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TELECOMMUNICATIONS IN THE CARIBBEAN: HOW HAS CHANGE BROUGHT THE WEST INDIES INTO THE TWENTY-FIRST CENTURY?

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ABSTRACT

This paper traces the roots of the movement to liberalize telecommunications, the introduction of competition and the subsequent reshaping of the industry in the Caribbean. Through a combination of evaluating statistical data and the reviewing of documents for legislation passed on the islands, the paper examines the mechanisms and challenges toward creating regulatory bodies to oversee telecommunications, as well as, assess the characteristics of the rise in competition in telecommunications services and service providers, the growth of the wireless sector, the desire to provide universal service. These considerations go toward answering the primary question: ‘To what extent, if any, have changes in telecommunications policies in selected Caribbean countries since 1990 achieved goals with respect to universal service and increased competition

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Chapter 1

Introduction

Statement of Topic

During the period from the mid 1990's until the early 2000's, the United States experienced a telecommunications boom which held a promising outlook for the industry, with forecasts of faster, cheaper and more convenient technologies.[1] Also occurring at this time was significant over-investment in telecommunications and the overall feeling that the technologies that were available would make telecommunications more competitive. These overall feelings of exuberance were also experienced in the Caribbean islands, whose governments, in response to these prognostications, formulated Telecommunications Acts and began taking steps to make the telecommunications sector's workings more transparent, in terms of the regulations, in the hope of attracting competitive entrants into their telecommunications sectors.

The changes over the past ten years have significantly altered the landscape of Caribbean telecommunications and have created some characteristics that are just now

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[1] See Couper, E. A., Hejkal, J. P. & Wolman, A. L. (2003). Boom and Bust in Telecommunications. Economic Quarterly.

being realized in the United States. One such characteristic can be seen in the fact that in many of the islands, despite the fully competitive nature of telecommunications, true competition is only taking place in the wireless sector, with landline service still being provided by the incumbent monopoly provider. As a result of the competitive nature of the wireless sector, and the effect of competition in driving down prices, it is now the case that seventeen out of twenty three islands surveyed have greater wireless penetration than wireline.[2]

Another development from the recent changes has been the adoption of universal service policies in the majority of islands, with the emphasis being on providing access to a telephone (pay phone) for each resident. However, given that wireless subscribership is high and wireline telephone penetration is over seventy percent for many of the islands, one wonders if the universal service requirements should be revised in favor of a more technologically neutral approach that expands universal service to include wireless service.

Given these interests, this thesis will examine the evolution of the telecommunications policy process in selected Caribbean economies to determine whether or not stated goals relative to universal service and competition were achieved. The process will then be analyzed to identify likely factors related to success or failure,

[2] This statistic was derived from reviewing penetration figures for the wireline and wireless segments of telecommunications using data from the World Factbook and CIA Country profiles.

and findings and/or recommendations will be made to inform decisions in other developing countries. This dissertation seeks to find answers to questions such as, to what extent do the recent telecommunications policies reflect influences of the United States and the United Nations/WTO? It is believed that by looking at this question a general idea can be gathered about how these islands view themselves with respect to the United States and the rest of the world. The dissertation seeks to determine specifically why the current telecommunications landscape has come to fruition. Given the recent adoption of universal service policies, this research seeks to find answers to the question of who funds universal service, given that many islands have higher penetration rates for wireless service than land line service. The paper also seeks to examine the driving forces behind the changes in telecommunications and ascertain whether change is being driven by the desire to keep up with the rest of the world, or if it is being driven by the demands of tourists or by globalization.

Research Questions

Given the above stated interests, this research will seek to investigate the following questions in order to gain insight into the changes in Caribbean telecommunications.

(i) Have changes occurred in telecommunications policies in selected Caribbean countries since 1990? What are they? What were the most important factors driving these changes?

(ii) To what extent, if any, have changes in telecommunications policies in selected Caribbean countries since 1990 achieved goals with respect to universal service and increased competition?

(iii) Have these changes affected the overall telecommunications industry sector, nationally and regionally? If so, how do they relate to other external factors? I.e. if there have been changes, how much is explained by policies, how much by other factors?

(iv) Were there goals for these policy changes with respect to universal service and competition? If so, have they been met? If they have been met, what were the most important factors in their achievement? If they have not been met, what factors led to their failure?

(v) What lessons/recommendations for these Caribbean countries and other similarly situated countries can be learned from this experience? Are these lessons/recommendations consistent with other research in the field, or do they provide new information?

The Caribbean in Context

Geographic and Societal

As seen in the following map (Figure 1-1), the Caribbean region is one that is comprised of hundreds of islands of varying sizes that create an archipelago that spans from the just off the tip of Florida down to South America. Within this chain of islands the differences in type of rule, language spoken, population composition, literacy rates, life expectancy, main economic sources and other statistical measures are as varied as the islands themselves (refer to Table 1-1). The Spanish were the first to come to the region, but throughout the time from that first discovery in the fifteenth century to the current period, many of the islands have been the objects of squabbling and jostling between

colonial powers. In the earliest times of discovery, the traditional colonial powers fought for control over the islands and their resources, with the majority of European colonial powers thinking of the region in terms of places from which they could extract wealth, while at the same time extending their business enterprises, by providing services to those on the islands. From the earliest days of slavery when the islands were used for producing sugar to be shipped abroad, to the discovery of other resources such as oil and the processing of bauxite, these colonial powers have found ways to reap the benefits the islands had to offer. Although the age of colonialism has all but died, the islands of the Caribbean still exhibit the markings of their colonial past, through such aspects of society as law and the type of governance.

The map of the Caribbean shown breaks the islands into two sectors: those in black are still under the rule of some other nation such as the United States or United Kingdom, and those in red being independent and consisting of both long-independent states such as Haiti and newly (within the last fifty years) independent states once ruled by colonial powers.[3]

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[3] Caribbean islands named in black ruled by the U.S, U.K and Netherlands are Turks & Caicos, the Virgin Islands, Saba, Anguilla, St. Martin, St. Bart's, St. Eustatius, Guadeloupe, Martinique, Montserrat, Bonaire, Aruba, Curacao and the Cayman Islands. The independent islands named in red are the Bahamas, Cuba, Jamaica, Haiti, the Dominican Republic, St. Kitts and Nevis, Antigua and Barbuda, Dominica, St. Lucia, Grenada, Barbados and Trinidad and Tobago.

Figure **1-1**: Map of the Caribbean.[4]

The Push for Independence

Following the two World Wars, and especially after World War II, the Caribbean islands, especially those under British supervision, became very disillusioned with the

[4] Source- http://worldatlas.com/webimage/countrys/carib.htm

exploitative manner with which they were governed (Blouet, pg).[5] In the minds of some experts, this feeling arose from the fact that many West Indians had served the British Empire during both wars and had returned home with a less than savory taste in their mouth about the way they were treated considering the sacrifices they were making. Veterans returning to the Caribbean after serving the British Commonwealth in World War II, began a movement of Pan-Caribbeanism that was the result of their dissatisfaction with the way they were treated while trying to help the colonial power fight its enemies. This pan-Caribbean, anti-colonialist movement, which saw the islands banding together in the aim of achieving independence, was coupled with a movement to nationalize many of the services on the islands, and a feeling of wanting to use the riches generated on the islands for the development of the islands.

The late 1950's and early 1960's saw a movement within the Caribbean islands for political independence and a shift in control away from the colonial powers that had dominated the islands. This political movement for independence was instrumental in bringing to an end the foreign control, which in the case of some islands, had been in existence for over 200 years. Although states such as Haiti and Cuba had long gained independence from France and Spain respectively, the period from the 1960's to the 1980's saw the moving away from colonial rule for many of the islands under the control

[5] Blouet, O.M. (2007).The contemporary Caribbean : history, life and culture since 1945. Reaktion Books.

of the United Kingdom. Of these islands, Jamaica and the twin island republic of Trinidad and Tobago were first to gain independence, with other islands achieving the same status in the years to follow. Although many of these islands were independent in terms of political rule, they were still dependent on some of the remnants of British rule as can be seen in the utilities sectors, where companies that existed as part of the British colonial rule still provided the service.

The push toward independence was not solely one of reclaiming what people on the islands thought was being taken away from them, but was part of a changing attitude on the islands toward British rule. The movement toward a united Caribbean resulted in the short-lived formation of the West Indies Federation, a conglomeration of islands ruled by the United Kingdom that existed from 1958-1962. The aim of the federation was to bring together all the states under British rule and to push for independence of the group. However, internal squabbling led to the demise of the group and left members to achieve independence on their own.

The failure of the West Indies Federation can be better understood when thinking of the relationship that Caribbean islands have with each other. Within the Caribbean there is an overriding jealousy and distrust that people and governments of one island have for their neighbors. This was manifested when Trinidad and Tobago was chosen as the site for the capital of the Federation, much to the chagrin of the Jamaican leadership, and there was also disagreement on the number of representatives Jamaica had in relation to the smaller islands given that it had a larger population. Although the Federation was a vessel for gaining independence and bringing the islands closer together, it was not a union without problems. Events around the world with other smaller British colonies gaining independence faster than the Caribbean and the feeling among some that the smaller islands were enjoying the riches of the bigger islands, led to Jamaica seceding

from the Federation and Dr. Eric Williams famous statement, “One from ten is nought,” which was symbolic of the end of the West Indies Federation. Writers such as Naipaul, although criticized for his views of the post colonial Caribbean, view the Caribbean as disjointed states, thereby highlighting the lack of cooperation and trust between the islands.

The larger islands were the first to push for independence since they had industries that could sustain their economies. In Jamaica, there was the processing and exporting of aluminum and bauxite, while in Trinidad and Tobago there were oil deposits which during that period made these islands the most economically successful country in the Caribbean.

Table **1-1**: Key Statistics of Caribbean Countries.

