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***Dealing with Public Interest in the Changing Nature of the Provision  
of Infrastructure Services, with emphasis on the Telecom Sector***

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Abstract

The so-called ‘infrastructure’ services such as roads, railways, ports, public utilities and telecommunication services have been traditionally thought of as state-owned activities, due to the ‘public good’ aspects of their provision. For many countries the state has been the sole purveyor of these services to the public. Recently this situation has come under revision, with the privatization, liberalization, and deregulation of many of these infrastructure services now underway in several countries of the world. Such efforts have changed the nature of the state/private sector relationship.

The changing nature of ownership of infrastructure services has been put into question, as national efforts at restructuring aim to make markets more contestable through greater competition. Greater efficiency is now being viewed as the prime factor behind the generation of more cost-effective infrastructure services for the public. Separation of the use of the service itself from the provision of the infrastructure is a key consideration in this new approach to the provision of services. This has been the approach taken in the telecommunication sector, particularly emphasized in this paper. The state can continue to play a key role, however, through the adoption of appropriate regulatory policies which will foster not only more efficient service output but also serve to stimulate economic development and promote welfare. In the Caribbean region, countries should take into account considerations of market size when designing regulations to bring about an appropriate competitive structure for infrastructure services, especially telecommunications.

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## **INTRODUCTION**

In most countries government or the public sector has traditionally been the sole purveyor of infrastructure services such as telecommunications, railroads, roads, port services, electricity, gas, water and sanitation services. The public sector has thus enjoyed a monopoly position in ownership and regulation of these infrastructure services. Such a policy was designed to prevent market failure and to protect the public interest. As private firms pursue profit maximization as the goal in their economic activities, it was felt that such the pursuit of such a narrow objective would hamper resource allocation in infrastructure services where public interest is the main focus. Therefore, the government took over these activities in order to decrease risk and avoid market failure through public provision of the service and through appropriate regulations.

The above perception has come under considerable revision in recent years. Technological innovations and the ongoing process of increasingly integrated national markets due to globalization have made the justification for the purpose and the existence of state-owned monopolistic infrastructure and regulation obsolete. Technological advances and growing trade have meant that public services are now exposed to internationally competitive markets and are no longer isolated within national boundaries. International competition has made the sole public provision of infrastructure services inefficient with respect to both public interest and resource allocation. In light of this changed situation, many governments are acting to liberalize their infrastructure services through privatization and/or the introduction of competition in other forms.

As shown in Table 1, investment in privatized state enterprises has been steadily growing worldwide, especially in developing countries. Countries in the East Asia and Pacific region invested up to US\$37 billion in 1997, which is more than sixteen times the amount invested in 1990 (US\$ 2.3 billion). In terms of value, Latin America and the Caribbean region financed the largest volume in privatization: US\$13 billion in 1990 and US\$ 66 billion in 1998, with East Asia and the Pacific accounting for only US\$9 billion during the same year.

Liberalization and deregulation of infrastructure services are not limited to developing countries only. These are key issues as well for developed countries. The United States, for example, began to deregulate its US \$215billion electricity market in 1998<sup>1</sup>. The *Financial Times* has reported that nine individual states (California, Montana, Illinois, Michigan, New York, Massachusetts, Rhode Island, New Jersey, and Pennsylvania) have either finalized a prescriptive legislative or regulatory plan or begun to phase in retail access to electricity, and that 24 states have begun allowing consumers and wholesalers a choice in electricity markets. The issue of deregulation in utilities is still actively debated inside the country.

This paper focuses the discussion of liberalization and deregulation of publicly-provided infrastructure services, with particular emphasis on the telecommunications sector. This emphasis is due to the important role this sector plays in both economic growth and the overall efficiency of national economies, as well as to the extraordinary changes that have been brought about in communications through rapid technological developments. Liberalization of telecommunications activities and the introduction of greater competition in domestic markets have gone hand in hand with privatization and the creation of independent regulatory bodies. The paper discusses the issues of privatization, competition, the economic benefits of liberalization, and the need for an adequate regulatory framework. It concludes with suggestions for telecommunication reform in the Caribbean.

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<sup>1</sup> Financial Times. December 8, 1999.

