AN INDEX OF TELECOMMUNICATION REGULATORY FRAMEWORKS IN THE CONTEXT OF PRIVATIZATION AND COMPETITION REFORM

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1. Introduction

In the last two decades, economists have given more attention to institutional factors as part of the explanation for differences in countries' economic development. Institutional economics has a long tradition but not until recently has it been incorporated formally into theoretical economic models and empirical research[1].

Analysis of how the institutional environment affects economic growth rate has been expanded to include analysis of the impact of institutional features on investment, education and so on[2]. The main indicators for capturing the institutional environment have been, among others, the Polity III index, the Gastil Liberty index and indexes developed by specialized country-risk agencies like *ICRG* (International Country Risk Guide), *Institutional Investors* and *Euromoney*. The importance of institutional factors is acknowledged in studies by international lending agencies like the World Bank and the Inter-American Development Bank (IADB)[3].

As the world economy becomes more integrated in the markets for goods, services and capital, recognition of the need for expanded and modernized telecommunications services has pervaded the plans and policies[4] of most Latin American countries. Telecommunications reforms have been implemented in almost all the countries in the region, although the degree or depth of the reform has been different across countries.

This study examines the trends in the telecommunications sector in Latin America and the Caribbean. I consider the evolution of the privatization process in the main telecommunications services (local and long distance telephony), the liberalization of those markets, and, more importantly, the efforts to establish strong regulatory frameworks in the region. Among the overall results reported, fifteen Latin American and Caribbean countries have privatized completely or partially their former public telecommunications operators (PTOs). With regard to liberalization reform, most countries in the region still have monopoly providers of telecom services, but their markets are due to open with the end of exclusivity periods. Lastly, efforts toward building a sound regulatory environment for the telecommunications sector have been fruitful. The regulatory framework index shows that almost all countries studied have progressed considerably in this area.

2. Context of Latin American Telecommunications Reform

To many observers of the Latin America economy, the 1980s were the "lost decade". The debt crisis that hit almost all the countries in the region brought lower or negative economic growth rates, an increase in poverty, a broader gap in the distribution of income, and higher levels

[1] Specifically, growth models have made extensive use of institutional and political factors. See Barro (1996), Knack and Keefer (1995) and Keefer and Knack (1997) and Alesina et al. (1996), among others.

[2] See, for example, Henizs and Zelner (1998), Mauro (1998) and Campos and Nugent (1998).

[3] For example, the World Bank has used the *ICRG* index to measure institutional developments in Latin American countries. See Burki and Perry (1998) for more details.

[4] See Hudson (1997).

of unemployment. Many blamed the inward-looking development model that most countries in the region had followed for more than four decades. To cope with all these problems, in the mid-1980s, international organizations like the World Bank, Inter-American Development Bank and the International Monetary Fund (IMF) demanded that governments in the region undertake broad reforms. Some called this set of structural policies the "Washington Consensus[5]."

Hence, from the mid-1980s, most of the governments embarked on implementing reforms in many areas. In trade policy, they lowered tariffs and eliminated controls on imports. In the financial arena, they liberalized financial markets. With regard to tax policy, there was a rationalization of the number and structure of taxes. In the area of labor legislation, labor markets were made more flexible; in privatization reform, most governments began divesting assets in some sectors[6], leaving production decisions to private investors.

Although countries embarked on reform at different times, it is clear that overall economic conditions were not ideal. There were low growth economic rates, suggesting low demand for telecommunications. However, the region was experiencing greater levels of population density and urbanization, which reduce the cost of deploying telecom networks. Williamson (1998) states that the New Institutional Economics has two dimensions: the macro level consists of formal and informal rules (customs, constitutions, laws, etc), while the micro level deals with the institutions of governance referred to as polity. Latin American countries at the time of the telecommunications reforms were (and still are) showing a steady increase in both dimensions.

In Table 2, two measures of the above structural reform for Latin American countries constructed by Latin American researchers are given: the structural policy index and the general reform index[7]. After the first index, the average indicator shows that the region expanded the reform index by about 37%, while by the second one, the increase was close to 28% between 1986/90 and 1991/95. Yet the economic growth performance of the region has been quite disappointing. In the last second half of the 1980s, the region suffered a negative growth in the income per capita; in the first half of the 1990s that growth was barely above 1%. Furthermore, while it is clear that the region deepened its integration into the world trade flow of goods, it is also apparent that the service sector as a percentage of GDP slightly declined in the first five years of the 1990s compared to the last second half of the 1980s.

Despite poor economic performance, the region was a winner at the macro level of polity and in the way international analysts perceived the region. The well-known indexes *ICRG*, *Euromoney* and *Institutional Investors*, which may capture the institutional factors affecting the region, show increases that range from 11 to 27% when comparing the second half of the 1980s with the first half of the 1990s. The region, then, progressed remarkably in this regard. Another important indicator is related to the political headway Latin America has made in the last fifteen years. The Govtype index[8] shows the political stability or level of democratization. As shown in

[5] See Williamson (1990).

[6] For a more detailed analysis of Latin America's structural reforms, see IADB (1997), Lora and Barrera (1997), Lora (1998), Morley et al. (1999), Easterly et al. (1997), and Fernandez and Montiel (1997).

[7] The first index was constructed by Lora (1998). Morley et al. (1999) elaborated the second one. More details are presented in Appendix A.

[8] For more information about the way this index was constructed and the information contained in the Polity III database, see Appendix A.

Table 2, in the first half of the 1990s, the governments of the region leaned toward more democratic processes reflecting a broader social consensus[9].

In the telecommunications sector, the region as a whole achieved good results. In both mobile and fixed telephony, progress is apparent. The indicator of main phone lines per 100 inhabitants (or teledensity) increased from 7 lines to almost 10 lines. Although this is still far below the level of developed countries, the Latin American rate is now twice that of Asia (without Japan, 5.1 in teledensity) and about five times the African average in teledensity (2.0 in 1997).

Table 1: Economic, Political and Demographic Indicators in Latin America

Latin and Caribbean Countries*	**1986-1990**	**1991-1995**	**1996-1997**
GDP per Capita (US$1990)	2,630	2,694	2,989
Annual Growth Rate of GDP per capita	-.16	1.09	2.86
VSERGDP	51.01	50.87	51.00
TRADE	61.16	72.36	66.89
Democracy-GOVTYPE	1.27	1.93	NA
Euromoney/*	32.98	41.77	49.47
Institutional Investor B/	22.94	27.18	33.33
ICRG	2.28	2.51	NA
Structural Policy Index	.425	.581	NA
General Reform Index	.614	.788	NA
Economic Freedom Index	4.61	5.89	NA
DENSITY	40.45	45.18	48.10
URBANGDP	60.28	62.79	63.12
Telecommunications Regulatory Framework Index*/	0.33	0.47	0.74
Cellular Subscribers per 100 inhabitants	0.01	0.31	1.14
Main Lines per 100 inhabitants*/ **TELEDENSITY**	7.07	9.74	12.3

Source: See Appendix A for description of the variables.

*/ Includes 24 countries: Argentina, the Bahamas, Barbados, Belize, Bolivia, Brazil, Chile, Colombia, Costa Rica, the Dominican Republic, Ecuador, El Salvador, Guatemala, Guyana, Honduras, Jamaica, Mexico, Nicaragua, Panama, Paraguay, Peru, Trinidad and Tobago, Uruguay and Venezuela.

B/ Includes 20 countries

[9] For more about social and economic development in Latin America, see Thorp (1998).

More recently (1996-97), the performance of some of the above indicators has improved. Two important demand factors for main phone lines are the GDP per capita, which has increased by almost 3%, and the added value of the service sector as a proportion of the GDP, which has rebounded to the average level of 1985-1990. In addition, investors' indicators in *Euromoney* and *Institutional* have kept improving, increasing between 18.4% and 22.6% when comparing to the first half of 1990s. The telecommunications indicators increased greatly, especially the total cellular phones per 100 inhabitants. However, the 1998 exchange rate crisis of Brazil's currency (a depreciation of Brazilian currency by 40%) reminds us that the region seems to be extremely vulnerable to global market instability.

Thus, it seems that the overall progress of the region has been mixed. More recent economic and financial developments that followed the Mexican crisis of 1995 and Brazil's of 1998 threaten and blur the future of the region. Many factors keep Latin America's expectations low. A leading world economist has said, "That [Washington] consensus all too often confused means with ends: it took privatization and trade liberalization as ends in themselves, rather than as means to more sustainable, equitable, and democratic growth…. It focused too much on price stability, rather than growth and the stability of output. It failed to recognize that strengthening financial institutions is every bit as important as controlling budget deficits and increasing the money supply. It focused on privatization, but paid too little attention to the institutional infrastructure that is required to make markets work, and especially to the importance of competition" (Stiglitz, 1998b, p.1).

3. Ownership Reform

Using more comprehensive quantitative analysis, I now explore the determinants of the deployment of main phone lines per 100 inhabitants and the efficiency in the sector. Here, the focus is on factors influencing reform and the creation of a regulatory reform index.

With increasing integration of Latin American countries into the global economy and the signing of the World Trade Organization (WTO) agreements in telecommunications, from the late 1980s, some Latin American and Caribbean countries began a process of ownership reform[10]. The pace of the reform has been different from country to country but some general aspects are common to most of the countries.

As Table 2 shows, at least fifteen Latin American and Caribbean countries have privatized their former public telecommunications operators (PTOs). This would include three members of the Andean Pact (Bolivia, Peru and Venezuela), five Caribbean countries (Barbados, Belize, Guyana, Jamaica, and Trinidad and Tobago), four Central American countries (El Salvador, Guatemala, Panama and Mexico), and three members of the Mercosur common market (Argentina, Brazil and Chile). Thirteen of the fifteen countries involved chose to give up more than 50% of their stakes in the former public telecom operator. In Bolivia, the government kept its 50% but transferred it later to a pension fund scheme (see Graham [1997]). In the remaining case of Trinidad and Tobago, the government kept 51% of its share.

[10] By ownership reform, I mean the transfer of capital and management control to private investors, either nationals or foreigners. In this case, I do not include any kind of what Lee (1999) calls "non-traditional strategies of privatization." As Adam et al. (1992, p. 8) state, "BOT can be seen as a variant of the standard practice of public works contracting in the face of financial resource constraints, by which the remuneration system for the contractor is switched from a certain lump-sum payment to a risk-bearing payment scheme spread out over time."