Country	Population	Language	GDP (Billion)	Life Expectancy	Industry	Sovereign Status
Anguilla	13,677	English	$0.11	80.53	Tourism, Financial Services	UK Territory
Antigua/Barbuda	69,481	English	$1.19	72.69	Tourism	Independent
Aruba	100,018	Dutch	$2.26	75.06	Tourism	Dutch Territory
Bahamas	305,655	English	$6.93	65.72	Tourism, Financial Services	Independent
Barbados	280,946	English	$5.53	73.21	Tourism, Light Industry	Independent
Bermuda	66,163	English	$4.50	78.30	Financial Services, Tourism	UK Territory
Brit. Virgin Islands	23,552	English	$0.85	77.06	Tourism, Financial Services	UK Territory
Cayman Islands	46,600	English	$1.94	80.32	Tourism, Financial Services	UK Territory
Cuba	11,394,043	Spanish	$51.11	77.27	Metals, Services	Independent
Dominica	72,386	English	$0.49	75.33	Agriculture	Independent
Dominican Republic	9,365,818	Spanish	$85.40	73.39	Metals, Agriculture	Independent
Grenada	89,971	English	$0.98	65.60	Tourism, Financial Services	Independent
Haiti	8,707,847	French	$15.82	57.56	Light Industry	Independent
Jamaica	2,780,132	English	$13.47	73.59	Tourism, Metals	Independent
Montserrat	9,538	English	$0.03	79.15	Tourism, Light Industry	UK Territory
Neth. Antilles	223,652	Dutch	$2.80	76.45	Tourism, Petroleum, Financial Services	Dutch Territory
Puerto Rico	3,944,259	Spanish	$77.41	78.58	Tourism	US Territory
St. Kitts/ Nevis	39,349	English	$0.73	72.93	Tourism, Financial Services	Independent
St. Lucia	170,649	English	$1.18	74.32	Tourism, Financial Services	Independent
St. Vincent/ the Grenadines	118,149	English	$0.90	74.34	Tourism, Light Industry, Agriculture	Independent
Trinidad & Tobago	1,056,608	English	$22.93	67.00	Petroleum, Financial Services	Independent
Turks and Caicos Islands	21,746	English	$0.20	75.19	Tourism, Financial Services	UK Territory
Virgin Islands	108,448	English	$1.58	79.34	Tourism	US Territory

Information sourced from World Factbook

U.S. Protectionism

As a region, the Caribbean has been of interest to many foreign powers throughout the course of time. With a long colonial history that stretched for over four centuries in some instances, many colonial and world powers have sought ‘ownership’ of the Caribbean islands in one form or another. During the early 1820’s the newly emerging United States of America drafted and implemented the “Monroe Doctrine”, a policy which stated that the government of the United States would protect its borders, which included the Caribbean islands and the rest of the Americas, from governance or attack from foreign forces. The United States saw the islands as their backyard and as such anything that affected the islands would affect the newly emerging United States. Expressly stated, the Monroe Doctrine gave the United States the power to act with force on an influence it deemed threatening to the territories in the area under its protection.

The Monroe Doctrine came at a time when the colonial powers, Britain, France and Spain, were focused on events taking place in mainland Europe and were losing their hold on their Caribbean protectorates and as such, while they may have been disturbed by the declarations of a nation that was just making its mark on the world scene, they realized that they were in no position to challenge the edicts of the Monroe Doctrine. Over the passage of time from 1823 when the Doctrine was passed to the present, it has

been used as the rationale behind U.S. intervention in the Caribbean and in the Americas.[6]

The Monroe Doctrine was used as justification for U.S. intervention in Cuba, then a colony of Spain, leading to the Spanish American War. It was also the rationale for the invasion of Grenada and the replacing of the government on that island with one that was more favorable to the then leadership of the United States. In Central and South America it was used as the basis for the involvement with rebel groups trained to overthrow governments that were anti-US policy. However, the most famous incident was during the Cold War standoff between the U.S. and Cuba, when the United States felt threatened by the spread of communism in the Caribbean Basin and the threat of Russian missiles stored in Cuba and aimed at the U.S mainland. This resulted in the failed Bay of Pigs invasion by Cuban exiles to the United States, but marked the seriousness with which the United States regarded outside influences in the Western World. Similar actions were taken in other parts of the Caribbean and Latin America when it seemed that governments with communist slants threatened to gain power or came to power in the region.

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[6] More information about the Monroe Doctrine can be found at http://www.state.gov/r/pa/ho/time/jd/16321.htm

The Case for Developing Telecommunications

In many parts of the Caribbean there is an intentional push behind creating a telecommunications infrastructure that puts the islands on par with the countries of the developed world. Telecommunications is being seen as an economic lifeline to many of the countries in light of the realities of the economic situation that exists in the Caribbean. The topics discussed below, namely trade, tourism and immigration, provide key insights into the need for greater investment and development of telecommunications and the need for restructuring not only the telecommunications industry sector but also the economic focus of many of the islands.

Trade

The Caribbean region is also a vital one in terms of its trade relations with the United States. In order to aid the economic development of the region, the United States and some of the members of the Caribbean Community (CARICOM)[7], have negotiated trade agreements that allow the producing islands of the Caribbean to export their

[7] CARICOM is an organization of Caribbean nations aimed at promoting the economic well being of its members. Comprising fifteen full member, five associate members and seven observers CARICOM serves as an economic and development coordinator, provides a common market and also acts as judge in cases of trade disputes for its members. For more information on CARICOM visit http://www.caricom.org/

products to the U.S. without the trade tariffs that are imposed on goods coming from other regions. The Caribbean Basin Initiative (CBI), enacted under the Caribbean Basin Economic Recovery Act (CBERA) of 1983, was one of the earliest agreements negotiated that gave favorable trading rights to the countries of the Caribbean. Since 1983, this agreement has been updated and now exists in the form of the Caribbean Basin Trade Partnership Act (CBPTA), which came into effect in 2000 and extends to September 2008 when a new negotiation will take place with regard to continuing the favorable trade tariffs.

Many of the Caribbean islands are textile producers and export the bulk of their products to the United States. The passing of the North American Free Trade Agreement (NAFTA) in 1994, which gave favorable tariffs to Mexico, a large textile producer, had serious effects on the Caribbean Basin Initiative, since the sizeable exports that the islands enjoyed were now being threatened. As such, the CARICOM members wanted the CBI revisited to provide tariffs that were comparable to those enjoyed by Mexico. With the passing of NAFTA, Mexico saw its textile exports grow by 218% from the period 1994-2002, thus eroding the competitive advantage once enjoyed by the Caribbean islands. Only after much lobbying was the playing field in the textile import market leveled to one where the textile exporting islands of the Caribbean could compete on a

level playing field with Mexico.[8] This leveling came by way of the CBI/NAFTA parity issue but although the playing field had been equalized, the damage that was done in the intervening years after the passing of NAFTA and the resolution of the parity issue put a serious dent in the ability of the Caribbean islands to produce textiles. The effects are still being felt, since textile exports to the United States continue to decrease with each passing year. This is shown in the figure below which looks at U.S. imports from the CBI countries in 2000 and 2006. It can be seen from these graphs that while exports in other sectors have remained constant, and others such as Inorganic Chemicals and Mineral Fuel have risen since 2000, the Knit Apparel and Woven Apparel sectors have seen decreases in the amounts imported by the U.S.

[8] Gelb, B.A. (2003). CRS Report RL31723, Textile and Apparel Trade Issues. Resources, Science, and Industry Division, Congressional Research Service, Library of Congress.

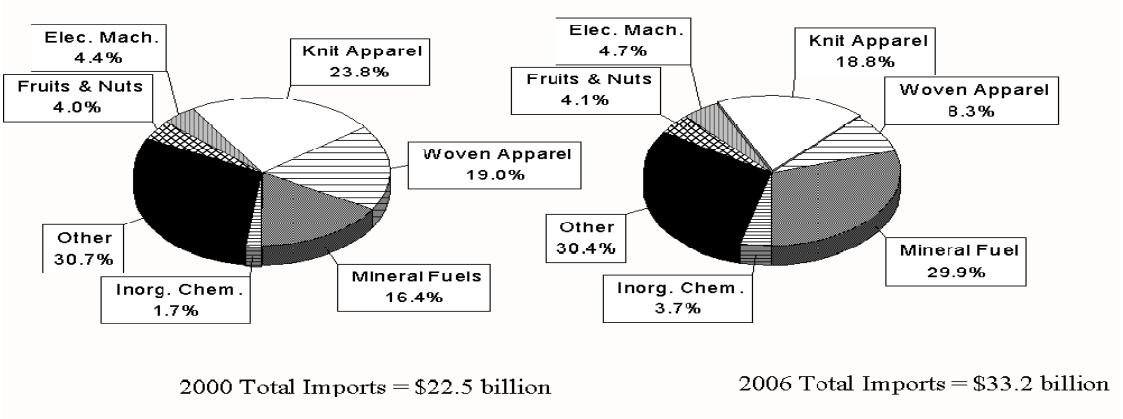

Figure **1-2**: U.S. Imports from CBI Countries, 2000 and 2006 (by major product category).[9]

While the United States imports textiles and other items from the Caribbean and the rest of Central and South America, the chief import is oil, which in 2006 accounted for close to 30% of the exports from the Caribbean to the United States.[10] In looking at the numbers it can be seen that the dollar value of imports to the United States from the Caribbean has seen steady growth from 2001 to 2006, with the main beneficiaries of the trade tariffs seeming to be the oil producing nations of Trinidad and Tobago and Aruba, accounting for roughly one third of U.S. spending by way of imports from the Caribbean in 2006. According to the report produced by Hornbeck, with the exclusion of the oil and

[9] Hornbeck, J. F. (2007). CRS Report for Congress. U.S. Trade Policy and the Caribbean: From Trade Preferences to Free Trade Agreements.
[10] Id.

natural gas producing states of Trinidad and Tobago and Aruba, the top six exporters are responsible for 95.6% percent of the textile exports to the United States.[11] The oil producing islands benefit the most from the favorable tariffs on exports to the U.S., since it is the only sector that shows substantial growth in revenues from exports. This is shown in Table 1-3, U.S. Imports by CBI Country, 2000-2006.