**Table 1. Investment in Infrastructure Service Projects with Private Participation in Developing Countries by Sector and Region, 1990-1998 (1998 US\$ billions)**

	1990	1991	1992	1993	1994	1995	1996	1997	1998	Total
<b>Sector</b>										
Telecommunications	6.6	13.1	7.9	10.9	19.5	20.1	33.4	49.6	53.1	214.0
Energy	1.6	1.2	11.1	14.3	17.1	23.9	34.9	46.2	26.2	177.1
Transport	7.5	3.1	5.7	7.4	7.6	7.5	13.1	16.3	14.0	82.2
Water and sanitation	0.0	0.1	1.8	7.3	0.8	1.4	2.0	8.4	1.5	23.3
<b>Region</b>										
East Asia & Pacific	2.3	4.0	8.7	15.9	17.3	20.4	31.5	37.6	9.5	147.2
Europe & Central Asia	0.1	0.3	0.5	1.5	3.9	8.4	10.7	15.3	11.3	52.0
Latin America & Caribbean	12.9	12.3	17.1	18.0	18.4	19.0	27.4	45.1	66.3	236.5
Middle East & North Africa	0.0	0.0	0.0	3.3	0.3	0.1	0.3	5.2	3.6	12.8
South Asia	0.3	0.8	0.1	1.2	4.3	4.0	11.4	13.7	2.3	38.1
Sub-Saharan Africa	0.0	0.0	0.1	0.0	0.7	1.0	2.0	3.5	2.3	9.6
<b>Total</b>	15.6	17.4	26.6	39.9	44.9	52.9	83.3	120.4	95.3	496.2

Source: World Bank

## PRIVATIZATION

Liberalization in state-owned infrastructure services generally involves both privatization and steps to create a more competitive market.<sup>2</sup> Some developing countries privatize public provision of infrastructure services as an initial step towards liberalization and introduce competition afterwards. Other countries introduce competition as well as privatization simultaneously. The sequence of privatization and the move to competitive markets depends upon the market readiness and political-economic environment of a country.

<sup>2</sup> Petrazzini, 1996.

Under a broad definition, privatization means both deregulation and the transference of established property rights in infrastructure services from public to private ownership and control. Deregulation is a means to privatize public infrastructure by lifting regulations on new entrants. More commonly, however, privatization refers to a transfer of property rights for infrastructure services from the public to the private sector.

In the 1990s, numerous developing countries have increased the participation of the private sector in infrastructure services. According to the World Bank, telecommunications and energy have been the leading sectors in attracting private sector participation, in particular in Latin America and East Asia (Table 1). Investment in telecommunication projects with private participation for all developing countries grew between 1990-1998 from around US\$7 billion to nearly US\$53 billion. Cumulative investments in telecommunications amounted to 43 percent of flows to all infrastructure service sectors during that period.<sup>3</sup>

When introducing privatization, governments face a problem of information asymmetry. Every private firm has its own information on production costs that are not easy for the government to observe *ex ante*. It is natural that firms are reluctant to disclose this information which serves to shape strategic behavior. Governments must resolve the information asymmetry problem by devising schemes to motivate firms to volunteer this information in order to help in better monitoring the privatized activity.

Methods of privatization vary according to countries and sectors. There are several ways to privatize: this may be done through auctions, tenders, direct negotiations, stock exchange, and/or public offers. This paper discusses auctions and public offers because these two methods are the most prominent ones employed by governments and are also the most effective in resolving/preventing the problem of information asymmetry.

### ***Auctions***

Public auctions can help minimize rent from privatization. Regulators may set a

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<sup>3</sup> Roger.

qualification standard and require that only market participants who meet such qualifications can be bidders. Eligible market participants willingly reveal their private information on production costs when bidding. A government selects only one firm among several qualified bidders and provides the franchise right to the winning bid. Bidders know this fact and have a tendency to take advantage of it: that is, they might reveal false information on production costs that are lower than the actual ones in order to win the bid. Under the low bidder winning mechanism, a government may have an adverse selection due to that strategic behavior of firms.

To prevent an adverse selection, a government can link the compensation rules under the franchise to the winning bid.<sup>4</sup> Interpreting that a low bid transforms into a high production cost after the contract, the government can tail a note on bidding announcement that the winning bidder will share additional costs. According to many scholars, a manner of doing so is likely to promote more aggressive bidding.