Although the privatization of telecommunications in Latin America and the Caribbean has been analyzed elsewhere[11], some important features bear emphasis. Starting in Chile in 1987-89, ownership reform has displayed a pattern apparent in Table 2. First, in all cases, foreign capital has been present in one way or another[12]. Ownership reform in Latin America was based on the premise that foreign investors could bring not only capital but also the technology and expertise lacking in the region. With few exceptions (Mexico and Guatemala), the public telecom operator was bought by a consortium led by foreign investors. Furthermore, only Mexico restricts the stake permitted to foreign capital in telecommunications. The remaining countries lack limits on foreign capital. Yet, while foreign capital has been decisive in the privatization process, domestic capital tends to be always present in consortia, although its share varied from country to country[13].

Second, in every case, governments across the region demanded that consortia include a well-know international telecommunications strategic partner[14] as the *main* stakeholder, or at least as part of the deal. As mentioned before, governments in the region recognized that technology in their telecommunications sectors lagged at the time of privatization. There was no international telecommunications partner in Guatemala initially. However, some time after privatization, Telmex (from Mexico) filled that role.

Third, in most cases, the government sold or transferred a controlling package of the former PTO. These three features distinguish Latin American privatization from that carried out in Asia, where governments chose to allow entry by a new company[15]. Thus, the process in other regions has been different. As Lee (1999, p. 61) states, "Asian-Pacific governments have kept a tight curb on foreign investment. State control is one of the key features that differentiates these [Asian-Pacific] sales from those in other parts of the world."

Fourth, with the exception of the most recent ownership reform cases (Guatemala, El Salvador and Brazil), governments across the region granted an exclusivity period for service provision. This feature is examined in more detail in a later section.

[11] See, for instance, Beca (1993), Molano (1997), Petrazzini (1993 and 1996), Wellenius (1994), Walter and Sen9n (1998) and ITU (1998a and 1998b). Guti9rrez (1999) also makes an analysis in terms of the Andean Pact, Caribbean, Central America and Mercosur countries.

[12] See Petrazzini (1992) and Boeker (1992) for more detailed explanations about the inflow of foreign investment in Latin America in the late 1980s and early 1990s.

[13] In Mexico, domestic capital led the process. For more about Mexican participation in the overall privatization process, see Hoshino (1996) and Barrera (1995).

[14] "The term strategic partner usually implies a foreign telecommunications carrier, often but not always from a developed country" (ITU 1997b, p. 48).

[15] See also Petrazzini (1993) and Ure (1993).

Table 2: Ownership Reforms in Latin American and the Caribbean

Country	Year Of Privatization	Private %	Foreign Capital	Network Expansion	Public Offering
Argentina	1990-1991	100%	TASA-64.5% TCOM-60%	Yes	Yes
Barbados	1991	80% on average	C&W- BARTEL-76% BET-85%	-	Yes
Belize	1988-1992	97%	23.5%	Yes	No
Bolivia	1995	50%-100%*/	50%	Yes	Yes
Brazil	1998	100%	.24%	Yes	Yes
Chile	1985-1990	100%	CTC-63.5%** ENTEL-29%*	No	Yes
Colombia	Plan to privatize one local telco.	-	Allowed	-	-
Costa Rica	No plan.	-	-	-	-
Ecuador	Privatization efforts failed.	-	Allowed	-	-
El Salvador	1998	61%.So far	51%	Yes	Yes
Guatemala	1998	98%	-	Yes	Yes
Guyana	1991	80%	80%	Yes	Yes
Honduras	-	Expected 51%	Allowed	-	-
Jamaica	1989-1990	100%	C&W-82%	No	No
Mexico	1990-1994	100%	10.4%	Yes	Yes
Nicaragua	Abandoned.	40%	Allowed	-	-
Panama	1998	51%	C&W- 49%	Yes	Yes
Paraguay	No plans	-	-	-	-
Peru	1994-1996	98%	54.7%**	Yes	Yes
Suriname	No plans	-	-	-	-
Trinidad & Tobago	1989-1991	49%	C&W-49%	Yes	Yes
Uruguay	No plans	-	-	-	-
Venezuela	1991-1996	96%	65%**	Yes	Yes

*/ Large stake was sold to a foreign company. The rest was capitalized into Pension Fund Schemes.
**/ It includes ADRs.

Source: Pyramid Research (1998), Harper (1997), Petrazzini (1995), Ramamurti (1996a, 1996b, and 1996c), ITU 1997b, 1998a and 1998b and Primo and Ziegler (1998); supplemented by the author.

Fifth, except in Chile and Jamaica, network expansion targets and quality improvement were demanded from the new owners. For example, Argentina demanded an annual growth rate of about 7%, MϑxicΩ 12%, Guyana 18%[16]. The Bolivian government requested from three of the main local telecom cooperatives increases in the total new lines installed of 80-115%. In Panama, the new operator is compelled to increase the number of main lines per 100 inhabitants to 25 by 2002. The Venezuelan government stipulated in Annex A of the concession contract that phone lines must increase from 2 million in 1991 to 4.5 million in 2000. In Peru, the contract with the new owner, Telef∴nica de EspaZa, mandated an additional 631,000 lines between 1994 and 1998[17]. Governments in the region realized the need to expand the number of lines nationwide to fulfill social demands. Indeed, some analysts argue that the targets imposed on the new operators fell well short of the social needs[18]. However, such mandates and obligations also raise the capital requirements and lower the values of incumbent assets.

Sixth, in most cases, the transfer of a controlling interest of the PTO was done by private sale involving a public tender of a main package with options to former and current employees to buy shares of the newly privatized telecom. That was the case in Argentina, Perδ, MϑxicΩ, Chile, Brazil, Venezuela, Guyana, Panama and El Salvador. State-owned shares were placed by public offerings on the domestic or New York stock exchange. In Jamaica and Belize, the deals were private sales with no request for bids (ITU [1998a and 1998b]).

In other countries in the region, ownership reforms failed completely. In Uruguay and Paraguay (1992), people voted against privatization. In Colombia (1992), a strong strike forced the government to withdraw its privatization goal (Hooley [1998]). After three attempts to sell the state telco in Ecuador (1998-99), investors withdrew from the tender. Recently, we note the failing cases of Honduras and Nicaragua, where Telmex withdrew from the auction for a 40% share of the public telecom operator. Other countries like Costa Rica and Suriname seem not to be willing to undertake ownership reforms in the near future. The performance of the PTOs seems to be the main reason not to proceed to privatization. Both countries have network expansion well ahead of the Latin American average.

Lastly, as nowhere in the world, big worldwide telecommunications carriers participated in the ownership reform[19]. In basic telecommunications services[20], the Spanish carrier Telef∴nica is the strategic partner in Argentina, Chile, Brazil, Perδ and Venezuela, and it

[16] Regarding Mexico and Argentina, see Beca (1993), Celani (1998), Escobar de Medecigo (1999), Gonzalez et al. (1998), Mairal (1994), Petrecolla et al. (1993); for Guyana, see Hinds (1995) and Greenidge (1993, 1994, and 1997).

[17] See Barja (1999) and Herrera (1996a) for the Bolivian case, Francϑs (1993 and 1996) for the Venezuela experience, Campodonico (1999) for the Peruvian process; for Panama, see ITU (1998a) and USDOC (1999).

[18] As an analyst has pointed out, "most of Latin American governments are not requiring obligations as significant as those imposed on investors in Asian countries, such as Indonesia and the Philippines, to build out networks in rural areas. This missed opportunity to provide strong incentives for extending rural access could pose a potential problem in the long term" (Hudson 1997, p. 354).

[19] Sonnenschein and Yokopenic (1996) is a good source for the reasons multinational carriers were (are) so eager to invest in Latin American telecommunications sectors.

[20] For more information about the strategic partners and alliances in the sector, see Barbour (1997) and Arathoon (1999).

recently bought small telecommunications operators in El Salvador and Guatemala. Cable & Wireless has majority interests in Barbados, Panama, Jamaica and Trinidad and Tobago. MCI is the strategic operator in Belize and MƟxico, and recently entered the long-distance market in Sao Paulo, Brazil. France Telecom is in El Salvador and MƟxico. The Italian operator STET is the new owner of the long-distance carrier in Bolivia and co-owner in Argentina, Chile and Cuba. GTE from the United States operates in Venezuela and MƟxico. In most cases, the carriers have formed alliances that may bring positive effects on the sector, and Latin American customers will enjoy the latest technologies available worldwide. Prices may tend to decrease, and service will be enhanced. However, regulatory bodies will face greater challenges from the potential anti-competitive behavior of these very aggressive players and from the rapid pace of convergence among competing technologies[21].

Table 3: Comparisons of Pre- and Post-Privatization Reform

Countries that privatized	Year of Privatization	% Annual Growth Prior to Privatization	% Annual Growth From Privatization
Trinidad & Tobago	1990	15.0	5.0
Belize	1988	12.1	9.5
Barbados	1989	6.7	6.4
Chile	1987	5.7	13.7
Argentina	1990	5.2	8.2
Mexico	1991	5.1	5.6
Jamaica	1989	5.0	16.6
Peru	1994	4.2	23.7
Venezuela	1991	3.8	6.8
Bolivia	1995	2.4	29.0
Guyana	1991	-2.4	24.1
Simple Average		5.7	13.5
Countries that did not privatize their state-owned operators		%Annual Average Growth Rate	
		1981-1989	1990-1997
Honduras		8.5	10.6
Suriname		8.3	6.9
Colombia		5.8	10.6
Uruguay		5.5	8.4
Ecuador		5.5	6.6
Paraguay		5.1	7.3
El Salvador		5.1	12.0
Brazil		4.7	7.1
Guatemala		4.5	11.3
Costa Rica		3.3	7.9
Panama		3.1	4.5
Nicaragua		1.8	11.1
Simple Average		5.1	8.7

Source: ITU Database Indicators, 1997a.

[21] The main problems regulators may encounter are considered in Neal (1999).

What overall effects may the privatization reform have had on the deployment of main phone lines per 100 inhabitants? Table 3 shows the simple (not weighted) average growth rate of main lines per 100 inhabitants. Prior to privatization, the average growth rates were very close between those countries that privatized and those that did not. However, it seems that after privatization, the growth rate of teledensity for the countries that embarked on ownership reform did grow more rapidly than that of the countries that kept their (main) phone operators in public hands. This is still true even if we do not include the most recent privatization cases (in the table, Perδ and Bolivia). The statistical evidence seems to show that the privatization process tends to improve that performance measure[22]. Here, I do not address which elements of the privatization process influenced the deployment of main lines per 100 inhabitants in the region.

