Less Developing Countries (LDCs) and confront an enormous challenge from the networking revolution that is unfolding. These countries located on the wrong side of the “digital gap” could become victims or beneficiaries of the new changes as a sequel to the technological exigencies stimulated by the change itself (16). The location within the latter is based on the implementation of domestic and supranational policies and programs that allow them to develop the necessary infrastructure in the telecommunication-computing realm to attract the necessary foreign direct investments (FDIs) and technological “know-how” that is embedded. This allows them to establish competitive advantage. The FDIs within Asociacion Latino Americana De Integracion (ALADI) country members for the year 1998 were about \$64.5 billion. Approximately 50% of the FDIs total \$32 billion had converged in Brazil. This is the outcome of new policies and political reforms concerning deregulation, an aperture to foraneus investment, and the privatization of state owned enterprise in the sectors of telecommunications, and electrical power generation and distribution (11).

One of the circumstances causing great impact in the realm of computing is the convergence that is taking place with computing and telecommunications. Firms perceive the capabilities of combining the hegemony of computer based information and telecommunications networks (2) and the rapid evolution of the Internet and Intranet extant play a preponderant role in this new array. It is emphasized that the drivers of the information revolution are cost, computing power, and convergence (1). These parameters are inter-related to computing infrastructure, new communication technology and governmental policies that will make the old telecommunication model, a monopoly, obsolete, and therefore, a new paradigm will evolve that makes this technology accessible to everyone, specially to the inhabitants of LDCs through a new system that promotes and encourages competition within the private sector.

Within this technological revolution, changes among the telecommunication sectors, the economy and society are present with some feedback mechanism that could be easily identified with nine main areas, six of them related to supply and demand and the other three within the

networking sector itself (16). Found in the supply-demand mechanism are the following: 1) cost of technology, volume and innovation effects, 2) system development cost, risk and time scale effects, 3) user expectations, 4) competitive forces, 5) industry restructuring effects and the behavior of financial markets, and 6) e-commerce and other network effects. Within the networking sector one finds 1) standardization, 2) liberalization and re-regulation, and 3) confidence and risk assessment effects. According to this study, the positive feedback mechanism embedded in the networking revolution could lead to a very wide range of both positive and negative outcomes for LDCs economies and societies. Regarding the economy, the flow of information has been present as an integral part of activities related to production, trade, and investments among others. Therefore, historically a strong correlation does exist among economic and networking development. Also the latter plays a very important role in the development of modern social and institutional structures. The report concurs with the research literature concerning the development of the telecommunication sector that has evolved very rapidly from a well defined state-sanctioned monopoly in the 1980s to a great majority acceptance of the benefits of liberalization and competition in the 1990s (16).

Purpose of the Paper

The purpose of this paper is to demonstrate the effect of changes, mainly deregulation and privatization, in the telecommunication sector and its impact on Latin America. The Peruvian reforms within this realm help to prove the premise.

BACKGROUND

The decade of the 90s represents crucial changes in the structure of the telecommunication sector in Latin America and the Caribbean. Privatization and liberalization schemes dramatically change the patterns of ownership, the number of service providers, the source of financing, and primarily the regulatory environment. The source of financing, and foreign capitals plays a very important role. The telecommunications companies all over the world started as private enterprises, but by the 70s few still remained under those ownerships. Within them could be mentioned the United States, Spain and the Philippines. In most of the other countries telecommunication services were provided by monopolistic government-owned entities. This concurs with the research literature stating that the rapid change of the technology, the mismanagement of state-owned enterprise among other factors erode the monopolies and clear the way to a privatization trend all over the world (8).

In Latin America the decade of the 80s was characterized by the lack of hard currency and hard economic times. Several governments look at privatization as a process to raise money on hard currency and also a way to acquire new technologies, know-how and/or upgrade and expand the existing networks. All over the region the primary role of the government changed from owner of the monopoly to regulator. Chile, Argentina, Mexico, and Venezuela were the first to start restructuring their telecommunication realm and today the list of countries that have adopted and implemented reform includes but is not limited to Bolivia, Brazil, Colombia, Ecuador, El Salvador, Honduras, Panama and Peru (8).

It is necessary to mention that privatized telecommunications operators enjoy the status of quasi-monopoly entities in the basic service sector that includes the long-distance segment. After privatization the new enterprise searched for new business opportunities, such as in Chile

annual investment in public telecommunications increased from \$109 million in 1988 to \$575 million in 1994. The number of main lines increased twofold to 1.5 million between 1989 and 1994 (8). Almost all Latin American Countries have participated in the World Trade Organization (WTO) Negotiations on Basic Telecommunications and most of them have made commitments to further liberalize their telecommunications service industry to include voice telephone, mobile services, and satellite services among others (8).