[11] Id.

Table **1-3**: U.S. Imports by CBI Country, 2000-2006 ($ millions)[12]

Country	2000	2001	2002	2003	2004	2005	2006
Trinidad &Tobago	2,228	2,380	2,440	4,334	5,842	7,891	8,370
Dom. Rep.	4,383	4,183	4,169	4,455	4,527	4,604	4,529
Aruba	1,536	1,034	774	955	1,776	2,920	2,845
Neth. Antilles	719	485	362	632	435	922	1,119
Jamaica	648	461	396	423	320	376	520
Haiti	297	263	255	332	371	447	496
Bahamas	275	314	450	479	638	700	453
Guyana	140	140	116	119	122	120	125
St. Kitts/ Nevis	37	41	49	45	42	50	50
Barbados	39	40	34	44	37	32	34
Brit. Virgin Islands	31	12	41	35	17	34	26
St. Lucia	22	29	19	13	14	32	30
Antigua/ Barbuda	3	4	4	13	5	4	6
Grenada	27	24	7	8	5	6	5
St. Vincent/ the Grenadines	9	23	17	4	4	16	2
Dominica	7	5	5	5	3	3	3
Montserrat	0	0	0	1	0	1	1
Total	10,401	9,438	9,138	11,897	14,158	18,158	18,614

Id.

On closer examination of the preceding table it can be seen that the countries accounting for the greatest textile exports are countries that are in Central America. This examination also reveals that outside of countries with mineral resources, revenue from exports to the United States is generally on a decline. This decline has hit countries such as Dominica, Grenada and Jamaica the hardest as their textile producing industries have continued to fall on hard times. Those in charge on these islands have had to find alternatives to replace the export income and contribution to the GDP that the textile industry once provided. Given the lack of resources in most of the Caribbean there is increasing reliance on the unstable tourism market as the way to keep economies afloat. Evidence of this is seen in Table 1-1, where many of the islands are listed as having tourism as the main earner for their economies.

Developing Tourism

As a destination, the Caribbean continues to be one of the most popular vacation spots in the world. Given the comparatively inexpensive cost in getting to the region by air or by sea, the favorable exchange rates and the relative stability of the region politically, visitors flock to the islands for rest and relaxation. However, with the

decreases in other markets, much more is being asked of the tourism markets in terms of shouldering economies. According to the World Travel and Tourism Council, the Caribbean employs the highest percentage (14.8%) in the tourism sector compared to any other region in the world, while at the same time investing the most in the tourism sector.[13] The region also holds the distinction of being first in terms of the percent of GDP contributed by tourism. However, the dependence on tourism, while contributing greatly to development of the island economies, is not one that should be relied upon for financial stability, since travel trends change and as was seen in the case after the September 11th, 2001 terrorist attack, one catastrophe can create widespread disruption in international travel and change people's attitudes toward travel.

Despite the hardship that comes with being all but solely dependent on the whims of tourists and the hardship that sometimes befalls the region in terms of hurricanes and tropical storms, the tourism industry in the Caribbean continues to be stable.[14] This stability, coupled with $40,250.3 million dollars of GDP that is attributed to coming from the tourism sector, should ensure great development for the islands for which tourism is the mainstay of the economy. [15] To keep up with the competitive nature of tourism,

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[13] World Travel & Tourism Council (2007). World Travel & Tourism: Navigating the Path Ahead. The 2007 Travel & Tourism Economic Research.
[14] Gmelch , G. (2003). Behind the Smile: The Working Lives of Caribbean Tourism. Indiana University Press.
[15] World Travel & Tourism Council (2007). World Travel & Tourism: Navigating the Path Ahead. The 2007 Travel & Tourism Economic Research.

governments in the Caribbean have invested significantly in infrastructure, updating facilities including electricity, sewage and telephone, while at the same time building more rooms to house tourists and bigger ports and airports to accommodate cruise ships and larger airliners.

However, reports based on studies performed by the United Nations have found that Caribbean governments invest in these upgrades at their own peril, since the studies have found that the 'foreign exchange leakage rate' on some islands is extremely high.[16] The foreign exchange leakage rate refers to the amount of money coming into the island from the tourism industry that is in fact forwarded to entities outside the island. This leakage is typically the result of foreign ownership of services and infrastructure. As stated by Barnwell, the UN study found that "St. Lucia had a foreign exchange leakage rate of 56% from its gross tourism receipts, Aruba had 41%, Antigua and Barbuda 25% and Jamaica 40%." These figures do not bode well for Caribbean governments, since infrastructure developments are provided for all, not just the tourists, and a significant proportion of the revenues on which they depend are leaving the country. This trend is also disturbing when the fact that many of the developments in tourism are enabled

[16] Barnwell, G. (2000). Difficulties in Paradise: The Feasibility of Sustainable Development. Caribbean Voice. This report found significant leakages associated with:(a) imports of materials and equipment for construction;(b) imports of consumer goods, particularly food and drinks;(c) repatriation of profits earned by foreign investors;(d) overseas promotional expenditures and (e) amortization of external debt incurred in the development of hotels and resorts.

through the borrowing of funds from international lending agencies. Another trend that should be worrying to Caribbean governments is that of all-inclusive resorts. This phenomenon, although convenient for the consumer and the resort, does in fact serve to limit the money going to the rest of the island, since tourists are less likely to eat at local restaurants, shop at local vendors and partake in other activities that involve going outside of the resort. As such, there is no currency being exchanged with the native islanders trying to make a living by providing goods and services to the tourists.

History of Migration

The Caribbean region is one that is also important in terms of the migration aspect. Although the number of immigrants entering the United States has been on the decline in recent years, as a result of the application of more restrictive laws designed to keep unlawful entrants out, the Caribbean still contributes greatly to the annual migration numbers to the U.S. Migration out of the Caribbean, which has been taking place since the 1890's starting with construction on the Panama Canal. Caribbean nationals, more specifically Jamaicans and to some extent Barbadians,[17] in search of employment, have seen relocation as a method of taking advantage of the wage disparities between their

[17] Hart, P. (2004). 1849 Gold Rush influences Afro-Caribbean migration. University Times. University of Pittsburgh. 36:15.

sending country and the receiving country.[18] Despite the hardships that were being faced by people of color in the Panama Canal region and in the United States, West Indians still saw the opportunities in these places as being better than anything they would find at home.[19]

Before being recruited by the French to work on the Panama Canal, West Indian migration to that region had already been taking place, with workers coming to Panama, then a region of Colombia, to help build a railroad through Panama. West Indian migration really began in earnest after the abolition of slavery and has continued to the present time. In the decade 1900-1909, the migration of West Indians to the United States and their subsequently achieving legal permanent resident status first crossed the 100,000 mark with 100,960 people coming to the United States legally. The decades following have seen some fluctuation in the number of West Indian migrants achieving permanent resident status, as the result of the enforcement of various legislations designed to stem

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[18] Massey, D.S., Arango, J., Hugo, G., Kouaouci, A., Pellegrino, A. & Taylor, J.E. (1993). Theories of International Migration: A Review and Appraisal. Population and Development Review. 19:3, 431-466.
In discussing the Neoclassical Macro economic theories of Migration, Massey et. al. point to the differences in wages as one of the primary reasons for workers migrating from one country to another and that elimination of these wage differentials could possibly end the migration.

[19] Cleveland Advocate (1920). Here is Gripping Story of Conditions Which Colored Labor Faces in Panama. Ohio Historical Center Archives Library. 7:7,1. This newspaper article outlines the conditions that Afro- Caribbeans and other people of color faced in the Panama Canal region during the construction of the canal. It explores such topics as the gold and silver rolls, by which white workers were paid in gold and their colored co-workers in silver and also by which white workers were paid a dollar more than their colored co-workers.

the flow of migrants coming to the United States from the Caribbean and other regions of the world. In the decade 1990-1999, loose immigration laws saw the number of legal permanent residents from the Caribbean top the million mark, but recent immigration reforms have stemmed the flow of migrants to levels that existed in the 1900's.[20]

[20] See table titled 'Persons Obtaining Legal Permanent Resident Status by Region and Selected Country of Last Residence: Fiscal Years 1820 to 2007' for further information on the migration numbers from the Caribbean.

Table **1-4**: Persons Obtaining Legal Permanent Resident Status by Region and Selected Country of Last Residence: Fiscal Years 1820 to 2007.[21]

	Caribbean		Cuba	Dominican Republic	Haiti	Jamaica	Other Caribbean
1820 to 1829	3,061		-	-	-	-	-
1830 to 1839	11,792		-	-	-	-	-
1840 to 1849	11,803		-	-	-	-	-
1850 to 1859	12,447		-	-	-	-	-
1860 to 1869	8,751		-	-	-	-	-
1870 to 1879	14,285		-	-	-	-	-
1880 to 1889	27,323		-	-	-	-	-
1890 to 1899	31,480		-	-	-	-	-
1900 to 1909	100,960		-	-	-	-	-
1910 to 1919	120,860		-	-	-	-	-
1920 to 1929	83,482		12,769	-	-	-	70,713
1930 to 1939	18,052		10,641	1,026	156	-	6,229
1940 to 1949	46,194		25,976	4,802	823	-	14,593
1950 to 1959	115,661		73,221	10,219	3,787	7,397	21,037
1960 to 1969	352,038		202,030	8,355	28,992	62,218	50,443
1970 to 1979	708,850		256,497	139,249	55,166	130,226	127,712
1980 to 1989	790,109		132,552	221,552	121,406	193,874	120,725
1990 to 1999	1,004,687		159,037	359,818	177,446	177,143	131,243
2000	84,270		17,897	17,373	21,997	15,603	11,400
2001	96,384		25,832	21,139	22,470	15,031	11,912
2002	93,914		27,435	22,386	19,151	14,507	10,435
2003	67,498		8,685	26,112	11,924	13,045	7,732
2004	82,116		15,385	30,063	13,695	13,581	9,392
2005	91,371		20,651	27,365	13,491	17,774	12,090
2006	144,477		44,248	37,997	21,625	24,538	16,069
2007	114,318		25,441	27,875	29,978	18,873	12,151

[21] Source: U.S. Department of Homeland Security. Data for years prior to 1906 refer to country of origin: data from 1906 to 2007 refer to country of last residence. Data for Jamaica not reported separately until 1953. Prior to 1953 Jamaica was included in British West Indies.