4. Liberalization Reform

Unfortunately, the speed of privatization of the former state-owned telecom operators often came at a price. It is worthwhile quoting Stiglitz (1998a, pp. 18-19) to illustrate what could have gone wrong. "The emphasis on privatization over the past decade has stemmed less from concern over lack of competition than from a focus on profit incentives. The idea was that if property rights could be created, the profit-maximizing behavior of the owners would eliminate waste and inefficiency. At the same time the sale of the enterprises would raise much-needed revenue. At the time privatizing quickly and comprehensively --and then fixing the problems later on-- seemed a reasonable gamble. From today's vantage point, the advocates of privatization may have overestimated the benefits of privatization and underestimated the costs, particularly the political costs of the process itself and the impediments it has posed to further reform…. Even at the time many of us warned again hastily privatizing without creating the needed institutional infrastructure, including competitive markets and regulatory bodies. David Sappington and I showed in the fundamental theorem on privatization that the conditions under which privatization can achieve the public objectives of efficiency and equity are very limited and are very similar to the conditions under which competitive markets attain Pareto-efficient outcomes. If, for instance, competition is lacking, creating a private, unregulated monopoly will likely result in even higher prices for consumers".

This critique applies to most of the country reforms. Some general observations can be made on the telecommunications market liberalization reform in the region, in *basic services*. First, Table 4 shows that most countries, especially the first ones that privatized, gave up easily and willingly exclusivity periods to the new telecom owners. The exclusivity period means that the (new) privately owned operators are the sole providers of basic telecommunications services, either local or long distance. In short, governments granted monopoly service rights to the new owners. The exclusivity period has varied from less than one year in the case of Brazil to 25 years for Jamaica and Barbados. Some commentators[23] on the ownership reforms have defended the strategy, saying that at the time of privatization, political and economic conditions were so fragile that they involved too much risk for the (new) private owners. Pisciotta (1997) referred to this process as privatization with phased-in competition.

Second, in the latest country reforms (Guatemala, El Salvador and Brazil) governments did not give up substantial market power to the new owners. In the case of Brazil, just six months after privatization, the government auctioned the so-called mirror licenses that allow a duopolistic competition in the main telecommunications services. Arguments for exclusivity periods were not

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[22] I say *"seem"* because a simple test of means difference shows that post-privatization averages are different at a 5% significance level (one tail) but failed at different significance levels.

[23] See Ramamurti (1996a), Levy and Spiller (1996) and Petrazzini (1995)

so compelling in recent years. Brazil was in financial crisis, heavily indebted, and running dangerous fiscal deficits, yet was able to sell its telecom operators at good prices without sacrificing market structure reform. This will allow network expansion to grow faster in Brazil than it has in countries like Argentina or MƟxico. This model of reform is called privatization with full competition.

Third, some governments in the region (e.g., Jamaica) are trying to renegotiate the exclusivity period conferred to the private operator. In Peru, the incumbent monopoly accepted the end of the exclusivity period a year early in exchange for some changes in the productivity factor of the price-cap regulation. In Argentina, the government was in discussion with the two incumbents to open the market before the exclusivity period ended, but no changes occurred.

Table 4: Market Structure Reform

Country	Year Starting Exclusivity	Exclusivity Period	*Basic* Telecommunications Services
Argentina	1990	7-extensive for two more years	Duopoly competition from 1999 on
Barbados	1988	25 years	Competition from 2012 on.
Belize	1988	15 years	Full competition from 2003 on
Bolivia	1995	6 years subject to meet some target.	Full competition from 2001 on
Brazil	1998	4 years in duopoly	Full competition from 2002 on
Chile	1988	-	Full competition from 1995 on
Colombia	-	-	Local opened to competition from 1994 on. Long distance (limited to three) from 1998 on
Costa Rica	-	-	Close to competition
Ecuador	-	-	Close to competition
El Salvador	-	None	Full competition from 1998 on.
Guatemala	-	None	Full competition from 1999 on.
Guyana	1990	20 years	Potentially open to competition from 2010 on.
Honduras	-	7 years when sold	From 2006 on if sold in 1999.
Jamaica	1987	25 years	2012
MƟxico	1991	5-years in LD	Open to competition from 1997 on.
Nicaragua	-	4 years when sold	Not determined yet
Panama	1997	6 years	Full competition from 2003 on.
Paraguay	-	-	Close to competition
Perδ	1994	5 years	Full competition from 1998 on.
Suriname	-	-	Close to competition
Trinidad & Tobago	1991	20 years	Limited Competition from 2010 on.
Uruguay	-	-	Close to competition
Venezuela	1991	9 years	Full competition from 2001 on

Sources for Table 4 include Petrazzini (1995), Ramamurti (1996a), ITU (1998a and 1998b), Pyramid Research (1998), Harper (1997) and USDOC (1992 and 1999).

As the extensive study by Pyramid Research (1998, pp. 7) shows, the exclusivity period has given too much power and leverage to incumbents, giving them a first mover advantage in the market. For instance, it is said that the basic telecommunications service in Chile is quite competitive because there are more than twelve long-distance operators. Yet, two companies, CTC and Entel (former PTOs), dominate more than 75% of the long-distance market[24]. Similar patterns seem to hold in Argentina, Perδ, Venezuela and, in a lesser extension, MϑxicoΦ The presence of multinational carriers in the region may make things harder for new entrants to compete and obtain greater market share.

Only Colombia followed the liberalization without privatization approach. In that country, local phone and long-distance services were open to full or limited competition without privatizing any PTO. Costa Rica and Uruguay may follow this model, given their reluctance to privatize their PTOs.

Lastly, as Table 4 shows, the early years of the next century will bring the opening of the basic service markets in most countries in the region. This has to be seen as a positive factor for competition that, without doubt, will step up network deployment and the efficiency in the telecommunications sector. However, the potential lack of well-designed rules of interconnection may create an ordeal for regulators, as the past experiences of some developed countries have shown.

In short, the liberalization of (main) telecom markets in Latin America and the Caribbean is still a work in progress. Most governments in the region have their hands tied by the concessions contracts signed at the time of the privatization. The opening of the markets will bring other problems that will be better managed if the countries in the region have sound and strong regulatory frameworks for telecommunications and a good macro-institutional environment. The next section studies in more detail the development of the regulatory framework in telecommunications for 24 Latin American and Caribbean countries.

5. The Building of Regulatory Framework for Telecommunications

The Regulatory Mandate

Why regulate the telecommunications sector? Many responses stress market failure arguments. From the point of view of the positive political economy, it is said that the telecommunications sector is (was) a natural monopoly and that a single firm provides telecommunications service at lower cost. However, this gives rise to a privileged situation and dead-weight loss will appear if the market is left unregulated. Thus, regulation is justified.

A second explanation is that there may be imperfect information or asymmetric information regarding the quality of the service, that technologies used may not be easily compatible and so on. Regulation is said to improve the social outcome because regulators may supply information about providers' quality of the service or force them to provide a given minimum level of quality. Also, the regulator may set some technological standards for compatibility, improving the well-being of the society.

A third justification for regulation involves the public good and external effects. The use of the electromagnetic spectrum is controlled because, if left unregulated, people or operators will

[24] See Moguillansky (1998). Pyramid Research (1998, p. 303) states, "There are nine operators holding local telephony services concessions, but the CompaZia de Telecomunicaciones de Chile (CTC the former monopoly provider now controlled by Telef∴nica de EspaZa) still controls more than 90% of local lines in service."

use them freely, interfering with each other's transmission and making communications impossible.

From a normative approach it is said that government should regulate because telecommunications services may be considered a necessary good. Pricing and subsidy policies are needed to achieve the goal of universal service by optimizing the social deployment of networks.

Without going into the details of the politics of regulation, it suffices to say that most of the positive arguments given above have been questioned. This has led some developed countries (New Zealand) to abolish regulatory institutions. In Australia the functions of telecom regulators have been partially absorbed by competition commissions. Paradoxically, while this kind of questioning is in fashion in developed countries, the opposite trend is on the rise in developing countries. Yet institutions like the World Bank and the Inter-American Development Bank keep urging the creation of regulatory bodies.

Design of Regulatory Institutions

Specific investment and opportunistic behavior

Utility sectors are said to have three distinctive characteristics. First, their technologies have important economies of scale and scope. Second, most of utilities' assets are highly specific and non-redeployable in other activities without great costs. Last, the services provided by these sectors are considered necessary goods. Altogether, these three characteristics create problems that undercut the ability of ordinary market mechanisms to deliver first-best performance. What do these characteristics mean? The first one means that it is very likely that there will not be more than two or three providers of telecom services. Therefore, governments cannot rely on the operation of the competitive markets to prevent the abuse of market power. The second characteristic implies that a large proportion of the investment (fixed) can be considered as sunk, giving governments the incentive to behave opportunistically. And the third characteristic signals the fact that the pricing of utility services is likely to be very political. As Levy and Spiller (1994, p. 204) state, "The combination of significant investment in durable, specific assets with the high level of politicization of utilities has the following result: utilities are highly vulnerable to administrative expropriation of their vast quasi-rents."

These points partially answer the question regarding the need for an administrative agency insulated from political pressures. The remaining answer will be provided later. How does the mechanism of expropriation work? Very simply, governments, knowing that the private investors' investment is very specific, will behave opportunistically once the investment is undertaken. In the extreme case, government can take over the operation of the firm. More likely, government may administratively expropriate value by setting prices below their long-run average incremental costs, or by imposing some specific technical conditions concerning the purchase of equipment, labor contract conditions and so on. Operators in that situation have no options. The operators will prefer staying in the market to the extent their returns from operating exceed their return from shutting down and deploying their assets elsewhere.

The most likely outcome is that operators will anticipate the opportunistic behavior by the government and will either, in the extreme case, refuse to participate in projects or will invest sub-optimally, undertaking lower levels of specific investments. Thus, to encourage private sector participation in the project of increasing main lines per 100 inhabitants, governments in developing countries must assure private investors that they will not behave opportunistically.