In Latin America, regional as well as multilateral integration schemes have a predominant role within integration agreements. Good representation of the above includes but is not limited to MERCOSUR: Brazil, Argentina, Uruguay, and Paraguay. The Andean Community (AC) composed of Bolivia, Ecuador, Colombia, Peru, and Venezuela and the Group of Three: Colombia, Mexico, and Venezuela. These organizations have the intent to institute the required infrastructure that, in the future, may evolve into a political union (9).

The proliferation of these regional and multilateral agreements with integration as a purpose have and will continue to generate a high flow of goods, services, and investments among these countries. From the economic perspective, the outcome is trade and, therefore stimulus to economic growth. Information technology that is embedded in the productivity equation is a relevant parameter in this endeavor (6). The significance of business transactions using electronic means to acquire a new high-performance business model is present and the Internet and e-commerce play a preponderant role in this new and changing e-commerce world. E-commerce and e-business describe new models and new strategies in the business world that are generating a new industrial revolution (15).

The growth of e-commerce in the 1990s has occurred primarily by virtue of improvement in underlying technologies (4). Nevertheless, there are other factors associated with the developments, including, but not limited to, the role and responsibilities of the public and private sectors in driving and sustaining infrastructure development. Currently businesses that transact on the Internet have had relevant cost reduction and an increase in revenues. A high correlation does exist between the growth of benefit and the increase of businesses performing such transactions within the network (14). E-commerce has shown a rapid development in Latin America. Brazil reached 4 million users in 1999. This represents 50% of the interconnected population - Mexico with 18%, Argentina 12% and Chile 4%. It is necessary to emphasize the fact that 80% of electronic commerce is realized within six realms: supermarkets, books, hardware and software, electronic equipment, music, and financial services (13). In March 2000, the number of users on the Internet was approximately 304 million. The United States of America and Canada have 45%, Europe 27%, The Asia-Pacific region 23%, and Africa and the Middle East 1.5%. Latin America and the Caribbean hold 8% of the world population, but only 3.5% of Internet users and less than 1% of the global e-commerce. Although in the year 1999, a noticeable increase in Internet host computers was extant. The growth rate has been the highest in the world, and the number of users is 14 fold within the 1995 to 1999 period (10). The literature concurs that computer information systems are a function of various parameters and among them the ones related to communication and diffusion could be identified as follows: cost of telephone service, and the structure and behavior of the market that compose the Internet services. There are at least five relevant parameters in the market of information transmission that will be identifiable and which contribute to shape the Internet, 1) the carriers, 2) the access providers, 3) the service providers, 4) the content providers and 5) the end users. These schemes generate conflict and competition. International firms cover the first two levels; meanwhile the rest are national enterprises within country members of regional or multilateral agreements (13).

Due to the inception of e-commerce, born global, there is a need for a globally interoperable policy solution that will include the global electronic market place and the digital infrastructure in which it develops. Because of broad principles on which electronic commerce should be based, a high degree of consensus rather than the areas of disagreement are present. Also, national and regional law, and policies and approaches will be with us for the foreseeable future, even in e-commerce (3). The struggle to exercise control over e-commerce is underway. Therefore, governments should be prepared to deal with issues such as monopoly, regulation, and revenue generation among others within a global information framework and with very high economic, political and social factors at stake (7).

Another 'gap' present in Latin America that has a great repercussion on the digital economy, is the one that could be defined by its components: socio-economics, and technology. Further, there is an uneven distribution of wealth between countries, and within them. A large price differential regarding telecommunications cost and coverage exists. Due to economic and social factors in Latin America the role of regional governments to oversight this new arrangement is not only preponderant but could be controversial. Elements such as the amount of control to be adopted by the government, regulations, and privatization will be relevant to the development of the knowledge-based society within the legal framework same as the education and exposure of the population to the new virtual society. Pertaining to the technology realm, a component that will exert large influence is the volatility of the communication sector due to the availability of new technology and changes thereof (6).