Although the levels of migration have fallen in recent years, it still remains that there is a strong presence of Caribbean immigrants in the United States. The immigrants and their families left behind maintain close ties in terms of the remittances that are sent back to the islands to help support families. These transfers of funds from the U.S. to the Caribbean play an integral part in helping Caribbean economies develop, since it plays into the financial segment as banks are used to convert currency, as well as boost the local economy since this money is spent at local places of business.

Aspects of Tourism, Trade, Immigration and others help to outline the importance of the Caribbean in relation to the United States and the rest of the world. They also help to show that based on these aspects, significant developments in infrastructure in the Caribbean need to continue to take place, one such sector that needs to continue to develop is telecommunications, since current and competitive telecommunications service is essential for the above social and economic features to remain viable as means of continuing to attract investment to the islands.

The World Trade Organization

The World Trade Organization (WTO) is an international organization that regulates trade and seeks to liberalize markets, thereby easing the barriers to trade between countries. Created during the Uruguay round of the General Agreement on Tariffs and Trade (GATT) negotiations, the WTO came into existence on January 1, 1995. Unlike its predecessor, the GATT, which focused primarily on rules regarding the trade of goods, the WTO also covers the trade of services, technology and intellectual property under the General Agreement on Trade in Services (GATS). Under the trade in

services the WTO has agreements that affect the way in which global telecommunications operates.

Coming out of the Uruguay round was the implementation of the Basic Telecommunications Agreement (BTA) which sought to liberalize telecommunications across the world to level the playing field for the entry foreign ownership, it also sought to foster the introduction of competition in the telecommunications markets across the world and thereby increase the rate of foreign investment in the global telecommunications sector. With a deadline set for February 15th 1997 the BTA was agreed upon by 69 out of 131 WTO members.[22] Of the countries that originally agreed to the BTA, five of them were Caribbean Islands.[23] Today the number of commitments stands at over 90 with various countries agreeing to different terms in the BTA, either through agreeing to limit their commitment to basic telecommunications services and/or to value added services.[24,25]

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[22] http://www.soumu.go.jp/joho_tsusin/whatsnew/wto_agree-e.html

[23] These countries were among the original 69 to commit to the WTO's BTA: Antigua and Barbuda, Grenada, Dominica, Jamaica and Trinidad and Tobago. Barbados submitted their commitment after the original round of negotiations. Cuba and St. Kitts and Nevis have also committed to the BTA.

[24] http://www.wto.org/english/tratop_e/serv_e/telecom_e/telecom_commit_exempt_list_e.htm#fntext1

[25] See the following for the differentiation between basic and value added telecommunications per the WTO http://www.wto.org/english/tratop_e/serv_e/telecom_e/telecom_coverage_e.htm

By committing to the BTA these countries agreed to conditions that would radically change their telecommunications landscape. For the islands of the Caribbean it meant that the regime of monopoly control and in some cases government ownership that had existed for decades was going to change. Of particular importance to those agreeing to the BTA was the commitment to the 'Reference Paper.' The 'Reference Paper' that these countries agreed to adopt meant that these countries had to create domestic markets for telecommunications which had legal transparency, a condition that would help ensure that foreign investment would be effective. Apart from the legal environment the Reference Paper called for were other conditions geared toward making sure that the trade in services took place in a manner that did not present advantages to former monopoly providers. The Reference Paper outlined rules for: creating competitive safeguards, interconnection, universal service obligations, licensing criteria, the establishment of a regulatory authority and the allocation and use of scarce resources such as spectrum.[26]

For the Caribbean countries which committed to the BTA and the conditions of the Reference Paper presented significant challenges, the most significant of which was the creation of independent regulatory bodies to govern telecommunications. However, the realization of the revenue that could be gained from selling government ownership in

[26] The conditions of the Reference Paper are discussed in detail at the following http://www.wto.org/english/tratop_e/serv_e/telecom_e/tel23_e.htm

telecommunications, and the societal benefits of having more people served, as well as the introduction of new services, were instrumental in making sure that the process to meet the conditions of the Reference Paper was undertaken.

Chapter 2

Literature Review

With the recent trend toward liberalizing and introducing competition to the telecommunications sectors of the Caribbean islands there has been some research conducted using data from the islands. The majority of these studies however, tend to either be of the case study nature, with the narrowing of the topic to focus on one island or a small group of islands.[27] Other studies on Caribbean Telecommunications come out of international groups, such as the U.N or World Bank, and their evaluating the islands in terms of their legal change and economic growth.

Jamaica has been at the forefront of studies on telecommunications in the Caribbean, partly because they were the one of the first to consider liberalization and also because of the process by which they went about liberalizing and introducing competition to the domestic telecommunications sector. The methods through which Jamaica has gone about its reform and has successfully attracted foreign direct investment into the telecom sector has not gone unnoticed and in fact, as Levy and Spiller state, "the World Bank has used (and continues to use) Jamaican telecommunications and its regulatory

[27] Examples of this can be seen in the work of McCormick (1993), Stirton, L., & Lodge, M. (2002), Lodge & Stirton (2002), Dunn, H. S. (2007).

regime post-1988 as a case study into designing regulatory regimes in systems of high political uncertainty and weak administrative capacity in order to attract private investment."[28] The process of liberalization and regulatory reform as conducted in Jamaica has led other Caribbean states to follow suit in an attempt to negotiate release from long standing exclusive contracts.[29]

To better understand the waves of telecommunications legislation that have hit the various islands of the Caribbean over the past decade, it is best to understand the theoretical framework explaining the willingness of countries to systematically adopt the policy trends incorporated in other countries.

Diffusion of Policy Innovations

As simply stated by Grossback et al. (2004) "states have long emulated each other's policies" and the islands of the Caribbean are no different.[30] The movement of the Caribbean islands adopting new telecommunications policy can be best examined by looking the phenomenon from the point of view of the Diffusion of Policy Innovations.

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[28] Levy, B., & Spiller, P. T. (1996). Regulations, institutions, and commitment: Comparative studies of telecommunications. New York: Cambridge University Press.
[29] For further discussion on Jamaica see Dunn, H. S. & Gooden, W. S. (1998). Jamaica, in Noam, E. M. ed. Telecommunications in Latin America. Oxford University Press, Inc.
[30] Grossback, L. J., Nicholson-Crotty, S. & Peterson, D. A. M. (2004). Ideology and learning in policy diffusion. *American Politics Research* 32(5), 521-545.

With roots in political science, policy innovation was first used by Walker (1969), who investigated the means by which innovative policies diffused across state lines, and Gray (1973) who used the theory to understand why states were willing to adopt the laws and policies employed in other states. Since these early studies there has been more research into the theory, all of which has been geared toward answering the questions "what causes a government to adopt a new program or policy?"[31] And what causes policy diffusion to take place in a certain manner?

According to Rogers (1995), diffusion is "the process by which innovation is communicated through certain channels over time among the members of a social system."[32] However, beyond belonging to a social system the states must share an 'ideological similarity' which serves to "reduce the uncertainty a state may have about a policy and thus induce emulation."[33] Other work on the theory performed by Berry and Berry (1999) look at policy diffusion as the result of two determinants, namely internal determinants and diffusion models.

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[31] Tyran, J. R. & Sausgruber, R. (2003). The Diffusion of Policy Innovations. An Experimental Investigation. University of St. Gallen. Department of Economics. Discussion Paper No. 2003-14.
[32] Rogers, E. M. (1995). Diffusion of Innovations. The Free Press.
[33] Grossback et al (2004). Pg 522.

Internal Determinants

The internal determinants of policy diffusion look at the characteristics of the state, whether economic, political or social, that act as the motivation for adopting new policies. In reviewing the work of Weiss et al. (2005) the first of these characteristics comes when states are faced with the emergence of a problem or crisis that necessitates changing existing circumstances. Under this phenomenon the possibility of serious crisis leads to a faster rate of adoption of policy innovations but as stated by Weiss et. al. in their analysis of the work of Nice (1994) and Rogers (1995) "the likelihood of adoption and the rate of diffusion increases if a great compatibility of an innovation is perceived to exist with both current circumstances and the generally accepted values and norms of the social system."[34]

The second of the characteristics outlined refers to the comfort or discomfort felt by decision makers and those in society. The need to adopt new policy innovations is less if those in authority are satisfied with the system in place. However, pressure from those in society to make changes to existing policy can act as the impetus for those in authority to consider adopting policy changes. This pressure can be in the form of economic political, social or economic actions.

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[34] Weiss et al. (2005).

The third of the characteristics of internal determinants comes from the cost associated with policy innovations. As has been stated, researchers' policy innovations are more likely to undergo faster rates of adoption when the state is wealthier and has the resources to afford the changes and in fact the availability of resources might lead to greater motivation to institute new policy.[35] Based on this research, states with limited resources are usually last to come to new policy initiatives. However, the limitation in resources does not solely refer to the capital needed to implement new changes but also refers to ability of workers associated with those industries undergoing policy changes to come to terms with the new policies.