Argentina, Chile, and Mexico enacted an auction policy to prevent the information and rent seeking activities of firms when liberalizing basic telecommunications services.<sup>5</sup> During the bidding process, such countries received more than one bid from potential suppliers<sup>6</sup>. It implies that they were capable of preventing the bidders from extracting information rents. After liberalization, all three countries ended up with a monopoly in basic telecommunications: CTC (Compania de Telefonos de Chile) maintains 91 percent of basic telecommunications service share in Chile. Before the end of its concession for local and domestic and international distance in 1998 and in 1997, TELMEX (Telecomunicaciones Mexicanos) enjoyed monopoly services in Mexico's market. Argentina's basic telecommunications monopoly, ENTEL (Empresa Nacional de Telecomunicaciones) was divided into two regional monopolies in 1990: Telefonica de Argentina became a monopoly provider of local, long distance and international services in the south and Telecom

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<sup>4</sup> Galal, et. al. 1995.

<sup>5</sup> Ibid.

<sup>6</sup> Ibid.

Argentina in the north.<sup>7</sup>

### ***Public Offers***

The sale of stakes through public offering represents a privatization method by which the state shares are put up, for a pre-determined period and at a set price, for sale to the population through a commercial bank or other financial institution, which is a professional participant at the statutory capital.<sup>8</sup> This means of privatization is designed to distribute the property rights of an infrastructure service from the state to a large number of the population. Therefore, the information asymmetry problem is not in question. Thus sale of stakes through public offerings is considered to proceed in an objective and transparent way that mitigates the political pressures that usually arise in the privatization process. On the other hand, the price set for such public offers is often quite high and the process can be quite costly.

Table 2 shows that three East Asian<sup>9</sup> countries (Korea, Malaysia and Singapore) used public offering as the means to privatization in the telecom sector. All three countries, however, sold only a part, and not the totality of the stakes in the former monopoly supplier (20 percent in the case of Korea, 25 percent for Malaysia, and 11 percent for Singapore). This partial liberalization contrasts with the approach adopted by Latin American countries (Argentina, Chile, Mexico, and Peru), who chose to completely privatize their monopoly telecom supplier when they introduced privatization in telecom infrastructure.

***Table 2. Privatization of State Telecommunications Operators***

<i>Country</i>	<i>Status of Privatization</i>
Argentina	ENTEL completely privatized in 1990.
Chile	CTC and ENTEL completely privatized in 1988
Korea	Korea Telecom privatized since 1993, 20 percent sold.
Malaysia	Telekom Malaysia privatized in 1990, 25 percent sold.
Mexico	Telmex completely privatized in 1994.
Peru	CPT and ENTEL completely privatized in 1994.

<sup>7</sup> Cowhey, et. al., 1999

<sup>8</sup> Republic of Moldova, 1999

<sup>9</sup> Ibid.

Singapore	Singapore Telecom privatized since 1990, 11 percent sold. 25 percent to be sold by 2002.
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\* ENTEL: Empresa Nacional de Telecomunicaciones

\* CTC: Compania de Telefonos de Chile

\* Telmex: Telefonos de Mexico

*Source:* Hufbauer, et. al. 1998, Cowhey, et. al. 1999 and Singh, 1998.

J.P. Singh concludes in his study that after privatization: “service provision remains beholden (and often limited) to pressures from large user groups and governmental prerogatives in most countries, market competition is either slow to emerge or messy where present, and difficult to manage, and while the ‘dirigiste’ top-down “East Asia Model” continues to break down, the liberal alternative of bottom-up pressures and poses serious problems in terms of its evolution.”

Evidence available to date from all regions indicates that developing countries that have privatized their telecommunications systems have experienced much faster growth in their networks than those that have retained a state monopoly. In Asia and Latin America, teledensity growth in countries with privatized telecommunications has been double that of countries with monopoly markets during each of the five years following privatization.<sup>10</sup>

## COMPETITION

A parallel component of the reform of infrastructure services, alongside privatization, is the introduction of competition. This is feasible when there are enough private firms in a given domestic market with the capacity to manage such bulk size infrastructure projects. Faster economic growth has propelled the private sector’s involvement in economic activities and enriched the economic capacity of the private sector in many countries enough to handle infrastructure services.