The impact of Peru's telecommunications reforms deserves special attention due to the fact that it depicts the trend of privatization of this sector in Latin America. In 1993, the Peruvian government started a major reform in this sector. The program was supported by two bank loans: the Privatization Adjustment Loan and the Privatization Technical Assistance. Both loans were approved in 1993. Two laws enacted in 1993 and 1994 provided the legal avenue for the privatization of *Compania Peruana de Telefonos (CPT)* and *Empresa Nacional de Telefonos (ENTEL)*, both state-owned entities with the establishment of an independent regulator *OSIPTEL*. The Peruvian government agrees to grant the new foreign operator, *Telefonos of Spain*, temporary exclusivity of four years for local, long-distance, and international telephony. The foreign company agrees to expand services in rural areas and to minimize tariffs under a price cap regime. Within this new framework the mobile telephone market was partially liberalized right away and now is fully competitive (with three current licensees, which included *Bell South of the United States*). When the exclusivity period ended in 1998, new operators entered the telephony market, and 172 companies are currently active. Private investment in rural areas is now promoted and partially subsidized by a one percent tax on phone bills (17). (See Table 1, Figure 1).

The governments of the region have accomplished basic strides so the mass population will have access to the Internet. Peru has created *The Peruvian Scientific Network*, known by its Spanish abbreviation, *RCP*. The network is composed of 1000 public centers that provide service to 40% of the network. In Argentina, the program argentina@internet.todos has approximately 1000 tele-centers located in low income and remote areas. Brazilian commercial banks are offering free access to the Internet, and Costa Rica is one the first country in the world that provides free e-mail to its citizens through state agencies. In the last decade, the telecommunication sector in Latin America has grown enormously. Privatization and the development of new technologies have performed a critical role in this process. During the decade of the 90s, 2/3 of the countries of the region totally or partially privatized the

telecommunication domain. Uruguay and Costa Rica are examples of the fact that privatization is not sine qua non condition to modernize or acquire new technology - competition is. At the same time, the arrival of new technologies such as cellular telephones, and cable television has generated substantial changes in the sector. During 1990, 100,000 cellular telephones were in use; 3.5 million during 1995, increasing to 38 million in 1999. The case of Venezuela and Paraguay deserves special attention due to the fact that there are more cell phones than conventional ones (10).

In Latin America only 1/3 of all homes have telephone service. The growth and coverture of the telecommunication sector are functions of the regulatory framework in which they are developed, as well as the influence of the responsible regulatory agency. In many cases, monopolies have been created. During the '80s, seven telephone lines in the region - Argentina 12, Chile 10, and Mexico 50 each (per 100), served 100 people and repairs took 15 days. The last decade Argentina and Chile users ratio was increased to 22%. Moreover, Uruguay was increased to 27 for every 100. Other good indicators of improvement in the sector are the digitalization of the telephone systems, an increase in the number of public telephones, and the improvement of repair time (10).

Social factors have to be taken in consideration regarding the infrastructure of telecommunications in Latin America. Twenty-five percent of the region's population lives on an income of \$1 per day. The access to the Internet services in absolute terms is less than the U.S. although it is prohibited to the great majority of the population due to poverty. Government involvement could provide a solution to the problem subsidizing services and the necessary hardware and software (13).

CONCLUSION

The privatization and deregulation of the communication sector act as an incentive to bring to the LDCs foreign direct investments that not only provide the financing required to develop the industry, but also provide the know-how embedded. It is critical to accentuate the fact that to attract these investments a well-defined legal and political framework must be in place. The only way that these countries located on the wrong side of the 'digital gap' could be evolved within the technology environment rests on foreign sources of funding. At the same time, the developed countries (DCs) could augment their markets investing their financial resources and technology in Latin America. The Peruvian example depicts the importance of privatization versus a state monopoly in the telecommunication industry. Figure 1 is self-explanatory regarding the higher growth within the most important parameters in the telecommunication industry. Connection fees in 1993 were \$1500- after privatization in 1998, \$150, a savings of 90%. The average waiting time for connection has been reduced from 118 months to 45 days. These statistics indicate that privatization not only increased the amount of investments and the growth of many parameters within the telecommunications realm, but also allows the mass population to have access to the technology. Convergence taking place with computing and telecommunication demonstrates the importance of the development of this sector and the socioeconomic impact on the economic perspective, and to the stimulus of economic growth. In Latin America different treaties, covenants, and multilateral agreements taking place as part of regional integration schemes have as a goal to evolve trading partners into a political union and therefore, generate competitive advantage. Information technology plays an integral role in enabling this to happen.