The last of the internal determinants concerns the resistance to adopting new policy changes based on the communal unwillingness or inability to cope with change. These obstacles toward change are not only felt by those in the community, who will be affected most by the change, but are also felt by the decision makers who undertake the policy making process. The complexity of proposed policy changes can also pose restrictions to the speed with which policies are adopted. Researchers have found that incremental changes in policies are easier to accept than wholesale change.

[35] See Weiss et al. (2005), Jensen (2004), Berry & Berry (1999), Gray (1994) & Walker (1969).

Policy Diffusion Models

Whereas the internal determinants come as a response to the environment within a state, the diffusion models of policy can be seen solely as a government responding to forces external to the state. Diffusion models fall into one or more categories in terms of the rationale for making changes to existing policy or adopting new policy. As stated by Weiss et al. in their summarization of Berry and Berry "(1) states learn from each other, (2) states compete with each other, and (3) states respond to persuasion either from the general public or from the national government."[36]

As discussed earlier, geographic proximity plays a significant part in the policy diffusion process. States, through observing and communicating with their neighbors, become aware of the newest policy changes and respond to them by either copying the policies or developing policies of their own.[37] As one researcher posits "states seek decision-making shortcuts to deal with complex issues and that the ability to choose policies that show promise in other states is a prominent example."[38] However geographic closeness does not guarantee adoption of policies from neighboring states but

[36] Weiss et al. (2005). Pg 6.
[37] See Berry & Berry 1992; 1999; Gray 1994; Mooney & Lee 1995; Walker 1969.
[38] Grossback et al (2004). Pg 522. They put forward they view that this was Walker's thinking regarding policy diffusion among the states.

the ideological similarities help to lessen the apprehension and increase the chances of policy adoption. This type of diffusion is referred to as the regional diffusion model.[39]

In countries (e.g. the United States), where states are somewhat autonomous and have some say in the laws that are passed and the policies adopted, there may be forces greater than the state that push for certain policy agendas. In this case the state either does not have the power to choose the policy or chooses to conform to a national policy. This vertical influence model among states is most effective when federally mandated and even more so when federal funding is attached.[40]

History of Telecommunications Liberalization

Telecommunications holds the unique distinction in that advances in technology and investment in its infrastructure can provide both social and economic benefits to the society. With advancing telecommunications and the close relation to computing technology, the global market has changed to one that is much more close knit and reliant upon these technologies for day-to-day functionality. However, the level of telecommunications development that we are now accustomed to could not come to

[39] Other examples of research that build on the regional diffusion model can be found in McVoy (1940), Collier & Messick (1975), Berry & Berry (1990;1994), Daley & Garand (2005), Shipan & Volden (2005).
[40] See Weiss et al. (2005), Berry & Berry (1999).

fruition without some significant changes in the way that telecommunications was regarded. Prior to the 1980's, telecommunications was thought of as being a natural monopoly and because of that the capital and the economies of scale needed would be best achieved by governments.[41] The natural monopoly system was also thought to achieve economies of scope since the cost involved in making upgrades to the system would be easier for a single provider.[42] This single provider would be entrusted with making sure that all the mandates for telecommunications (e.g. universal service) would be achieved. Although many of these monopoly providers were in some way associated with the government, there also existed scenarios where the monopoly provider was a private company (e.g. AT&T in the United States) which was regulated by the government.

Beginning in the early 1980's the technological advances in telecommunications and the demand for these products led to the realization that the system by which telecommunications were provided was outmoded and needed to be rethought and redesigned. The need for change resulted in the movements of privatization, liberalization and deregulation which began in the more developed countries and spread to other developing countries. The demand for change however was primarily not one of the "little man" but was driven by corporate users who, as both bulk users of

[41] See Sharkey (1982).
[42] Petrazzini (1995). Pg 12.

telecommunications and as being keyed into the economic benefits that competitive telecommunications, banded together to lobby governments to adopt laws the promoted competition, deregulation and liberalization. As stated in Wellenius and Stern (1994):

> "All telecommunications reforms so far mainly involve some degree of change along either four directions: commercializing and separating operations from government; increasing the participation of private enterprise and capital; containing monopolies, diversifying supply of services, and developing competition; and shifting government responsibility from ownership and management to policy and regulation."[43]

The United States was first to take steps to change its telecommunications landscape with the imposition of the Modified Final Judgment in 1982, which saw the monopoly provider AT&T broken up into seven regional Bell operated companies (RBOCs). These regional companies operated as protected monopolies and AT&T no longer had a monopoly as a long distance service provider. The Modified Final Judgment did however allow AT&T to enter into equipment manufacturing and other non-communications segments.[44] The divestiture and deregulation of U.S. telecommunications and other subsequent events lead to a telecommunications market in

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[43] See pg 3 of Wellenius, B. & Stern, P. A. (1994). Implementing Reforms in the Telecommunications Sector: Lessons from Experience. World Bank.
[44] Petrazzini (1995). Pg 19.

the United States that had many competitive entrants as well as some monopoly providers in regional markets.

In Britain similar movements were taking place in the early 1980's. While the United States saw the solution to telecommunications as breaking apart of a monopolist carrier and relaxing laws, the British situation called for a different answer to the problem. British Telecom (BT), the national telecommunications provider, was government owned and run as part of another public service ministry, the British Post. Therefore in order to find remedies to the telecommunications issues the government would first have to establish British Telecom as its own entity and second, find a way to make it less of a government entity. These steps were taken in 1981 and 1984 respectively when BT was separated from the Post Office and the government sold a significant share of the company to private investors but remained as the majority share holder.[45] Similar to the scenario in the U.S., long distance telecommunications became more competitive, with laws passed to allow companies to compete with the incumbent long distance provider.

Japan followed closely on the path to telecommunications reform with the incorporation of Nippon Telegraph and Telephone Public Corporation in 1985 and with the government selling a minority share of its sole ownership to interested investors. The

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[45] Id.

government gradually decreased its ownership while putting in place telecommunications reforms that covered basic telephony as well as enhanced services and also made it possible for competition to take place in Japanese Telecommunications.[46]

As discussed by Petrazzini, the push for change in telecommunications in the above countries was spearheaded by large corporations which banded together to see reform happen. In the case of Britain and the United States, the corporations were national corporations making the push, but in the case of Japan it was large U.S. companies in combination with Japanese firms that touted telecommunications reform. The reforms achieved by these more developed countries soon spread to lesser developed countries with governments in Argentina, Thailand, South Africa, Mexico and even the Caribbean Islands, which soon tried their hand at telecommunications reform.

History of Telecommunications Liberalization in the Caribbean

The pressure placed on telecommunications service providers by those in the business sector was a characteristic of telecommunications that also existed in the Caribbean. These business users made demands for service that time and again were not met by the telcos, which were predominantly state owned. Some state owned enterprises

[46] See Petrazzini (1995). Pg 20.

had the ability to supply businesses with end user equipment which were locally produced, but others had to turn to outside suppliers to meet the demand.[47] The inability to meet demand led many countries to create technical standards for connecting to their networks. Networks in these developing countries were also unable to cope with the load that the new demand placed on the system. Many local systems encountered congestion at the local level which in turn led to congestion at the international level.

The inability to meet the demands placed on the network led many state owned telcos to invest heavily in making improvements to the network. Many of the state owned telcos in developing countries turned to international lending agencies (The International Monetary Fund and the World Bank) to accomplish these upgrades. These upgrades to the network resulted in many of the networks becoming completely digitized, but the inability to repay debts to the funding agencies led to telcos feeling the pressure to privatize to pay off debt. This pressure was especially felt in Grenada, Guyana, Jamaica, and Trinidad and Tobago. This rising debt was experienced among many of the developing countries across the world as telecommunications became essential to expanding a country's economy and making sure that financial, banking and other markets ran efficiently and were profitable. In the 1980s it was estimated that in order for

[47] See Noam, E.M. ed.(1995) for Noguera, F.M. discussion of Telecommunications in the Caribbean

developing countries to reach significant levels of development by 2000 they would have to invest $25-$30 billion dollars per annum and another $10-$15 billion for upgrades.[48]

While many developing countries tried to privatize their network by attracting foreign investors which usually came by way of telcos and service providers from developed countries the Caribbean was a little different. Cable & Wireless had been the international provider for many of the Caribbean islands before the privatization movement and with governments trying to sell off some if not all of their ownership stake C&W, because of its unique relation with the island telcos and its familiarity with the existing standards, took the opportunity to increase its ownership stake on many of the islands, in some cases becoming the monopoly service provider.

The arrangements that some Caribbean governments made with C&W have been questioned because of the outcomes of some of these dealings. Caribbean governments unfamiliar with the policy aspects of the agreements coupled with a feeling that governments just wanted to be out of the telecommunications business led to situations where C&W profited immensely both in the local and international segments of telecommunications. As stated by Noguera "C&W retained 87 percent of revenue on international calls in Belize, compared to just 50 percent in Jamaica, 65 percent in

[48] See Wellenius & Stern (1994). Pg 16 for a discussion of some of the constraints faced by developing countries as they tried to meet the demands placed on the telecommunications system during the 1980's.

Barbados, and 70 percent in Trinidad and Tobago." These and other benefits enjoyed by C&W are described as follows:

C&W's License Conditions in the Caribbean before Liberalization[49]

- The local C&W Company had a virtual monopoly over all telecommunications services for the period of the licence.[50] The few conditions in its licenses were often vague and difficult for the government to enforce.

- C&W paid a small percentage of the local operator's revenues as a fee in the form of a royalty to the government. C&W did not pay for frequencies and was the de facto manager of the spectrum.

- The local C&W Company was exempted from certain duties and taxes and from certain rules pertaining to the hiring of expatriates, privileges not always accorded to other companies.

- The government had little control over prices and received little information about the operation of the local operator even in cases where it was a part owner.

[49] Stern, P. A. (June 2006). Assessment of the Telecommunication Services Sector in CARICOM: Convergence Issues at the Regional and International Level. Draft Report prepared under IDB/MIF (TC No. ATN/MT-8694-RG).