Regulatory governance

Levy and Spiller (1994 and 1996a) look at regulation as a design mechanism. This design has two dimensions: the regulatory governance and the regulatory incentives. For those researchers, regulatory governance consists of all the mechanisms that a society has to constrain regulatory discretion and to resolve conflicts that arise regarding those constraints. Conversely, regulatory incentives are the mechanisms regarding pricing, subsidies and other operating policies. I consider regulatory governance as the *key element* in the creation of a regulatory framework in telecommunications. Regulatory incentives improve performance only if there is strong regulatory governance.

Regulatory governance in a country is determined basically by the institutional endowment of the nation. Institutions are the formal and informal rules present in a society. Briefly, formal rules are derived from the legislative and executive institutions, the country's judiciary system and the bureaucracy (administrative capabilities) that make government work. Among the informal rules are customs, beliefs, ideologies, etc. Together, these formal and informal rules shape the incentives of individuals and limit or encourage opportunistic behavior.

In countries with strong regulatory governance, there are well-known check and balance procedures that limit the executive discretionary power. In those societies, explicit separation of powers between the legislative, executive and judicial organs of the state will be present. The stronger the regulatory governance, the stronger will be the constraints on executive and legislative discretion. However, as Levy and Spiller mention, strong checks and balances may also reduce flexibility, which is needed in utility sectors, more now than before, given the pace of technological developments and change, especially in the telecommunications sector.

For the telecommunications sector, the existence of a *specific* regulatory framework is important for sector development[25]. Private investors will look at the overall regulatory governance within a country, but in developing countries, if they want to invest in a specific utility sector, they also will look at whether there is a *specialized* regulatory authority that *credibly* safeguards the workings of that sector.

What attributes should be taken into account when creating a regulatory framework? The answer involves theoretical and practical considerations. These are documented below to provide the rationale for a regulatory index presented in Table 6.

Approaches to the Regulatory Framework in Telecommunications

For Latin American governments, a way to attract investments in telecommunications is to have a sound regulatory framework that credibly limits government discretion. Some insights regarding this framework can be obtained from practitioners in the field. In addition, I will try to link those criteria to recent theoretical work on organization design and internal organization of governments.

Practitioners have long been speaking out about the need for having regulatory bodies[26] for utility sectors[27] and have stipulated the attributes that such regulatory bodies should have. In

[25] The level of specificity of the regulatory body may however reduce the degree of flexibility that the regulatory body may need. Technological development and what is called technological convergence will impact the tasks of regulators in the future. Unfortunately, our main focus is in basic telecommunications services. In the future the regulatory framework index must include all kind of telecommunications services.

[26] Regulatory body is defined as whatever individual, board or administrative agency that makes decisions on regulatory matters.

this section, I will use their work to construct a regulatory framework index for telecommunications. I also provide short explanations and a theoretical background.

The regulatory framework can be thought of as two parts: structures and process. Structures include the distribution of regulatory tasks among different levels of the government, the objectives and empowerment given to each of these agencies and the procedures for choosing the regulatory agents. Process includes the mechanisms of communication governing the potential overlapping functions among the different levels of the government, the ways to overcome conflict and the length and span of control of different regulatory bodies.

In the initial design of the regulatory body, structure should matter more than process. The main features a regulatory body according to Stern and Holder (1999)[28] are: autonomy, accountability, clarity and transparency. The first three aspects relate to the structure of the regulatory framework, the last one to the process.

Autonomy/independence

Concerning the matter of the degree of independence/autonomy, ITU (1993) notes three distinct dimensions that may be temporally linked or not.

1) independence from the operational activities. That is, the regulatory body must be a separate entity from the agency or unit that provides the telecommunications services.

2) independence from interested parties, such as industrial customers.

3) degree of independence from the executive branch of the government that sets broad policy for the sector.

However, the organizational structure for telecom regulation takes different forms depending on the overall regulatory governance and polity present in the country. In general, the world experience can be reduced to three cases of *interest* for Latin American telecommunications:

1) A regulatory authority within the government ministry responsible for telecommunications, as is Chile, France, Germany and some Asian countries.

2) A fully autonomous regulatory body empowered to make decisions not subject to review by ministers, as in the United States.

3) A semi-autonomous regulatory agency whose decisions are subject to review by ministers in some cases but which is generally autonomous.

Some Latin American countries began the first regulatory separation in the 1980s: Argentina, Brazil, Chile and Colombia, for instance. This first step toward the creation of the

[27] See ITU (1993), Tyler and Bednarczyk (1993), Miller (1994), Schultz (1994), Sinha (1995), Tenenbaum (1996), Petrazzini (1997), Armstrong and Vickers (1996), Cave (1997) and Melody (1997b).

[28] See Stern (1994) and Stern and Holder (1999).

regulatory framework is the *first* element for constructing the regulatory framework index. In most cases in Latin America, the regulatory tasks were given to a unit within the Ministry of Post and Telecommunications and were subject to daily political interference and executive discretion. Still, it was a beginning and significant because regulation by an agency associated with the operating telecom activities cannot be impartial. Also, separation between the operating and regulating activities may create a separate body of bureaucracy more specialized in regulatory matters[29]. This bureaucracy could have been more willing to back up the privatization process or promote further liberalization, given its understanding of the sector and the fact that status and salary are no longer linked to operations. I use "may" cautiously because there were cases in which the opposite could have happened.

The degree of independence[30] is without any doubt an arguable aspect. What should we understand by independence? As a benchmark, we can think of the Federal Communications Commissions (FCC). It is a fully autonomous regulatory body empowered to make decisions not subject to review by any secretary or the executive branch, although the courts may challenge its decisions. However, one could argue that it would be impossible for any Latin American country to have such a regulatory body. Melody (1997a, p. 198, italics added) states that "an FCC-type independent regulatory agency is a unique product of the US constitutional system, with its elaborate division of powers among executive, legislative and judicial branches of governments. Some analysts view the public utility regulatory agencies in the US, including the FCC, as quasi-legislative and quasi-judicial organizations. They have broad mandates and significant freedom both to interpret and to enforce their mandates. Few countries have governmental structures that have permitted such a degree of independence, at least so far. *Some even view such degree of independence as an abdication of the political responsibility of elected officials."*

No matter what level of independence exists in the letter of law, we can say that in Latin America, regulatory bodies for telecommunications can be considered as semi-autonomous in the sense that some of their decisions may be subject to review, either by members of the executive branch or by the legislative power[31]. To take one of the features of Levy and Spiller's (1994) analysis, we should expect different degrees of autonomy within the regulatory framework in different Latin American countries, according to their institutional endowments. In general, the degree of independence/autonomy will vary.

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[29] For instance, Saunders et al. (1994, p. 66) state that "Experience shows, however, that adequate autonomy can sometimes also be attained even when telecommunications entities are closely tied to government, such as being part of a government department, provided appropriate organizational and financial measures are implemented."

[30] For details regarding factors that may favor or discourage the three types of independence, see ITU (1993).

[31] I use semi-independent in a broad sense that may be highly controversial. For instance, Tenenbaum (1996, p. 32) states that "What people really mean by an independent regulator entity is a government entity that does not have to get the approval of the prime minister or other high-level political authorities to raise (or lower) tariffs." This definition may be too restrictive.

Table 5: Type of Telecom Regulatory Agency

Country	Name of Agency	Year of*/ Creation	Created by
Argentina	Comisi∴n Nacional de (Tele)Comunicaciones	1991 1996 1997	Executive Decree 1185/90; Decree 80/97;
Barbados	Public Utility Board	1978	Public Utility Act
Belize	Office of Telecommunications	1991	NA
Bolivia	Superintendencia de Telecomunicaciones	1994	Law 1600 of 1994
Brazil	AgΛncia Nacional de TelecomunicaHτes	1997	Law 9.472/97 and Decree 2338/97
Chile	SubsecretarPa de Comunicaciones	1977-	Decree-Law 1762/77
Colombia	Comisi∴n de Regulacion de Comunicaciones-	1992 1994-	Decree 2122/92 and Law 142/94
Costa Rica	Autoridad Reguladora de Servicios Pδblicos	1996	Law 7593/96
Ecuador	Comisi∴n Nacional de Telecomunicaciones SecretarPa Nacional de Telecomunicaciones Superintendencia de Telecomunicaciones	1992 1995	Special Law of Telecommunications - Reformation Law to the Law of Telecommunications
El Salvador	Superintendencia General de Telecomunicaciones	1996	Decree 142/97 or Telecommunications Law
Guatemala	Superintendencia de Telecomunicaciones	1996	Decree 94/97
Guyana	Public Utility Commission	1990	Public Utility Commission Act
Honduras	Comisi∴n Nacional de Telecomunicaciones	1995	Decree 185/95
Jamaica	Office of Utilities Regulation	1995	Office of Utility Regulation Act
Mexico	Comisi∴n Federal de Telecomunicaciones	1996	Presidential Decree
Nicaragua	Instituto Nicaraguense de Telecomunicaciones y Correos	1995	Law 200/95
Panama	Ente Regulador de los Servicios Pδblicos	1997	Executive Decree 73/97
Paraguay	Comisi∴n Nacional de Telecomunicaciones	1995	Law 642/95
Peru	Organismo Supervisor de la Inversi∴n Privada en Telecomunicaciones	1991 1993	Supreme Decree 013/93
Dominican Republic	Instituto Dominicano de Telecomunicaciones	1998	Law 153/98

Suriname	Telesur	1980	Decree C-38
Trinidad & Tobago	Public Utility Commision	N.A.	N.A
Uruguay	Administrati∴n Nacional de Telecomunicaciones	1974	Decree-Law 14.235/74
Venezuela	Comisi∴n Nacional de Telecomunicaciones	1991	Presidential Decree 1826/91

*/ First year shows the year of creation. The remaining the modifications done to change or to re-structure the regulatory body.
Source: ITU 1998a and 1998b and Legislation from the countries.

As Table 5 shows, the creation of semi-autonomous regulatory bodies in the area is recent and widespread. Argentina, Colombia and Venezuela were the leaders in this process. Some countries decided to keep their regulatory body ascribed to a particular minister, as in Chile, Uruguay, Barbados and Belize, while countries like Suriname have not taken even the first step toward independence; i.e., separating the regulatory authority from the operational activities. Paradoxically, Suriname has very high level of main lines per 100 inhabitants[32]. Some countries have chosen to have a telecommunications regulatory agency (Brazil, Colombia, Ecuador, Perδ, Paraguay and Venezuela) while others decided to have a non-specialized regulatory body (Costa Rica, Jamaica, Nicaragua and Panama). The legislation backing up the level of the regulatory authority is varied. Some countries have opted for specific laws, while others have enacted decrees.