However, in many cases the domestic market is too small to support several large firms capable of purchasing service infrastructure activities. In this situation, introduction of competition may also be brought about through allowing foreign firms to participate in the provision of infrastructure services on domestic markets. Governments may open their

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<sup>10</sup> Petrazzini, the World Bank Group, Note No. 96.



market to foreign firms and investors through the lowering of legal and other barriers to foreign entrants in infrastructure service markets. When infrastructure service markets remain monopolized after privatization, governments can achieve the effects of competition through adopting a policy of market contestability. Only with efficient competitors, either domestic or/and foreign, will the introduction of competition be effective in service markets.

### ***Open Entry***

In general, governments bring competition into service markets after beginning the process of privatization, especially in the case of developing countries. However, carrying out this process simultaneously instead can prove a much less costly solution for governments as it allows them to resolve the problem of information asymmetry. When governments allow several service suppliers to compete each other as part of the liberalization process, then this competition should lead each participant to disclose its information voluntarily. Facing competition, firms choose to be transparent rather than to seek rent from lack of information disclosure in order to earn contracts.

With respect to entry policy, a state may choose to open an activity either fully or partially. When there are potentially several competent competitors, the government can completely liberalize market entry with respect to domestic and/or to foreign companies. However, confronted with relatively weak market conditions, the government may open entry only to qualified domestic firms through issuing licenses. In recent years, completely open entry has been the prevalent policy followed by most governments in liberalizing the telecommunications sector, and this has contributed to rapid technological progress. Many developing countries have embraced full competition, especially in long distance telephone calls, international phone calls, cellular phone calls, and value-added services. However, a large number of these governments have also chosen to have this competitive situation phased in over a certain period of time.

Table 3 shows the status of liberalization in various telecommunications activities in several developing countries. Chile and the Philippines have introduced competition by

opening entry completely and without discrimination to all telecommunications activities. They managed to resolve the information asymmetry problem through introducing competition along with privatization. However, this has been a slow process in practice. A gigantic telecommunication company still has a monopoly share in the market of each country: Compania de Telefonos de Chile (CTC) occupies 91 percent<sup>11</sup> of domestic basic telecommunications market in Chile and Philippine Long Distance Telephone (PLDT) maintains 94 percent of market share<sup>12</sup> in the Philippines.

Telefonos de Mexico (TELMEX) still maintains an effective monopoly in the local telephone market in Mexico since its privatization in 1994, although it has had to confront competition in long distance and international telephone services as of 1997 and in local services as of 1998, when exclusive concessions were finalized.<sup>13</sup> Six new entrants (both foreign and domestic) began long distance services after the end of Telmex's monopoly concession for domestic and international long distance calls in January 1997.

**Table 3. Status of Liberalization in Telecommunication Services**

Country	Market Structure				
	Local	Long Distance	International	Value-added Services	Wireless/ Cellular
Argentina	Duopoly	Duopoly	Duopoly	Competition	Competition
Chile	Competition	Competition	Competition	Competition	Competition
Korea	Monopoly	Competition	Competition	Competition	Competition
Malaysia	Monopoly	Competition	Competition	Competition	Competition
Mexico	Competition	Competition	Competition	Competition	Competition
Peru	Monopoly	Monopoly	Monopoly	Competition	Competition
Philippines	Competition	Competition	Competition	Competition	Competition

Source: Hufbauer, et.al, 1997 and Bradford, 1999.

All of the countries included in Table 3 allow competition policy in cellular and value-added services markets. Competitive providers are however subject to the obtention of licenses. Argentina and Chile have four licensed competitive cellular service providers,

<sup>11</sup> Bradford, 1999.

<sup>12</sup> Galal, et. al., 1995.

<sup>13</sup> Bradford, 1999.

while Mexico and Peru have two licensed providers.<sup>14</sup> It is interesting to note that all countries in Table 3 have liberalized their value-added and cellular telecom activities, while some still maintain a monopoly or duopoly in the provision of basic services (local, long distance, and international). The latter basic services are usually those liberalized most slowly.