[50] This was stated in practically all of C&W's operating licenses in the Caribbean in the following terms: "to provide, own, install, maintain, operate and augment national telecommunications systems and services within (the country) and to provide, own, install, maintain, operate and augment international telecommunications systems and services both between (the country) and places or mobile stations within or outside (the country) and passing in transit through (the country)". International telecommunications systems and services were defined as "services which included transmission and reception of voice, record, data, facsimile or any other services or facilities as may be developed and become available from time to time". Footnote from Stern (June 2006).

The deals were also questioned because not only were they very rewarding for C&W, but they also gave the company monopoly protection and extensive contracts that in some cases were to last twenty five years (e.g. Jamaica). The turning over of control from the government to C&W also proved to be problematic because while the assumption was that they would invest heavily in the network to meet the demands being placed by business customers, there were no mandates stipulating that they had to provide universal service. Therefore, while those in the cities and its suburbs benefited greatly from the upgrades, those in the rural parts continued to be left behind. Some of the commitments and arrangements that C&W had secured in the region are shown in the table below.

Table **2-1**: Telecommunications Market Structure in the Caribbean before Liberalization.

The Situation in 1997 and 1998: Market Structure			
	% Foreign Ownership of Operator	Foreign Strategic Investor	Term of Exclusive License
Antigua/ Barbuda	100	C&W	2012
Bahamas	0	BTC, gov't owned	Indefinite
Barbados	85	C&W	2011
Dominica	80	C&W	2020
Grenada	70	C&W	2006
Guyana	80	ATN	2010
Haiti	1	gov't owned	-
Jamaica	79	C&W	2013
St. Kitts/ Nevis	65	C&W	2015
St. Lucia	100	C&W	2001
St. Vincent/ the Grenadines	100	C&W	no commitment
Trinidad &Tobago	49	C&W	2009

As it currently stands, Cable and Wireless has a presence in 15 of the 17 English speaking islands of the Caribbean, providing a variety of services including local telephony, broadband internet, long distance service and wireless service through its offshoot BMobile.[51] C&W continues to enjoy success in the Caribbean market with it being the second most lucrative market outside of its UK market. The Caribbean market brought in in excess of $1 Billion in the fiscal period 2007/08.[52]

Before the negotiations on basic telecommunications and WTO members accepting the obligations of the GATS telecommunications laws on many of the Caribbean islands had not been updated before the Second World War and only existed for legislating the radio sector. Although many countries were burdened by the exclusive contracts with C&W, their inclusion in the negotiating process and membership in the WTO served them well in being able to successfully agree to exchange C&W's exclusive contracts for non exclusive ones, and to the creation of regulatory bodies to oversee telecommunications. Although the process was a long one CARICOM countries have enjoyed fully liberalized telecommunications since 2005.

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[51] The only islands on which C&W is not present are the Bahamas and the U.S. Virgin Islands.

[52] Figures attained from the latest C&W Annual Report and can be reviewed at http://www.cw.com/docs/media_events/media_centre/releases/2008/CW_Press_Release_May_2008_with_logo.pdf

Telecommunications Technology for Developing Countries

> "ICT has the potential to accelerate growth, create jobs, reduce migration pressure from rural to urban areas, increase agricultural and industrial productivity, increases services and access to them, facilitate the diffusion of innovations, increase public administration efficiency and the effectiveness of economic reforms, strengthen competitiveness in developing countries and encourage greater public participation and democracy."[53]

Within the last twenty years the governments of the Caribbean islands have recognized the power of the telecommunications sector and have begun to appreciate the economic benefits that can come with having legislation that is clearly outlined, and the impact that this can have on foreign direct investment into the telecommunications sector by way of competitive foreign interests into once monopoly markets. The recognition of the importance of telecommunications within the last decade has resulted in a number of conferences on telecommunications with representatives from the majority of the Caribbean islands. The Caribbean islands have also been signatories to the WTO's Basic Telecommunications Agreement as it regards telecommunications, which has in turn led to many islands formulating their own Telecommunications Acts, with the expressed aims of attracting competition and improving the quality and range of the services

[53] Von Braun, J &Torrero, M. (2006). Pg 1.

provided on the respective islands.[54] The accession to new standards for telecommunications service, privatization and liberalization are all designed to help the Caribbean 'leapfrog' their telecommunications environments to match those that exist in more developed countries.[55]

As stated in Megginson (2005), one of the goals of telecommunications privatization is to raise revenue for the state and this fact is also true for the islands of the Caribbean.[56] The funds generated from the selling of the controlling shares of the state owned enterprise (SOE) can go along in helping invest in other key areas of the economy. While in some cases the floating of government shares and the buying of these shares by investors has been that privatization took place, in other cases, liberalization and privatization were prerequisites for obtaining foreign direct investment. This is highlighted by the fact that in the drafting of the North American Free Trade Agreement (NAFTA) there was a section that included language specific to telecommunications.[57]

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[54] List of current commitments and exemptions to WTO basic and/or value-added telecommunications can be found at http://www.wto.org/english/tratop_e/serv_e/telecom_e/telecom_commit_exempt_list_e.htm

[55] In this context 'leapfrog' is meant to signify the aspects of telecommunications as discussed by Singh (1999) who outlines three meanings for the phrase in terms of telecommunications ability to help nations skip over stages of development and be more like more developed countries, it can help accelerate development and lastly refers to the ability to advance technically.

[56] Megginson (2005) refers to Price Waterhouse goals of telecommunications privatization in reference to discussing the rationale behind German and UK privatization events.

[57] Wellenius & Stern (1994). Pg 7.

The privatization of telecommunications is extremely lucrative not only for the state but if done properly can be very beneficial for the country as a whole. In the Caribbean the development that has come from liberalized telecommunications has had the effect of creating new economic industries such as financial services which many islands are now reporting as one of the greatest contributors to Gross Domestic Product (GDP). In fact, Hudson states "numerous studies have demonstrated a strong positive correlation between telephone density and economic development measured by GNP per capita."[58] Hudson even mentions the work of Hardy and the model he developed, which found that investment in telecommunications results in statistically significant growth as measured by GDP. In her work in Africa and South East Asia on the topic of telecommunications and development, Hudson put forward the following conclusions concerning telecommunications and the effects on the societies in developing and underdeveloped countries. These are as follows:

1. Investment in telecommunications contributes to economic growth;

2. The indirect benefits of telecommunications generally greatly exceed the revenues generated by the telecommunications network;

3. The availability of telecommunications can contribute significantly to rural economic activities;

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[58] Quote taken from Hudson, H.E. (1989), Developing Countries' Telecommunications: Overcoming the Barriers of Distance. IEEE Technology and Social Magazine. 8(4):7-10.

> 4. Use of telecommunications can improve the quality and accessibility of education, health care and other social services;
>
> 5. Benefits of investment in telecommunications may be greatest in rural and remote areas where distances are greater and telephone penetration is lower;
>
> 6. Intangible benefits of telecommunications such the fostering of the sense of community and strengthening of cultural identity, while difficult to measure, contribute to the development process.
>
> 7. Telecommunications can be considered a complement in the development process; i.e. other conditions must exist for maximum developmental benefits of telecommunications to be achieved.[59]

Other industries have also benefited, such as tourism, by making it possible for travelers to remain connected via the services they enjoy in their home country. However, the changes to telecommunications that have occurred in the Caribbean could not have been accomplished without significant changes to the regulatory frameworks on the islands.

Regulatory Reform

Researchers of telecommunications discuss the steps that need to be taken by governments in order to go about privatizing the SOE and prominent on this list is establishing a privatization agency. Wellenius and Stern also highlight the need to have a

[59] Hudson, H.E. (1989), Developing Countries' Telecommunications: Overcoming the Barriers of Distance. IEEE Technology and Social Magazine. 8(4)

strong regulatory body that is not only in charge of taking the SOE through all stages of the privatization process but is also responsible for regulating the newly privatized company.[60] These researchers also highlight the fact that the problem of weak regulatory frameworks coupled with a lack of judiciary understanding and outdated laws have been characteristics of many developing countries as they try to match the achievements of those that are more developed. Also highlighted is that fact that the regulatory body created needs to be autonomous and free from the pressure that can be exerted upon it by those in political power. Wellenius et al. state that developing countries are usually faced with "judiciary that lacks independence from the executive power or is prone to manipulation by interest groups; a legislative that is either captured by the executive or paralyzed by party fragmentation; unstable governments; and slow, ineffective and sometimes corrupt government administration." The islands of the Caribbean had to take the steps outlined in the process not only to make sure that the privatization process achieved the goal to privatize telecommunications but also to be sure that regulation was transparent and as such be observable by would be investors.

The issue of regulatory capture is important whenever new agencies are created to oversee an industry, and this is especially true in the Caribbean region since the incumbent has provided service for an extended period of time. The importance of

[60] See Megginson (2005). Pg 72 and Wellenius & Stern (1994) Pg 39.

creating a regulatory body that is autonomous and free from coercion is made even more difficult since the pool of local candidates that could be selected to comprise a regulatory body could well be former employees of the incumbent provider. In the Caribbean region there is also the issue that at least on service provider (in the Bahamas) also served as the industry regulator.