Accountability

On the basis of New Regulatory Economics, regulation can be viewed as a game between various players with different degrees of knowledge and information for making choices that affect the efficiency and fairness of resource allocation. According to Stern and Holder (1999, p. 38), the regulatory framework "should 1) ensure the efficient provision of services to consumers at the minimum necessary prices; and 2) support private investment by continuing to allow companies the reasonable expectation of a normal real rate of return." But there are other players besides consumers and operators in the sector. In terms of the organizational design approach, the legislative or the executive power is the political principal. In reality, despite the fact that agencies are supposed to care for consumers' welfare, regulators are not accountable directly to them, but instead to either the legislative or the executive power.

Because regulators' decisions may affect operators' incentives and outcomes, their decisions may be subject to challenge via some appeals mechanism. Accountability will be to the executive power in most Latin American countries. In some countries like Colombia, a complementary authority was created to safeguard consumers' interest. But accountability also means that there should be a right of appeal on questions of regulatory process, although not on substantive policy issues. The existence of a mechanism to resolve disputes between the regulatory body and operators or conflicts between operators is called due process. Finally, regulatory behavior (not decisions) needs to be accountable. Regulators can have incentives for wrongdoing, and there should be clear mechanisms that limit or curb potential misbehavior.

[32] Unfortunately, very little information is available about this country to explain its very successful network expansion.

Clarity of roles and objectives

In Latin America, a politically appointed minister of post and telecommunications usually sets telecommunications policy. Recognizing that presidentialism[33] dominates the politics of most countries in the sample is important for analysis because the president can bargain with rival political parties when making appointments[34], to align the opposition with the presidential agenda. Because any minister is likely to have a political agenda as well, along with some power delegated by the president or agreed to in the bargaining process for appointment, the minister is likely to come into conflict with any semi-autonomous regulatory body with legal mandates and responsibilities.

In most Latin American countries, some of the regulatory roles are shared between the regulatory body and other government agencies, particularly with the ministry of telecommunications. This may be viewed as a bad design of regulatory governance because of the potential overlapping of tasks and the increased cost of separate agencies. However, this may have been the best decision given the relative market power and influence of the telecom players. The principal-agency problem present in the regulatory game shows that "regulators face informational asymmetries in their relationship with the firm they regulate. The regulators do not know, for instance, the exact technologies of the operators and the elasticity of their demands" (Estache and Martimort [1999], p. 2). This asymmetric information between the ignorant regulators and the operators gives rise to the fact that regulators cannot extract informational rents from the firm. In sum, asymmetric information implicitly increases the cost of capture. The separation of responsibilities (roles) between different regulatory bodies acts as a mechanism to prevent (or reduce) regulatory capture by the interest groups and to improve commitment (see Tirole [1994] and Olsen and Torsvick [1995]). Furthermore, theoretical research suggests that when commitment capacity by the government to the regulatory contract is limited or when renegotiations is a likely outcome of the reform process, separation of powers between different regulatory agencies is a better design.

From the point of view of practitioners (Stern and Holder 1999), some questions about clarity of roles are: 1) Does the legislation establish unambiguously which entity is responsible for what regulatory functions? 2) Are there any functions carried out jointly, or any that are ambiguous, between the regulator and those of the relevant minister(s)? and 3) Is it clear where the regulator has an advisory role rather than a decision-making role?

Regarding tasks the regulator performs, the following broad fundamental missions can be considered. First, regulation may promote social goals concerning universal service. In Latin America the coverage of households with telecom services is very low. Some schemes have been created to expand services to low-income people, and regulators can affect this process. Second, regulators and an ombudsman often protect users' interest and implement mechanisms to consider

[33] See Mainwaring and Shugart (1997).

[34] "Presidentialism" refers to a political system dominated by the presidency regardless of the majority party in the congress; see Mainwaring and Shugart (1997). Oxhorn and Ducatenzeiler (1998a, p.237) refer to "hyper-presidentialism" and argue it "reflects the extreme concentration of political authority in the office of the president. The person who occupies that office becomes a key political actor in mediating diverse conflicts within society but as a result is not by any means an autonomous actor. Rather, the president's political power and how he (or she) exercises it reflect the nature of the social forces and other actors who provide the president's basis of political support." Five countries in the sample (Barbados, Belize, Guyana, Jamaica and Trinidad and Tobago) do not have a presidential system, but their parliamentary systems may be plagued with similar political compromises.

user complaints. Third, industry market structure is an issue. Regulators generally have some responsibility toward increasing competition in the sector and reducing an incumbent's market power. Today, more and more sector analysts state that technological advances have made obsolete the natural monopoly argument. So the telecommunications sector may no longer be a monopoly but an oligopolistic market.

Clarity of roles is also important in the supervision of the dominant telecom operator. This has been an important reason for creation of a regulatory body. All Latin American countries have had state telecom operators that were monopolies. After privatization and with the exclusivity period granted to them, these became private monopolies. A regulatory body is needed to curb the monopolist incentive to exercise market power, impose high prices and reduce the consumers' welfare[35]. But, as noted above, the concession contracts signed with new owners usually include many targets in terms of coverage, quality, price schemes and so on. Without any doubt, this is one of the most important missions the regulatory body can have. In this respect, the regulatory body should have the power to set tariffs for those markets where competition does not exist.

A fifth mission is assuring technical preconditions for effective operations. If competition will be allowed, this becomes a crucial mission. There must be clarity regarding numbering plans, number portability, technical standards or rules concerning interconnection. A sixth area of concern involves managing common resources effectively. This includes the allocation of the electromagnetic spectrum, public rights of way and the design of clear mechanisms of allocating those rights. At issue is who is responsible for policing the telecommunications sector, which turns out to be a very important matter. Regulation will be credible if it bites. Thus, a regulatory body may have to issue legally binding orders when it makes a decision (resolution) or when it concludes that an operator is violating a regulatory norm. The recourses available to the regulatory authority if legally binding decisions are persistently violated are also encompassed.

Transparency

Practitioners (see Stern and Holder [1999], Tyler and Bednarczyk [1993], ITU [1993] and Tenenbaum [1996]) argue that "regulators in developing countries are always under suspicion because often their first big task is to lift prices up to costs" (Tenenbaum, 1996, p. 34). That suspicion is raised because of the potential collusion of regulators with the regulated firms. Transparency is firmly related to processes of the regulatory design. Three main aspects then should be considered. First, a clear specification of the rules of the game; second, a sound opening up of the process to take or implement decisions; and lastly, a mechanism to explain or publicize the decisions. Notice that the better the transparency of the regulatory process, the more accountability is imposed on the regulatory authority and the less may be the likelihood of regulatory capture.

Legal Scope of the Regulatory Framework

An important feature of regulatory governance made explicit by Levy and Spiller (1994 and 1996a) is the scope of the legislation that created the regulatory body in each Latin American country and the strength of the judiciary. Many analysts emphasize this aspect because credibility is lacking in many developing countries.

[35] As Pisciotta (1997, pp. 339-40) states "most countries engaged in liberalisation commonly experience a need for increased regulation. Licencing, enforcement of license obligations, rate rebalancing and review, interconnection rules, accounting standards an frequency allocation all normally require a significant degree of regulatory oversight -at least until fair competitive market rules are firmly established."

Bolivia is cited by Borner et al. (1995, p.19): "On 11 January 1990 President Jaime Paz Zamora issued Supreme Decree No 2247, which contained a series of measures aimed at encouraging private investment by domestic and foreign entrepreneurs. From the point of view of efficiency the decree introduced the right policies. The question is whether these policies are credible. In this respect, a presidential decree promising to respect property rights seems almost a paradox. Obviously, under the political system in Bolivia the president has enough discretionary power to write a decree that guarantees the safety of investments, but in such a system this guarantee depends upon the benevolence of the president and there is no way of knowing whether he or a future president will change his mind and write a new decree that rescinds all former promises. *The fact that there is an executive who can implement rights simply by issuing decrees shows that there are no mechanisms for guaranteeing property rights other than the will of the executive.* There is hardly anything worse for investor confidence than discretionary power with no institutional safeguards to prevent arbitrary changes in policy. *Credibility cannot be established by decree."* (italics added). This point is applicable to all Latin American countries and the political system governing the region. Following Levy and Spiller, I agree that a regulatory framework introduced through presidential decrees may be prone to great instability and hence will not be credible.

Despite the presidentialism present in Latin American, regulatory frameworks created through laws enacted by the elected legislative body are stronger safeguards of the stability of the regulatory framework than executive decrees. Presidential decrees or simple decrees will fail to convey credible signals to private investors.

Contracts and the Regulatory Framework

The literature on contracting theory tells us that contracts are by nature incomplete because of economic agents' limited (bounded in terms of Williamson) rationality. Because agents' capabilities to foresee all the possible contingencies that may arise in the future are limited, contracts are prone to renegotiations and to opportunistic behavior by parties. In the case of public utilities like telecommunications, the existence of multiple principals and the lack of (full) commitment aggravate the problem faced by stakeholders.

However, long-term contracts have been common in the water, sewerage, energy and telecommunications industry. Levy and Spiller (1996a) argue that in some cases long-term contracts are the only way some government can credibly commit not to behave opportunistically. They argue that regulation by contract may be the only way to mitigate lack of government commitment. In their study of Jamaican telecommunications history, they show that the highly discretionary power exerted by the executive power (the prime minister and the relevant minister) spurred government opportunism that, in turn, brought a steady underinvestment in the telecommunications sector by the foreign provider operator. They also studied the Jamaican judiciary system, which has always been very independent and strong. Given a history of opportunism and the strength of the judiciary system in Jamaica, the best design of the regulatory framework was regulation by contract.

Concession and license contracts have been common in Latin American ownership reforms. Countries like Argentina, Venezuela, Jamaica, Trinidad and Tobago and M9xico signed such contracts, which stipulate the obligations and rights of the operators and the pricing mechanism. But any contract is incomplete and subject to renegotiations, as the recent Asian experience shows. [36] A main feature of the Levy and Spiller analysis is the idea that the design of the regulatory framework should be compatible with the institutional structure of the country's government and the legal and administrative traditions of the country. The signing of a long-term contract for telecommunications in Jamaica was the optimal choice.

[36] For some examples of where and why renegotiations occurred, see Stern and Holder (1999).