### ***Market Contestability***

Telecom regulators cannot observe a firm's production costs. Therefore, a threat to the effectiveness of a contract granted to a telecom provider exists 'ex post' due to the imperfect knowledge possessed by regulators 'ex ante'. Once the franchise contract is granted, the lack of competitive behavior by the firm may become evident. The firm may utilize its position to neglect its duty to operate efficiently, i.e. it may inflate its production costs and/or it may provide low quality of services.

To mitigate this situation, a government can design a concession period and service quality expansion through procompetitive regulations. The government may give an exclusive concession to a telecom provider for a certain period of time, for example seven years. Before the concession period ends, regulators can evaluate the performance of the incumbent. If its performance is not satisfactory enough to meet certain conditions, the government can call upon an alternative producer to replace the incumbent. Acknowledging this concession, the incumbent would have an incentive to operate its firm efficiently. For example, Argentina, Chile, and Mexico have all included provisions in the operator's license or the sale contract to obligate private operators to meet specific network expansion and services quality targets, together with a provision that failure to meet these obligations gives the government grounds for revoking the concession and awarding it to another supplier. In contrast, Malaysia and the Philippines did not elaborate such specific requirements for network expansion and service quality targets in their regulatory framework.

The Argentine government awarded each of its two regional monopolies an exclusive concession until 2000 for domestic basic services only. The Mexican government granted

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<sup>14</sup> Bradford, 1999.

TELMEX a three-year exclusive concession for long distance and international services and a five-year concession for local service. The Peruvian government awarded Telefonica del Peru (TdP) an exclusive concession until end June 1999.<sup>15</sup> In all these cases, the objective of the governments was to allow the monopoly supplier time to adapt its operations in order to face competition after a certain date.

## **ECONOMIC BENEFITS OF TELECOMMUNICATIONS LIBERALIZATION**

### *Cost Savings*

It has been demonstrated that increased competition, combined with appropriately regulated markets, leads to lower prices for consumers. There is ample evidence from countries that have liberalized their long-distance markets to underpin this statement. For example, in Chile rates dropped by 40 percent following the introduction of competition in international services, and the number of customers doubled.<sup>16</sup> Analysts estimate that the prospective cumulative savings worldwide from telecom liberalization may be as high as \$1 trillion for the 1997-2010 period.<sup>17</sup> These savings should benefit all regions and consumers at all income levels within a country.

In addition to lower prices, increased competition also leads to better access to networks and better services. A 1997 ITU report on trade in telecommunications noted that in emerging markets, international traffic per subscriber grew by 11.7 percent per year from 1990 to 1995 where competition was allowed, compared with just 5.2 percent per year where there was a monopoly. The same effect, to a lesser extent, was found in developed markets.

Competition could also increase service quality. It spurs network build-out dramatically. Evidence exists that investment in telecommunications infrastructure is a strong predictor of economic growth. In order to accelerate economic development, countries need to create policy environments that are conducive to a high level of investment in the telecommunications sector. Competition tends to multiply the incentives for investing

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<sup>15</sup> Cowhey, et.al., 1999.

<sup>16</sup> The Economist, 1999.

<sup>17</sup> According to estimates by Hufbauer, cited in Globerman and Hagen.

surplus revenues on network build-up. In order for these benefits to accrue, governments may need to simultaneously privatize infrastructure activities, which may be carried out independently of the service provision activities of telecom firms.

The provision of new services and value-added taxes that governments may collect on the commercial activities of telecom operators will also create new revenue streams for governments, who fear the loss of a traditional source of income. In the long run, revenue from taxable value-added activities of telecom providers can produce more income for the government than the initial divestiture of its national telecommunications entity.<sup>18</sup>

### ***Foreign Investment***

Opening the telecommunications sector to foreign investment has generally proven to have positive effects on the development of telecommunications infrastructure and its operation, as well as on lowering the final cost to consumers. Some governments have limited the degree of foreign ownership they allow in the sector, usually to an equity share of less than 50 percent. Table 4 shows that Mexico allows foreign ownership to a ceiling of 49 percent, Korea 33 percent and the Philippines 40 percent.

Some governments, Chile for example, do not impose any foreign equity limits, while others allow full foreign ownership for new entrants but impose some limits for incumbent suppliers. Many governments have chosen to phase in their commitments to increase foreign investment in telecommunications activities over a period of time, as seen above.