In her studies on the "Traits of an Independent Communications Regulator" Irene Wu outlined the characteristics that would lead to a regulatory body that can be seen as having decision making power that is without question, as well as insolate the body from the persuasions that could befall a agency in charge of regulating an industry where the stakes are high and the financial rewards great. Among the characteristics she analyzed and puts forward are: 1) the regulatory body must have leadership that serves for a set period of time and whose decisions are not grounds for removal; 2)the regulatory body must be the only agency that has the authority to issue licenses; 3) ideally the regulator should be funded independently and not rely on the state budget for the allocation of funds; 4) the regulator must have a clear decision making process that is available to the public and those in industry; 5) there should be little movement between the regulatory

agencies' staff and the industry; 6) the regulatory agencies' staff should follow strict rules of ethics regarding the disclosure of information about gifts and other benefits received.[61]

The push to liberalize telecommunications and introduce independent regulators in the Caribbean is not one that has taken place without challengers. The most publicized case of Caribbean telecommunications and the changes that have taken place in the region is that of Jamaica. In response to a declining economy and rising inflation of the 1980's and 1990's the government of Jamaica eyed its public utilities as assets that could be sold in order to attract foreign investment. Under the regime of the Jamaican Labor Party (JLP) the government entered into a joint venture with C&W that saw the incumbent service provider, Jamaica Telephone Company (JTC) replaced by Telecommunications of Jamaica (TOJ). Under the first deal the government would retain a controlling interest in the new telecommunications provider, but further economic hardship forced subsequent regimes to sell greater percentages to C&W thereby taking the company private. As part of the venture, licenses were issued to TOJ that gave them exclusive rights to telecommunications on the island that not only included the right to provide service but also included supply and installation of equipment and approval of all equipment connected to the network.[62] The agreement also stipulated between a 17.5- 20

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[61] Wu, I. (August, 2006). Traits of an Independent Communications Regulator: A Search for Indicators. FCC International Bureau Working Paper Series, June 2004.
[62] See pg 39 Dunn, H. S. & Gooden, W. S. (1998) in Noam, E.M. ed

per cent rate of return to C&W which was funded by fees charged for terminating international calls.[63]

The legitimacy of the exclusive contract given to C&W was soon in question with observers finding the deal terms and the period over which it was to extend excessive. C&W believed in the legality of the agreement as protected by the Telephone Act of 1893. This highlighted the fact that new laws needed to be passed that would address the technological advances and other legal scenarios that had become commonplace in modern day telecommunications regulation. Increasing financial hardship saw the government sell all its interest in TOJ in 1990 and in exchange for a good price proposed to amend the Telephone Act to give C&W the exclusivity agreements it wanted. The bill was divisive and shelved until general elections after which a new regime with a newly created ministry with reform minded thinkers at the helm created the Office of Utilities Regulation (OUR), which was created to serve as the regulatory body for all utilities on the island.

OUR set about challenging the agreements entered into with C&W since it saw itself as having the authority to regulate C&W as a utility. C&W tried fighting the changes that OUR tried to make to telecommunications on the island but through time, the changing of the telecommunications landscape worldwide, advances in technology

[63] Lodge & Stirton (2002). Pg 421.

and a change in the philosophy coming from the parent company in the UK, C&W negotiated with the government and eventually gave in to OUR, thus allowing itself to be regulated and clearing the way for Jamaica to accede to the WTO. Part of the negotiation was the drafting of new telecommunications policy that came by way of The Telecommunications Act of 2000 which was seen as a compromise on both parts, C&W and OUR, since it gave assurances to C&W in the form of new licenses while the Jamaican public gained greater telecommunications infrastructure. The Telecommunications Act of 2000 outlined newer measure for telecommunications liberalization on the islands and touted a three phase process which was to take place over a three year period.

The experiences of Jamaica in trying to privatize telecommunications serves as an example of "a small state, dependent on external private investment for its telecommunications service, managing to overcome the resistance of the incumbent monopolist and establish a program of liberalization, in a manner that broadly attracted support and strengthened the authority of the regulator."[64] The goings on in Jamaica has not been lost on the rest of the islands in the Caribbean since many of them are in a similar position with telecommunications on the island and involvement with C&W. The events have led to the formation of the Caribbean Telecommunications Union (CTU),

[64] Lodge & Stirton (2002). Pg 421.

which gives each state the power to regulate its telecommunications system. The events of Jamaica have also led to many countries creating regulatory bodies, amending existing telecommunications law and writing new laws to keep up with the technological and legal landscape. The Caribbean islands have also been signatories to the WTO's globalization agreement as it regards telecommunications, which has had the benefit of attracting competition and improving the quality and range of the services provided on the respective islands.[65] A grouping of smaller islands have gotten together to create a regulatory body that would legislate telecommunications on these islands, thereby creating the first telecommunications regulatory body of this nature in the world.[66]

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[65] List of current commitments and exemptions to WTO basic and/or value-added telecommunications can be found at http://www.wto.org/english/tratop_e/serv_e/telecom_e/telecom_commit_exempt_list_e.htm

[66] The Eastern Caribbean Telecommunications Authority (ECTEL) was formed in May 2000, and serves as the regulatory telecommunications body for Dominica, St. Kitts and Nevis, Grenada, St. Lucia and St. Vincent and the Grenadines.

Chapter 3

Methodology

This study is primarily concerned with examining the aspects of telecommunications policy that have affected the Caribbean in the last two decades. The issues of telecommunications policy fall under the interpretive legal/policy/historical aspects of mass communications as described by Potter, Cooper and Dupagne.[67] Along with interpretive legal/policy/historical research also outlined in three coexisting paradigms of mass communications research are social scientific and critical/ideological researches.

As stated by Liu (2006), legal/ policy studies have the ability to

> "appear like social science studies in their attempt to explain some phenomena of the media without relying on an explicit ideological framework. They also appear like critical/ideological studies in their lack of interest to generalize theories beyond the set of examples or cases cited."[68]

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[67] Potter, W. J., Cooper, R., & Dupagne, M. (1993). The three paradigms of mass media research in mainstream communication journals. Communication Theory, 3(4), 317.

[68] Liu, Chun (2006). China's Telecommunications: Accomplishments, Problems and the shape of the Future to come.

Given these characteristics, legal/policy studies is equipped to study such issues as Universal Service, telecommunications reform and other issues surrounding media and telecommunications and allows the researcher to take interpretive turns in trying to explain the phenomena investigated.

The field of mass communications is one that derives it strength from its interdisciplinary nature. Researchers in the field routinely draw on expertise and techniques from disciplines such as economics, law, statistics and others to aide in explaining the characteristics they are observing. Given this, the tendency to combine traditional aspects of qualitative and quantitative is one that is routinely experienced in mass communications research. This investigation is one that also draws on the interdisciplinary aspects of the field to explain the phenomena of Caribbean telecommunications and the changes that have taken place in the region with regard to that sector/industry. Toward this end the case study method was chosen for this investigation for its ability to combine both quantitative and qualitative research methods and provide a ‘thick description’ of the phenomena.

The Case Study Method

According to Yin (2003), conducting a case study "means conducting an empirical investigation of a contemporary phenomenon within its natural context using multiple sources."[69] In this case the sources come in the form of: 1) government documents such as telecommunications acts and policy drafts 2) statistical data from reputable sources 3) sector reports from organizations involved in the telecommunications sector.

The case study method is seen as the best tool for understanding the phenomena of telecommunications in the Caribbean since it provides the holistic, in-depth investigation as ascribed by Feagin, Orum, and Sjoberg.[70] This methodology also proves to be advantageous in cases where "when the boundaries between phenomenon and context are not clearly evident" and such is the case with the liberalization of telecommunications in the Caribbean.[71]

While building on the use of multiple sources and its ability to provide perspective in which boundaries between phenomenon and context are not clearly defined, the case study method also has the ability to answer the "who" and "why"

[69] Yin, R. K. (2003). Case study research: Design and methods (3rd ed.). Thousand Oaks, Calif.: Sage Publications.
[70] See Feagin, J., Orum, A., & Sjoberg, G. (Eds.), (1991). A case for case study. Chapel Hill, NC: University of North Carolina Press.
[71] Yin, R. K. (1994). Case study research: Design and methods (2nd ed.). Thousand Oaks, Calif.: Sage Publications.

questions and as such provide the ground for theory building. Eisenhardt (1989) argued the validity of the case study method citing that the building of theory based on a multitude of cases not only lent to the creation of theories that held up over theories built on looking at one case but also permitted replication. Apart from creating more valid theories, another advantage of the case study method is that it is flexible and allows for the discovery process to take place by researchers and also allows the phenomenon being investigated to unfold in a manner that is free of manipulation.

Document Analysis

With technological developments in telecommunications in the 1980's into the 1990's, and with the increasing globalization of markets, Caribbean countries have undertaken significant actions, particularly in legislative arenas, to make themselves more attractive to multinational corporations looking to avail themselves of the competitive advantages the islands of the Caribbean can offer. These actions have been embodied in the various forms of telecommunications legislation that have been passed in the past decade.

Whether coming as responses to outside forces seeking transparent telecommunications precedents as a means of attracting business interest, or whether the result of responses to social frustration with existing telecommunications, or a combination of the two, the fact remains that legislation has been passed by almost every country in the Caribbean. Toward completing this research project, legislative documents have been collected and analyzed.

As stated by Palmer, "to make sense of and interpret a text, it is important to know what the author wanted to communicate, to understand intended meanings, and to

place documents in a historical and cultural context."[72] Hermeneutic methods will be applied to the texts collected as far as reading of these legal documents and looking for key words and themes as they emerge (e.g., universal service, competition, privatization) and finding the text related to these key words and themes.[73] These selected words and themes will be identified from the legal documents for each of the countries studied and will be used as the basis for comparison.

This analysis recognizes that there are several forces which drive the creation of policy. By using the documents produced by the respective governments and regulatory bodies, this study will seek to identify the stated and/or implied rationale for these changes, as well as the means by which the policy making bodies hope to implement these changes. By analyzing these legal documents from this aspect, significant similarities and differences in the rhetoric that these Caribbean countries have used in devising plans to achieve their telecommunications objectives may also emerge. It is hoped that by doing this comparison, patterns appear indicating the regional influences of telecommunications liberalization and the effects of the diffusion of policy innovations.

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[72] Palmer, R. E. (1969). Hermeneutics. Evanston, IL: Northwestern University Press. As quoted in Patton, M. Q. (2001). Qualitative Research and evaluation methods. 3rd Edition. Sage Publications Inc.