This suggests that regulatory governance can include two different uses of contracts. "The first one is that long-term contracts are intended to be a substitute for a separate regulatory institution. The second one is long-term contracts are a complement to a separate regulatory institutions, providing an agreed basis for regulation" (Stern and Holder [1999], p. 39). The first use given by Levy and Spiller was valid in the context of a single monopoly provider, as was the case for telecommunications in Jamaica in 1987. That contract is currently subject to hard renegotiations between the government of Jamaica and C&W of Jamaica. The contract has limited the ability of government to expand competition in the sector and to reduce the too-high profit level of the company. Furthermore, at least in telecommunications, the technological advances seem to be unlimited. Concession contracts are extremely inflexible ways of creating a regulatory framework and of binding future governments. In the end, long-term contract may create wrong beliefs about private investment among consumers and the public and may lead to undesirable political opportunism. I advocate the second use, having[37] concession contracts be a *complement* to the separate regulatory framework. Contracts may set some of the major rights and obligation guidelines, but they should leave enough flexibility for the regulatory authority to make necessary changes in a rapidly changing environment. As some Latin American countries (Ecuador [1978], Chile [1989], Argentina [1994], Brazil [1989], Colombia [1991], Paraguay [1992], Perδ [1993], Bolivia [1993], Guatemala [1994] and Nicaragua [1994]) enacted a new constitution or amended the old one, a key element of the reform has been an effort to strengthen and ensure greater independence of the judiciary system.[38]. We should expect that a stronger judiciary system will be a mechanism for constraining executive or legislative discretion; however, one should not underestimate the difficulties of implementing laws and norms in Latin American countries.[39].

6. The Regulatory Framework Index

In Latin American there has been a movement toward the strengthening or creation of the institutions since the region has become more integrated into international markets. From the last five years in the 1980s to the first five years of the 1990s, the sum of exports and imports as a proportion of GDP increased 11 percentage points. Structural reforms implemented in the last decade have also affected institutions. Lower state participation has increased the needs of private sectors for sound and fair institutions if firms are to expand investments. Lastly, changes in urbanization process have urged governments to create an adequate institutional environment to allow more citizen participation in economic policy development. As noted, constitutions have been enacted or amended; regulatory bodies have been created for banking activities; capital markets have matured; changes in the judiciary have been implemented; improvements in the educational sector and reforms in the public administration were carried out. Although the success of these new institutions has been mixed, they refkect the care and concern that most governments have shown toward institutional building[40].

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[37] See also Barbour (1997).

[38] For more details, see Gargarella (1997).

[39] Oxhorn and Ducatenzeiler (1998b, p. 19) state that "the new democracies in the region are characterized by low political-party institutionalization, intermittent stalemates between the executive and legislative branches, and the persistence of the tendency to rule by decree (decretismo) as a way to overcome a permanent crisis of governability." This is a more cautious picture of Latin American democratization process and perils. See also Weffort (1998).

[40] For more about this topic, see Burki and Perri (1998), Birdsall et al. (1998) and Graham and Naim (1998).

Institutional changes in the telecommunications sector have been shown in the previous sections. The question is, how to create an index of the regulatory framework for the telecommunications sector for the Latin American countries? To my knowledge, Guti9rrez and Berg (1999) is the first attempt to construct such an index. The index was based on a paper by Galal and Nauriyal (1995). Following the theoretical insights of the incentive literature, Galal and Nauriyal looked at telecom regulation in seven developing economies. Their analysis stressed the importance of factors like (1) the level of autonomy/neutrality of the regulatory agency, (2) agency enforcement power and (3) the existence of mechanisms of conflict resolution. Guti9rrez and Berg (1999) reviewed the existing literature and constructed a dichotomous index, giving a score of 1 to a regulatory agency with at least two of the three attributes and zero otherwise. Although the index proved useful in a preliminary econometric exercise, it has some shortcomings. The first is that it is based on secondary sources and involves a high degree of subjectivity, not only by the authors of the papers but also by the interpretation of the index's builders. The second is that once the dichotomous index reached the upper bound (1), the reader might think that a country had achieved a complete regulatory development in the telecommunications sector.

The later availability of work by ITU (1993) and Tenenbaum (1996) allowed us to re-think the construction of the index. And more recent work by Stern and Holder (1999) set some broad criteria analyzed in full in the previous section. The four criteria expounded were: autonomy, accountability, transparency and clarity of roles.[41] Again we faced the problem of how to measure aspects like autonomy or accountability and how to reduce the level of subjectivity. The next problem was how to make those concepts operational in an index.

To solve this, we adopted the view of practitioners like the ITU (1993) and Tenenbaum (1996). Tenenbaum (1996, p. 36) proposes the following features, among others, to address the autonomy question: "a) substantially independent funding of the regulatory body; b) fixed and staggered terms for commissioners; c) limits on the government's ability to remove (freely) commissioners before the end of their terms; d) restrictions on the government's ability to delay or overrule commission decisions." To this list, we could add another one (Estache and Martimort, [1999]): the regulatory body should have complete freedom in recruiting its own specialized staff. This will require an exemption from the civil service salary and recruitment rules to be able to get highly trained personnel[42].

With regard to the accountability dimensions, ITU (1993) stresses the importance of having a right of appeal on questions of regulatory process, although not on substantive policy issues. We think of a due process or existence of a mechanism to resolve disputes between the regulatory body and operators. The clarity of roles dimension might include several factors, including the right of the regulator to set a tariff for basic services and whether the regulatory body may impose fines or punishments.

In addition, since we posit the building of the regulatory framework in telecommunications from the beginning of the 1980s, we introduce as a first element a separation

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[41] Stern and Holder (1999) additionally include predictability and participation. We drop the last because it is closely related to transparency and accountability and the first because it is, in our opinion, more prone to subjectivity.

[42] For instance, Petrazzini (1997, p. 365) says that "the process of building regulatory capabilities in developing countries is proving to be one of the most difficult and elusive tasks of the reform. Acquiring the necessary funds, hiring a diversified and highly professional staff, buffering…can be a slow and painstaking process."

of operational and regulatory activities in two different entities. This separation matters whether the regulatory tasks were delegated to a government unit or agency within the related ministry.

Lastly, we incorporate the legal framework that created the regulatory body. As stated by Levy and Spiller, there is a rank of alternatives that may be related to legal norms. For instance, laws voted by the whole congress give a greater stability to the regulatory framework than presidential decrees. Presidential decrees are, in turn, more accountable than decrees issued by the related minister. We reduced the problem to just laws and decrees.

Once the main criteria were identified and linked to concepts on the topic from the literature, we proceeded to operationalize them into the index. The first step consisted of reviewing the literature about telecommunications reform in Latin American, including journal articles, books, press releases, Internet websites and, more importantly, the national legislation. An informal survey of regulators and industry managers was also considered. After the study of all this material, I extracted the relevant information to match all of the above criteria. Unfortunately, it was not possible to collect reliable information for all the criteria for most of the 24 Latin American countries. I gave the most weight to the information extracted from the legislation (laws, decrees, resolutions, etc.). In cases of some doubt about the existence of the attribute, I assigned the lower value.

In Table 6 below, I illustrate the telecommunications regulatory framework for 1997. First, the three dimensions suggested by Stern and Holder are shown. They are operationalized using the ITU/Tenenbaum criteria. Right after them, we get the average of these three factors. The next column is the ITU separation of regulatory and operating activities. The next to last column relays the Levy and Spiller's legal rank. The last column offers some estimate for the 1997 telecommunications regulatory framework index.

The countries in alphabetical order are: Argentina, Barbados, Belize, Brazil, Chile, Colombia, Costa Rica, Ecuador, El Salvador, Guatemala, Guyana, Honduras, Jamaica, MϑxicoϑNicaragua, Panama, Paraguay, Perδ, the Dominican Republic, Suriname, Trinidad and Tobago, Uruguay and Venezuela. The countries with reliable information were: Argentina, Barbados, Belize, Brazil, Chile, Colombia, Costa Rica, Ecuador, El Salvador, Guatemala, Guyana, Honduras, Jamaica, MϑxicoϑNicaragua, Panama, Paraguay, Perδ, the Dominican Republic, Suriname, Trinidad and Tobago, Uruguay and Venezuela. A partial list of the legislation used is shown in Appendix A.2.

The further operationalization was to have a dichotomous procedure for every dimension. To illustrate, if the country had a regulatory body with an independent source of financing, I gave it a value of 1 (and zero otherwise). I then averaged the ITU/Tenenbaum criteria. In this way, the five attributes of the ITU/Tenenbaum can reach a maximum of 1 and a minimum of zero. For the ITU criterion of separation between the regulatory and operating activities, I assigned a 1 if there was such a separation and zero otherwise. And for Levy and Spiller's legal ranking, I gave a value of 1 for a law and 0.5 for any other kind of legislation backing up the regulatory body.

The last operationalization was to give some weights to each of the three main overall dimensions. Here, there was room for subjectivity. I assigned the following values. The three dimensions of autonomy, accountability and roles were given a 70% weight to their average. In the future when more factors (and dimensions) are added, their weights should increase accordingly. The ITU separation criterion was assigned a 20% weight, and the remaining 10% went to Levy and Spiller's legal rank.

Table 6: Regulatory Framework Index -RFI- 1997

	Autonomy (1)		Clarity of Roles (2)		Accountability (3)	Average (1+2+3)/ n	ITU ©/	Legal Frame τ/	RFI
Country	Funding*/	Removal*/	Prices*/	Fines*/	Appeal*/				.
ARG	1	0	1	1	1	0.8	1	0.5	.81
BAR	0	0	1	1	0	0.4	1	0.5	.48
BEL	0	0	1	1	1	0.6	1	1	.72
BOL	1	1	1	1	1	1.0	1	1	1.0
BRA	1	1	1	1	1	1.0	1	1	1.0
CHI	0	0	1	1	1	0.6	1	1	.60
COL	1	1	1	1	1	1.0	1	1	1.0
COS	1	1	1	1	1	1.0	1	1	1.0
ECU	1	1	1	1	0	0.8	1	1	.86
ESAL	1	0	0	0	1	0.4	1	1	.58
GUA	1	0	1	1	1	0.8	1	1	.86
GUY	0	1	1	1	1	0.8	1	1	.86
HON	1	1	1	1	1	1.0	1	1	1.0
JAM	0	0	1	1	1	0.6	1	1	.72
MEX	0	1	1	1	1	0.8	1	0.5	.81
NIC	0	1	1	1	1	0.8	1	1	.86
PAN	1	0	1	1	1	0.8	1	1	.86
PAR	0	0	1	1	1	0.6	1	1	.72
PER	1	1	1	1	1	1.0	1	1	1.0
RDOM	0	0	1	1	1	0.6	1	1	.72
SUR	0	0	1	0	0	0.2	0	0.5	.14
TRIT	1	0	1	1	1	0.8	1	1	.86
URU	1	0	1	1	1	0.8	1	0.5	.76
VEN	0	0	1	1	1	0.6	1	0.5	.67
*/ It refers to ITU/Tenenbaum criteria; ©/ It refers to ITU 1993 criterion; τ/ It refers to Levy and Spiller criterion									

The regulatory framework index has its limitations. First, the index tries to measure regulatory governance and *not* regulatory incentives structure. In the United States, researchers have studied the relationship between incentive regulation and telco performance[43] for several years, shedding light on the ranking of price regulation, price-cap, earning-share and rate of return regulation. They assume the regulatory framework as a given, and it is not subject to study. After all, the FCC and the state regulatory commissions have more than 60 years of experience. My index, then, is an attempt to set the regulatory framework and *its development* in telecommunications for selected Latin American countries.