***Table 4. Restrictions on Foreign Ownership in Telecommunications***

<i>Country</i>	<i>Restriction on Foreign Ownership</i>
Chile	None
Korea	33 percent
Mexico	49 percent
Philippines	40 percent

*Source:* Hufbauer, et.al. 1997.

<sup>18</sup> Harr, 1998.

Nevertheless, it is important to recognize that the degree of foreign equity that governments allow in the telecommunications sector cannot be taken as an indicator of the actual or potential competition in the market, since all the foreign money may be invested in only one (including the incumbent state-owned) telecom supplier.<sup>19</sup> However, the benefits from foreign investment for the country will be greater, the more competitive the sector is, and the more market-based incentives exist for further investment.

In sum, many scholars assert that when liberalizing state-owned infrastructure services, competition is much more preferable to privatization. Privatization, transferring property right in infrastructure from public to private, usually ends up with private monopoly as shown in empirical cases in the telecom sector. The private monopoly that manages infrastructure services without government subsidies is most likely to focus on profit margins. Without competition the private monopoly has tendencies to undermine public interest through increasing consumer prices and providing low quality of services. Competition, however, lowers consumer prices, increases service quality, and induces foreign investment. In the telecom sector, for example, competition resulted in expansion of network and improvement of service quality (digitization). Such network expansion and digitization benefit consumers with reducing waiting time to get telephone service and call failure rate. To work competition out in a proper way, appropriate procompetitive regulation is required. It will avoid monopolistic negligence and enhance competition.

### **NEED FOR AN INDEPENDENT REGULATORY BODY**

Pro-competitive regulatory bodies are required to enhance efficient competition in liberalized infrastructure services. Private service providers and foreign investors prefer independent regulatory agencies, whereas regulators often prefer to place these under the government.

The WTO Agreement on Basic Telecommunications of February 1997 consolidated

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<sup>19</sup> Low, et.al. 1998.

the importance of an independent regulatory body in the Reference Paper that contains guideline principles relevant to the regulatory framework for basic telecommunications services. The following summarizes the guidelines contained in the Reference Paper.

- i) Governments should prevent anti-competitive practices, i.e. “engaging in anti-competitive cross-subsidization, using information obtained from competitors, and not making available to other suppliers on a timely basis technical information and commercially relevant information”.
- ii) Government shall assure that interconnection networks or services are made available to suppliers at any technically feasible point in the network. Such interconnection is to be provided a) under nondiscriminatory terms, conditions, and rates, b) “in a timely fashion, on terms, conditions and cost-oriented rates that are transparent, reasonable, having regard to economic feasibility, and sufficiently unbundled so that the supplier need not pay for network components or facilities that it does not require for the service to be provided” , and c) upon request, subject to charges. Governments must ensure that the regulatory body be transparent with respect to the procedures for interconnection negotiations and arrangements.
- iii) Governments have “the right to define the kind of universal service obligation”, which will be in accordance with other principles of an anti-competitive, nondiscriminatory, transparent, neutral nature.
- iv) Governments should guarantee the availability of licenses and should be clear with respect to the criteria and the period of time required for the application for a license and the terms and conditions for the granting of individual licenses.
- v) Governments shall separate the regulatory body from any supplier of basic telecommunications services. “The decision of and the procedures used by regulators shall be impartial with respect to all market participants.”
- vi) Governments shall ensure that any procedures for the allocation and use of scarce resources will be carried out in an objective, timely, transparent, and non-

discriminatory manner.

### ***Independence of the Regulatory Body***

While governments often oppose the creation of independent regulatory agencies, private investors, foreign investors, and telecom workers demand autonomous regulatory agencies to assist in the liberalization processes.<sup>20</sup> Independent regulatory agencies play a critical role, especially when governments retain ownership in telecommunication carriers. Autonomous regulatory bodies may prevent government-owned telecommunications carriers from engaging in negative monopolistic activities such as using unfair tactics to block interconnection, neglecting network expansion, and ignoring services of poor quality. If regulatory agencies remain under the government, then effective telecom operations will be difficult to bring about. As specified in the WTO Reference Paper on Basic Telecommunications, separation of regulatory bodies from government is a necessary element of the process of regulatory reform in telecommunications.