Keeping in mind that twenty-five percent of the population of Latin America lives on an income of \$1/day, it is vital for regional governments acting by themselves or within the context of regional integration schemes to support this investment and new technologies. The governments of LDCs should be responsible for the utilization of their political power to create the necessary mechanisms so the mass population will be able to have access to the benefits provided by technology, and be a constituent of the knowledge-based society.

TABLE 1
The Impacts of Peru's Telecommunications Reform

	<u>1993</u>	<u>1998</u>	<u>%</u>
SECTOR INVESTMENT (Million \$)	28	2099	98.67%
FIXED LINES/PENETRATION (PER 100)	660000/2.9	1850000/7.6	
MOBILE PHONES LINES/PENETRATION (PER 100)	50000/0.2	600000/2.4	
PUBLIC PHONES	8000	50000	84.00%
TOWNS WITH PHONE SERVICE	1450	3000	51.67%
POOR HOUSEHOLDS WITH PHONE (%)	1	21	95.24%
AVERAGE WAITING TIME FOR CONNECTION	118 months	45 days	
CONNECTION FEE	\$1,500	\$150	-90.00%

Source: World Bank Group (WBG) 2001

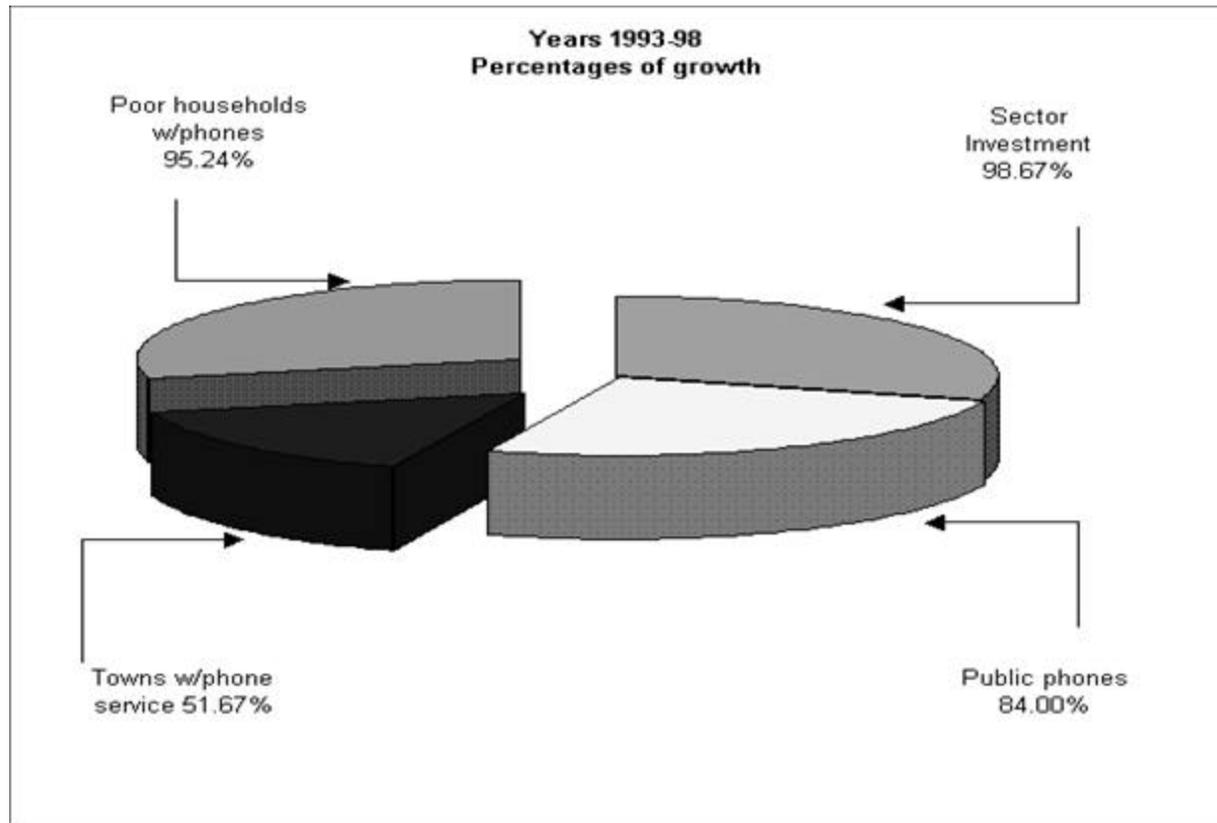


FIGURE 1

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