Second, my index tries to capture objective aspects that a sound regulatory framework should have. Thus it reflects the letter of law and is silent about how the law as applied. When I assign a 1 to those countries with legislation that says that the regulators cannot be freely removed, I am assuming that this is accurate. However, day-to-day politics can deviate from legal theory. A recent case in Bolivia is illustrative.

Bolivia's regulatory body has its own budget, and its members are selected by two-thirds of the congress. It has authority to enforce relevant legislation and set tariffs. Its legal status was conferred under congressional law. It appears an ideal model, but the following report from

[43] See the survey by Kridel et al. (1996) and Berg and Foreman (1996).

Pyramid Research (1998, p. 145) reveals shortcomings. "Following controversy over the activities of the first administration at the helm of the Superintendent regarding the awarding of concessions that violated ENTEL's monopoly, the Bolivian Congress voted in a new telecom regulatory administration in October 1997 for a six-year term that will end in 2003. The fact that the Bolivian Congress was able to remove the Superintendent because of a decision that threatened ENTEL's market share does not reflect positively on the autonomy and transparency of the regulatory body. This signifies that the Congress's decision had more weight than the law." I did not attempt to correct for such weakness by including the beliefs of practitioners or experts about the performance of a regulatory body and then weight it accordingly over time (as in, say, the various rating systems for U.S. state regulatory agencies). The actual index would reflect only the letter of the legislation and the day-to-day (year-to-year) evolution of the regulatory tasks by the regulatory authority.

Third, I was not able to include more factors regarding autonomy, transparency, accountability and clarity of roles. With more factors, the value of the index for most of the countries would go down, but it would be a more comprehensive measure of changes in a country's regulatory framework standing. This work realistically can be done, and I am currently working on improvement and fine-tuning of the index.

The existing index involves mistakes of interpretation. This is a second-generation effort to construct a useful index and the availability of better information will allow me to develop a better index in the future. The index has low correlation with the economic, demographic and institutional variables presented in Table 1.

Table 7 presents some averages of the regulatory framework for the 24 Latin American and Caribbean countries for different periods of time. Countries like Chile, the Dominican Republic and Trinidad and Tobago started well ahead of the rest, and their progress in strengthening the regulatory framework was small. The case of Chile catches our attention because it was one of the first countries that enacted a modern telecommunications law and one of the firsts to privatize. It has enjoyed a very stable regulatory environment, its telecommunications sector is very competitive and there exists a long tradition of sound judiciary and so on. However, Chile does not have an independent regulatory body, measured by factors a) and b) of the ITU/Tenenbaum criteria. Except for the 1981-82 years, the index has been kept constant for this country. The Dominican Republic is also interesting given the long existence of a private monopoly. Dominican Republic telecommunications reform has been more oriented toward opening the market to competition and recently toward developing a more independent regulatory authority. This is an example of a country where, despite not having an autonomous regulatory body, the government agency responsible for regulating the sector was empowered to set tariffs and fine operators. It had some of the ITU/Tenenbaum factors.

Some countries have had a similar evolution in the regulatory framework. The Central American countries (El Salvador, Guatemala, Honduras, Nicaragua and Panama) present a similar pattern in the process of developing the regulatory framework.

Bolivia, Brazil, Colombia and Perδ have reached the upper bound of the regulatory framework (Table 6), but this does not mean that the regulatory framework is done. As I mentioned before, it just means that those countries have apparently progressed in the right direction in terms of institutional factors comprising this second-generation index.

In general, an effort by almost all countries in the region to develop the regulatory framework is clear, whether or not they have privatized their telecom operator. However, more has to be done. The index is subject to a lot of improvement but it is another step forward in understanding the regulatory framework in the Latin American telecommunications sector.

Table 7: The Regulatory Framework Index for Telecommunications, 1980-97

Country	80-89	91-97
Argentina	0.34	0.72
Barbados	0.48	0.48
Belize	0.36	0.69
Bolivia	0.34	0.50
Brazil	0.34	0.53
Chile	0.70	0.72
Colombia	0.34	0.67
Costa Rica	0.14	0.40
Ecuador	0.14	0.63
El Salvador	0.14	0.25
Guatemala	0.34	0.44
Guyana	0.28	0.80
Honduras	0.14	0.36
Jamaica	0.48	0.66
Mexico	0.34	0.49
Nicaragua	0.14	0.34
Panama	0.14	0.24
Paraguay	0.14	0.36
Peru	0.34	0.67
Dominican Republic	0.62	0.63
Suriname	0.14	0.14
Trinidad and Tobago	0.64	0.85
Uruguay	0.24	0.37
Venezuela	0.34	0.61

7. Conclusions

In this paper I described how the telecommunications reforms have developed across Latin American and Caribbean countries and how privatization reform has been pushed as nowhere else. After the privatization of British Telecom in the United Kingdom (the first privatized telecom operator in the western capitalist economies), Latin American countries followed suit. Chile's initiatives served as an important model, but the way privatization took place was different across countries. This point deserves to be further studied and analyzed.

The liberalization of the main telecom markets has, however, been slow. Unfortunately, at the time of privatization, governments across the region gave monopoly power to the new owners, reducing the beneficial impact of the ownership reform. For some countries, the exclusivity periods are about to end, and open or partial competition will be possible. A by-product of the concession of exclusivity period has been the entrenchment of the incumbents and the appearance of anti-competitive behaviors.

Lastly, I presented a second attempt at constructing an index of the regulatory framework for the telecommunications sector (basic services). The index is based on some of the main factors recommended by policy analysts and practitioners. The broad categories are: autonomy, accountability, transparency and clarity of roles. To operationalize an index, some factors related to these categories were analyzed, such as independence of funding of the regulatory body, constraints on the executive to freely remove the regulators, the capability of the regulatory body

to set tariffs and enforce the norms. Also, consideration was given to the legal status of the norms that created the regulatory body (and telecom rules). The outcome has been a conscious effort in most counties to build (legally) the regulatory framework. A major shortcoming of the index is that it reflects the letter of the legislation. Events and politics may mean that the law can be circumvented. The regulatory framework index needs to be extended to incorporate such factors.

APPENDIX A
VARIABLES AND MAIN LEGISLATION PER COUNTRY

Source of the Variables.

MLINES is main telephone lines: each line represents "a telephone connecting the subscriber's terminal equipment to the public switched network and which has a dedicated port in the telephone exchange equipment." Main lines per 100 inhabitants or *teledensity* is derived by taking (Main Lines/Population) *100. It is taken from ITU Database World Telecommunications Indicators 1997a.

GDPPC is the GDP per capita in 1990 U.S. dollars; *TRADEGDP* is the ratio (export plus imports)/GDP and; *VSERGDP* is value added in the service sector as a percentage of GDP. These variables are taken from the (public) IADB Social and Economic Database.

URBAN, urban population, represents the degree of urbanization. It is derived by taking (urban population/total population). *DENSITY*, population density, is found as total population/ area. These variables are taken from the World Bank, "Economic and Social Indicators 1997 CD-ROM".

ICRG index is compiled by the IRIS (Center for Institutional Reform and the Informal Sector at the University of Maryland) by using the Political Risk Services Group Information. This is a private international investment risk service company that employs experts to provide political and economic risk ratings of countries. I used the composite index that is made up of five components.

GOVTYPE index was constructed using the data provided by Jaggers and Gurr (1996). I follow Londregan and Poole (1996) and combine the two measures of DEMOC and AUTOC (democracy and autocracy) to construct GOVTYPE. S = DEMOC - AUTOC. This raw measure creates a 21-point scale with a floor of –10, and a ceiling of 10. Applying the logistic transformation to it, we get GOVTYPE(S) = ln(S + 10.5) – ln(10.5 – s). This converts scores to a truly continuous scale. A value of S at 10.5 would correspond to a T(S) of 4; an S of –10.5 corresponds to a T(S) at -4. The Polity III database also contains information on eight indicators of political framework: (1) Regulation of Executive Recruitment; (2) Competitiveness of Executive Recruitment; (3) Openness of Executive Recruitment; (4) Institutional independence of chief executive: (5) Constraints on Chief Executive; (5) Regulation of Political participation; (6) Competitiveness of Political Participation; and (7) Centralization of State Authority). For a more detailed description see Jaggers and Gurr (1995).

THE ECONOMIC FREEDOM INDEX was constructed using the data provided by the Economic Freedom Network. The index is based on four major areas: (1) money and inflation, (2) structure of the economy, (3) takings and discriminatory taxes, and (4) international trade. The index I use

is the simple sum of the four developed by Gwarthy and Robert (1997). The index is available for every five years starting in 1980 (1985, 1990 and 1995).

INSTINV or Institutional Investor Index is the average of the Country Credit Rating index that the *Institutional Investor* magazine publishes twice a year (March and September). The index goes on a scale of 0 to 100, with 100 representing those with the least chance of default. The sample of the study ranges from 75 to 100 banks, each of which provides its own ratings.

EUROMONEY is the average of the country risk rating index that *EUROMONEY* magazine publishes twice a year. The index also goes on a scale of 0 to 100. The index is composed of nine categories each with different weighting. Economic performance and political risk account for 50% of the total index.

CELLSUB variable is the number of cellular subscribers per 100 inhabitants, taken from the ITU Database World Telecommunications Indicators 1997.