### ***Transparency***

It cannot be over-emphasized that transparency is the most important and fundamental principle in regulatory reform. Such transparency means publically known and available access to all of the laws, regulations, procedures, interconnection policies/agreements and administrative rulings of general application respecting any telecom matters which may affect operators. Such information must be published and/or made available in some form by governments. Ensuring transparency will ensure that two important goals are accomplished. One, in being aware of the relevant laws, regulations, and interconnection policies/agreements before it engages in economic activities, firms are able to make sound, long-term, economic efficient decisions. Second, such knowledge on the part of private telecom actors prevents market outcomes from being distorted.<sup>21</sup>

### ***Interconnection Policy***

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<sup>20</sup> Petrazzini, 1996.

<sup>21</sup> Feketekuty, 1999.



Interconnection policy, together with the efficient pricing of telecom services, is a third important component in a successful transition from monopoly to competition in the telecommunications sector. Interconnection policy requires incumbents with essential facilities to share existing networks with new entrants on economically efficient terms by allowing them, for example, to choose among the dominant carriers' network features. What is also essential is that the contracts of new entrants must clearly spell out the interconnection obligation of the dominant operators, the principles under which terms of interconnection will be negotiated, and the process and timetable for a regulatory decision if the parties fail to reach an agreement.<sup>22</sup>

***Actual Telecom Liberalization and Deregulation***

As already discussed above, all the five sample countries listed in Table 5 liberalized their telecommunications infrastructure services by separating the actual operations or activities from the regulatory function. Only the Philippines also separated the regulatory function from the policy-making function. While four countries established a regulatory agency as an independent government ministry, the Philippines created a semi-autonomous body for this purpose.<sup>23</sup>

***Table 5. Restructuring of Government Functions in Telecommunications***

	Separation of Operation/Regulation	Separation of Regulation/Policy	Type of Regulatory Agency
Argentina	Yes	No	Ministry
Chile	Yes	No	Ministry
Korea	Yes	No	Ministry
Mexico	Yes	No	Ministry
Philippines	Yes	Yes	Semiautonomous

Source: Hufbauer, et.al., 1997 and Cowhey, et. al., 1999.

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<sup>22</sup> Wellenius, 1997.

## INFRASTRUCTURE SERVICES IN THE CARIBBEAN

Infrastructure services in the Caribbean region are heavily monopolized by the public sector. This state-monopolization restricts competition in infrastructure services, such as ports and telecommunications. The telecom industry in the Caribbean in particular is “dominated entirely by private and government-owned monopolies, with the exception of paging services, some fixed based mobile services and Internet service providers.”<sup>24</sup> Cable and Wireless (C&W) has been a monopoly supplier of telecommunications services in the Caribbean region, controlling telecom services in eight English-speaking Caribbean countries and holding a 49 percent stake in another.<sup>25</sup> Despite prolonged persistent criticism targetting this monopoly, C&W is continuing to negotiate new licensing agreements with several Caribbean governments.<sup>26</sup> It has been reported that one Caribbean telecommunications minister stated earlier this year that C&W represented the “last vestige of British colonialism” in the region.

In terms of teledensity, as Table 6 reveals, the Caribbean is relatively high compared with Latin American countries. Table 6 shows that around 400 out of every 1000 persons have access to a phone in Antigua and Barbuda, Barbados, and St. Kitts and Nevis, whereas there is no single nation in Latin America that reaches this degree of teledensity. On average, the teledensity is much higher in the Caribbean than it is in Latin America. However, the comparable figure for Canada and the United States is over 600, representing a very large gap with the Caribbean.<sup>27</sup>

Table 7 summarizes the WTO commitments undertaken by Caribbean countries in the area of basic telecommunications. Only five countries in the region made commitments in international telecom services and facilities and foreign investment: Antigua and Barbuda, Dominican Republic, Grenada, Jamaica, and Trinidad and Tobago. However, most of these commitments are for the phasing in of future liberalization and deregulation of domestic

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<sup>23</sup> Hufbauer, et.al., 1997.

<sup>24</sup> Bradford, 1999.

<sup>25</sup> Financial Times, October 8, 1999.

<sup>26</sup> Ibid.

telecom markets, and many will become effective only after 2010.<sup>28</sup> Therefore, there will be no immediate effect on economic restructuring or growth as a result of these commitments. And only five of the 12 countries in Table 7 have committed to a future liberalization of foreign direct investment, the most important means to promote greater efficiency and more contestable markets.

**Table 6. Teledensity in the Western Hemisphere, 1997**

<b>Caribbean</b>	<b>Teledensity*</b>	<b>North America</b>	<b>Teledensity</b>	<b>Latin America</b>	<b>Teledensity</b>
Antigua and Barbuda	423	Canada	609	Guatemala	41
Barbados	370	United States	644	Honduras	37
Belize	133			Nicaragua	29
Dominica	263	<b>Latin America</b>		Panama	134
Dominican Republic	88	Argentina	191	Paraguay	43
Grenada	243	Bolivia	69	Peru	68
Guyana	60	Brazil	107	Uruguay	232
Jamaica	140	Chile	180	Venezuela	116
St. Kitts & Nevis	382	Colombia	148		
St. Vincent & Grenadines	171	Costa Rica	169		
Suriname	131	Ecuador	75		
Trinidad & Tobago	168	El Salvador	56		

\* Teledensity: Lines/1000 population.

Source: World Bank and International Telecommunications Union (ITU)

However, there is some movement towards liberalization in the Caribbean telecom industry. In the words of Christopher Tomas, Assistant Secretary-General of the Organization of American States (OAS), “Liberalization is a fact, it is ongoing.” Further, the World Bank has approved US\$6 million in financing to help reform telecommunications in five countries of the Organization of Eastern Caribbean States (OECS)<sup>29</sup>. This World Bank project is designed to introduce pro-competitive reforms in the telecom sector and to enhance information-related skills in Dominica, Grenada, St. Kitts and Nevis, St. Lucia, and St. Vincent and the Grenadines.<sup>30</sup>

<sup>27</sup> Primus, 1998.

<sup>28</sup> Stephenson, 1999.

<sup>29</sup> Members of the Organization of Eastern Caribbean States are Antigua and Barbuda, Dominica, Grenada, St. Kitts and Nevis, St. Lucia, and St. Vincent and the Grenadines.

<sup>30</sup> The World Bank, 1998.

*Table 7. GATS Commitments on Telecommunications by Caribbean Countries*

Country	Commitments under the WTO			
	Regulatory principles (Reference Paper)	Satellite services and facilities	Foreign Investment	International Services and Facilities
Antigua and Barbuda	Yes	No	Yes (2004)	Yes (2012)
Barbados	No	No	No	No
Belize	Yes	No	No	No
Dominica	Yes	No	No	No
Dominican Republic	Yes	Yes	Yes	Yes
Grenada	Yes	Yes (2006)	Yes (2004)	Yes (2006)
Guyana	No	No	No	No
Jamaica	Yes	Yes (2004)	Yes (2004)	Yes (2013)
St. Kitts & Nevis	No	No	No	No
St. Vincent & Grenadines	No	No	No	No
Suriname	No	No	No	No
Trinidad & Tobago	Yes	Yes	Yes	Yes

Source: WTO

According to the Financial Times report of October 8, 1999, officials in some Caribbean islands expect “.....the telecommunications market to be fully liberalized by the end of 2000.” The dilemma, however, is how to achieve this objective. Countries must deal with C&W regarding the issuing of licenses, which constitutes a considerable obstacle at present to liberalization. In fashioning their liberalization strategy, Caribbean governments must take into account the sequencing of privatization and competition, the need to resolve the problem of information asymmetry, the necessity of creating contestable market, and the creation of independent regulatory bodies, while taking into account market size and consumer needs. In designing this strategy, Caribbean governments may wish to consider the region as a whole in terms of the market rather than individual economies, and to thus appropriately coordinate their liberalization and deregulation strategies.

Once the Caribbean telecom market is liberalized, island economies can reach high levels of digitization in a very short time through modest investments and network upgrades,

due to their relatively small sizes.<sup>31</sup> Such liberalized telecom markets will accelerate the economic growth and development of the Caribbean economies, and give a particular boost to the tourism sector, in which most Caribbean countries are highly specialized.

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<sup>31</sup> Petrazzini, 1996.

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