EFFICIENCY is the efficiency or productivity index. It represents the total main phone lines per telco employee. This index is constructed by using the total main phone lines and the total full telecommunications staff indicators provided by the ITU database disk.

THE STRUCTURAL POLICY INDEX is taken from IADB (1997). Latin America After a Decade of Reforms, Economic and Social Progress in Latin America, 1997 Report, Washington, D.C. This index was constructed by Eduardo Lora an IADB researcher. His index covers 20 countries in the region from 1985 to 1995. "The structural policy index is a simple average of the policy indices of the following five areas: (i) trade policy, (ii) tax policy, (iii) finance policy, (iv) privatization, and (v) labor legislation. Each of the basic indices can move on a scale of 0 to 1, where 0 corresponds to the worst observation for any year and any country within the period and countries considered, and 1 is the best" (IADB, 1997, p. 95). The most important feature of the index is that it reflects policy variables, like tariffs, tax rates and so on, and not results variables like ratio of exports to GDP and so on

THE GENERAL REFORM INDEX is a joint work of researchers in the ECLAC: Morley Samuel, Roberto Machado and Stefano Pettinato. This index covers 17 countries in the region and extends Lora's index by adding another reform dimension and more years. The new dimension of reform is the control of foreign capital transactions. This index covers a period of years from 1970 to 1995.

Argentina.
1. Ley 19,789 de 1972. Ley Nacional de Telecomunicaciones
2. Decreto Ejecutivo 1,185 de 1990. It created the National Telecommunication Commission, NTC.
3. Decreto 1,260 de 1996. It merged the NTC with the National Post and Telegraph Commision into the National Communication Commission.
4. Decreto 1,620 and 1,626 de 1996. It set the Organizational structure of the Communications Secretary and the National Communication Commission.
5. Decreto 80 de 1997. It created the National Communications Commission.
6. Decreto 1,304 de 1998. It created the Subsecretary of Communications under the Secretary of Communications and assigned its responsibilities.

Barbados
1. Public Utilities Act of 1978. It set the regulatory norms of Public Utilities.

2. Telecommunications Act of 1991. It established the norms regarding all telecommunications services and matters.

Belize
1. Telecommunications Act of 1987. It set the general norms for telecommunications services.

Bolivia
1. Ley General de Telecomunicaciones. It defined the telecommunications services and created the Directorate for Telecommunications (Direcci∴n General de Telecomunicaciones).
2. Ley SIRESE or Ley 1,600 de 1994. It created SIRESE (Sistema de Regulaci∴n Sectorial) tasked with providing oversight for five utility sectors, including Telecommunications. It created the Superintendence of Telecommunications.
3. Ley de Telecomunicaciones de 1995 o Ley 1,632 de 1995. It set general norms, responsibilities and roles of the Superintendence of Telecommunications.

Brazil
1.Decreto-Lei de 1967. It created the Minister of Communications.
2.Lei Minima de 1996 ou Ley 9.295 de 1996. It established regulations about telecommunications services.
3.Lei 9,472 de 1997. It created ANATEL (AgΛncia Nacional de TelecomunicaHτes) as the regulatory agency for telecommunications in Brazil
4.Decreto 2,338 de 1997. It set ANATEL (AgΛncia Nacional de TelecomunicaHτes).

Chile
1.Decreto 1,762 de 1977. It created the SubSecretary of Telecommunications and set its responsibilities.
2.Ley General de Telecomunicaciones de 1982, or Ley 18,168 de 1982. It set the norms for telecommunications services. It (re)set the responsibilities of the Subsecretary of Telecommunications.

Colombia
1.Decreto 3,069 de 1978. It empowered the National Board of Public Services with the responsibilities of setting tariffs and control telephone rates.
2.Decreto 129 de 1976. It separated regulatory activities from the operating ones. The regulatory activities are granted to the Minister of Communications.
Decree 2122 de 1992. It reorganized the Minister of Communications and created the CRT (Comisi∴n de Regulaci∴n de Telecomunicaciones) Regulatory Commission of Telecommunications.
3.Ley 142 de 1994. It (re) created the CRT and set its final responsibilities.

Costa Rica
1.Decreto-Ley 3226 de 1963. It created the ICE (Instituto Costarricense de Electricidad).
2.Ley 7,593 de 1996. It created ARESE (Autoridad Reguladora de Servicios Publicos), the regulatory agency for public utilities and set its responsibilities and roles.

Ecuador
1.Ley Especial de Telecomunicaciones de 1992. It set a supervisory body to rule the telecommunications sector.

2.Ley Especial de Telecomunicaciones Reformada. de 1995. It created CONATEL (Comisi∴n Nacional de Telecomunicaciones), SENATEL (SecretarPa Nacional de Telecomunicaciones) and SUpTEL (SuperIntendencia de Telecomunicaciones) as regulatory bodies for the telecommunications in Ecuador.
3. Modificaci∴n a la Ley Especial de Telecomunicaciones Reformada o Decreto-ley 17 de 1997.

El Salvador
1.Ley de Creaci∴n de la SIGET, Decreto No 808 de 1995. It created the SIGET (Superintendencia General de Electricidad y Telecomunicaciones and set its responsibilities and roles.
2.Decreto Legislativo No 807 de 1996 o ley de Telecomunicaciones. It created the general norms that rule the telecommunications sector.
3.Decreto 142 de 1997, o (nueva) Ley de Telecomunicaciones. It re-set the norms and regulations for the telecommunications sector and the roles and responsibilities of SIGET.

Guatemala
1.Decreto No 94 de 1996. Ley General de Telecomunicaciones. It set the norms that rule the telecommunications sector in Guatemala. It created SIT (Superintendencia de Telecomunicaciones) as the regulatory body responsible for regulating the sector.
2.Decreto 115 de 1997, o Reforma a la Ley General de Telecomunicaciones. It supplemented the Decreto No 94 de 1996 and amended.

Guyana
1.Public Utility Commision Act No 26 of 1990. It created the Public Utility Commission as the regulatory body for telecommunications and energy.
2.Telecommunications act No 28 of 1990. It established the regulatory norms for telecommunications.
3.Acts No 10 of 1990 and 14 of 1994. They set minor amendments to the Public Utility Commission Act No 26 of 1990.

Honduras
1.Decreto No 185 de 1995 o Ley Marco del Sector de Telecomunicaciones. It set the general norms for the telecommunications sector and created CONATEL (Comisi∴n Nacional de Telecomunicaciones) as the regulatory body in telecommunications.
2.Acuerdo No 89 de 1997. It established new regulation for telecommunications.

M9xico
1. Ley de VPas Generales de Comunicaci∴n de 1940. It set the norms regulating the telecommunications sector and responsibilities given to the SubsecretarPa de Telecomunicaciones SCT.
2.Modificac∴n al TPtulo de Concesi∴n de Telmex de 1990. It set the responsibilities of the SCT regarding pricing policies and policing Telmex's concession.
3.Reglamento de Telecomunicaciones de 1990. It set some norms that regulated telecommunications sector.
4.Ley Federal de Telecomunicaciones de 1995. It set modern rules and regulations for telecommunications in Mexico. It mandated the creation of a regulatory agency responsible for regulating the telecommunications services.
5.Decreto Presidencial de 1996 crea COFETEL (Comisi∴n Federal de Telecomunicaciones) as the regulatory authority for telecommunications.

Nicaragua
1.Decreto No 1,862 de 1971. It created the DGTN (Direcci∴n General Nacional de Telecomunicaciones)
2. Decreto 1,053 de 1982. It created TELCOR (Instituto Nicaragηense de Telecomunicaciones y Correos) as the regulatory and operating telecommunications agency.
3.Ley 200 de 1995 o Ley General de Telecomunicaciones y Servicios Postales. It established TELCOR as the regulatory body in telecommunications and created ENITEL (Empresa Nicaragηense de Telecomunicaciones) as the operating company.

Panama
1.Ley 80 de 1973. It established INTEL (Instituto Nacional de Telecomunicaciones) as the regulatory and operating telecommunications agency in Panama.
2.Ley 26 de 1996. It created ENTE (Ente Regulador de los Servicios Pδblicos) as the regulatory body responsible for all the public utilities.
3. Ley 31 de 1996. It established the norms and regulations for the telecommunications sector.
4.Decreto Ejecutivo No 73 de 1997. It set the regulations for ENTE.

Paraguay
1.Ley 642 de 1995. It created CONATEL (Comisi∴n Nacional de Telecomunicaciones) as the regulatory body for telecommunications in Paraguay.
2.Decreto 14,135 de 1996. It defined telecommunications services.

Perδ
1.Ley 19,020 de 1971. It empowered ENTEL-Perδ as the sole provider of telecommunications services in Perδ. It set that ENTEL is under the Ministerio de Transportes y Comunicaciones.
2.Decreto-Ley 702 de 1992. It mandated the creation of a regulatory authority for telecommunications.
3.Decreto Supremo 013 de 1993. It created OSIPTEL (Organismo Supervisor de la Inversi∴n Privada en Telecomunicaciones) as the telecommunications regulatory authority.
4.Decreto Supremo 06 de 1994. It set the general norms for telecommunications.
5.Decreto Supremo 062 de 1994. It set the responsabilities and roles of OSIPTEL.
6. Decreto Supremo 004 de 1996. It set the responsibilities for OSIPTEL and the Ministerio de Telecomunicaciones.
7. Decreto Supremo 002 de 1999. It set amendments to el Reglamento General de la Ley de Telecomunicaciones.

Dominican Republic
1.Ley de Telecomunicaciones de 1966.
2.Ley 153 de 1998 o Ley General de Telecomunicaciones. It set modern norms and regulations for telecommunications and mandated the creation of a regulatory body for telecommunications.

Suriname
1.Amendment to the Government Ordinance of July 26, 1945 of 1993. It set the general norms for telecommunications.

Uruguay
1.Decreto-Ley 14,235 de 1974. It created ANTEL (Administraci∴n Nacional de Telecomunicaciones) as the telecommunications operator under the Ministerio de la Defensa.

2.Ley de 1984. It created the Directorio Nacional de Telecomunicaciones (DGT) under the Ministerio de la Defensa as the regulatory agency.

Venezuela
1.Ley de Telecomunicaciones de 1940. It set the telecommunications norms.
2.Decreto Presidencial 1,826 de 1991. It created CONATEL (Comisi∴n Nacional de Telecomunicaciones) as the regulatory body under the Ministerio de Transportes y Comunicaciones.

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