[73] The use of textual analysis and techniques associated with the hermeneutic method are discussed in Feldman, M. (1995). Strategies for interpreting qualitative data. Thousand Oaks, CA: Sage., and also in Riessman, C.K. (1993). Narrative analysis. Thousand Oaks, CA: Sage.

This analysis of the evolution of telecommunications regulation in the Caribbean Islands will also be used to try to identify the ways in which the respective governments choose to 'position' themselves in the globalizing world. In this analysis, the legislative documents passed by the respective governments will be compared to the two most significant pieces of telecommunications regulation with regard to liberalization and competition enacted within the last twenty years: the United States Telecommunications Act of 1996 and the WTO Basic Telecommunications Agreement of 1997.

These two documents have distinct differences, since one mandates that telecommunications is a right that citizens of each country should be able to access, while the other is designed to bring about full competition among those providing telecommunications services. In comparing the language of these documents from the respective islands to that used in the two reference documents, it will be attempted to interpret whether these laws were more designed to conform to the WTO, and position the island with a more local focus (more for reaching a local audience), or if their language better matches that used in the '96 Telecom Act' and as such be designed to attract potential entrants from the United States and other countries. A movement to ensure telecommunications for all could also be seen as positioning the island on the global scene, since it would reflect being part of the WTO and adhering to the mandates put forward by that organization to its members.

Comparative Analysis of Statistical Data

Comparative analysis will be utilized in this research for analyzing the statistical data that has been collected. This technique is commonly used in comparing the effectiveness of laws and allows the identifying of the quantitative changes that have

taken place in a country based on the passing of certain laws. This technique allows for a greater understanding of the efficacy of new legislation, and in this case allows better understanding in terms of the number of subscribers, the types of services being offered and the number of service providers that have entered various Caribbean markets since the passage of new telecommunications regulations. Comparative analysis of this nature will not only show the changes in the numbers, but will also help to identify the rates by which these changes have taken place. These numbers will be used to verify if the actual rates of change in services, subscribership, providers, penetration and other measures of telecommunications competition are in fact meeting the goals of various governments, wherever stated.[74]

By incorporating this technique this research seeks to understand how the process of globalization and telecommunications liberalization has affected the islands of the Caribbean, and to learn how the policy changes that have taken place on the respective islands have come to terms with the rapidly changing telecommunications environment. Researchers have argued for and against looking at similarities and differences in doing

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[74] Livingstone, S (2003). On the Challenges of Cross-National Comparative Media Research. European Journal of Communication. 18(4): 477–500. On p. 479 the author discusses the use of comparison adding that the "Aims include improving understanding of one's own country; improving understanding of other countries; testing a theory across diverse settings; examining transnational processes across different contexts; examining the local reception of imported cultural forms; building abstract universally applicable theory; challenging claims to universality; evaluating scope and value of certain phenomena; identifying marginalized cultural forms; improving international understanding; and learning from the policy initiatives of others."

cross-national research but by understanding these facets within the islands, it is hoped that a greater understanding of the processes of telecommunications liberalization, privatization and competition could be achieved, identifying what has worked and what has not for the islands of the Caribbean, and potentially for those developing nations for whom the virtues of telecommunications change are just being realized.

This research incorporates two of the typologies discussed by Kohn (1989) in doing cross-national comparative research. The first of these is the use of the 'Nation as the unit of analysis.' The rationale for using the specific nations as the unit of analysis for this research is examined by Livingstone, who states that "given the prior identification of a number of measurable dimensions along which nations vary (e.g. gross national product, unemployment rate, etc.), systematic relations are sought among these dimensions, each nation thereby serving as one unit or data source."[75] This cross-national analysis is only possible because the variables being investigated (gross domestic product, teledensity etc.) have the same meaning/understanding in the countries selected and are measured using universal standards.

The second of the typologies discussed by Kohn is that of 'Nation as component of a larger international or transnational system'. This typology reflects directly on the

[75] Livingstone, S (2003). This article discusses the merits and issues of cross-national research. The 'nation as the unit of analysis' is seen as a multi-dimensional aspect of the 'nation as the context of study'.

theory of diffusion of innovation discussed earlier, in that it takes into account that nations are part of a wider society which can affect each other. This typology fits this research because it “permits a complex account of each national context or system, but here an external explanation is sought in terms of a larger hypothesized transnational global process rather than an internal one.” Such topics as globalization and imperialism fit perfectly into this approach as does telecommunications liberalization, since it too has become a global phenomenon, with many countries having undertaken the process since the early 1980’s. The only departure from the above quote in this case is the transnational process is that of acceptance of the WTO standards for telecommunications for membership in the WTO, as well as meeting the requirements for attracting multinational corporations to the country.

The following diagram puts into tabular form the typologies discussed by Kohn. The typology as it applies to this research is specifically found in considering the nation as ‘part of a larger system’, in this case as part of the Caribbean region. Some emphasis is placed in considering the nation as the ‘unit of analysis’ which aides in creating some comparison and highlighting individual differences. The chart below provides some guidelines as to scenarios in which these techniques are applicable.

Table **3-1**: Models of comparative cross-national research in media and communications.[76]

Nation as….	Objects of Study	Contexts of Study	Unit of Analysis	Part of Larger System
Primary focus	Idiographic-understand each country in own terms	Test abstract hypothesis or dimension across countries	Seeks relations among dimensions of national variation	Interpret each country subject to transnational system or process
Country selection	Compare any, all or similar countries	Maximize diversity on one dimension	Diversity within a common framework	Maximize diversity on all dimensions
Methodological standardization	Optional	Favoured	Favoured	Optional
Data/theory relation	Pre-theoretical: descriptive, mapping	hypothesis-testing	Metatheoretical: theory-building, modeling	Metatheoretical: theory elaboration
System-sensitivity	Weak	Weak	Strong (focus on internal system)	Strong (focus on transnational system)
Contextualization	Strong (but not cross-nationally comparable)	Weak (except as used in post hoc explanations)	Strong insofar as captured by comparative dimensions	Strong (balancing local and global)

[76] Table taken from pg 493 of Livingstone, S (2003). On the Challenges of Cross-National Comparative Media Research. European Journal of Communication. 18(4): 477–500.

Limitations and Exclusions

For the purpose of this study, the Caribbean region is taken to be the archipelago of islands stretching from the southernmost tip of Florida southward to islands just north of South America. Thus, the Caribbean would include the Bahamas Islands down to Trinidad and Tobago in the south. Given the colonial history and the close relations that some of these islands have, the validity of a study of this nature can be questioned in terms of the variance of the findings given that it can be argued that the islands are almost identical to each other in terms of governance, economy, racial composition and other factors. However this argument is tempered by Livingstone, who argues that "if one is treating each nation as the *object of study*, comparing fairly similar countries may prove most useful, particularly if informing policy is the object."[77] This point is especially important since it is hoped that the analysis of the various methods used in the Caribbean to updated telecommunications law and improve the telecommunications sector, be it for the island residents or to attract foreign investment, can identify the methods that work best in a given situation, and thereby can be used as a reference for those seeking to bring about these changes in the future.

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[77] This quote is found in Livingstone (2003) pg 488, where she references the work of Teune, H. (1990) 'Comparing Countries: Lessons Learned', pp. 38–62 in E. Ø yen (ed.) Comparative Methodology: Theory and Practice in International Social Research. London: Sage.

It should also be stated that while this research uses some of the methods involved in textual analysis (e.g. reviewing texts for key words and phrases and comparing them to the key words and phrases from other texts), it is not a "textual analysis." While the texts will be read and themes identified and compared, code books will not be created nor will the texts be coded as in following textual analysis in its strictest sense.

During the process of data collection it was found that statistical data were not readily available for all the islands in the Caribbean, in terms of numbers related to their telecommunications sector. These statistics were either unavailable, outdated or could not be verified as coming from a reliable source. It was also found that information, by way of legal documents, regarding the passing of telecommunications laws were also not readily available for some islands in the Caribbean. These two circumstances preclude the inclusion of all the islands of the Caribbean. Other limitations arose from the fact that some of the islands in the Caribbean fall under the governance of other countries, and as such fall under the regulatory umbrellas of these nations, thus making data availability and access difficult. Language also proved to be an issue since some of the documents were not translatable. These conditions meant that the Caribbean islands were restricted to those for which telecommunications data, both statistical and legal, were accessible.

Based on these limitations and the methodology employed, the list of countries selected for this study stands at these eleven (11) nations listed: Anguilla, Antigua and Barbuda, The Bahamas, Barbados, Bermuda, Grenada, Jamaica, St. Lucia, St. Kitts, St. Vincent and Trinidad and Tobago.

Chapter 4

Research Implementation

As previously noted, the last decade has seen a flurry of activity on the part of Caribbean governments to make changes to the telecommunications structures in place on the respective islands. The trend toward liberalization and privatization of telecommunications and the introduction of competition to telecommunications sectors could not be accomplished without significant updating of existing telecommunications laws on the islands. These laws have had significant impacts in that they have brought transparency to a sector in which it previously did not exist, and have allowed for the transition from monopoly controlled and government owned telecommunications to privately owned, fully competitive telecommunications, with greater product innovation and more available services.

The overall feeling in the Caribbean was that in order to keep up with the demand for telecommunications services, there needed to be liberalization of the industry and permission for interested investors to come in to the islands to meet the previously unsatisfied demands. The sentiments are echoed in the telecommunications policy discussion that took place on the island of Anguilla in preparation for adopting new

telecommunications policy. In this document the need for liberalization is explained as follows:

> "The present telecommunications legal structure for most of the world was designed at a time when telephone and telex were the main services provided by telephone companies. It was also a time of national public and private monopolies, before deregulation and the explosion of the services and technologies that are now an every day feature of modern life. Increasingly governments and their citizens feel constrained by the regulations (or lack thereof) and the telecommunications landscape that was established in these former times. The quality of service and technology implementation is very often found unsatisfactory."78

Similar sentiments were echoed throughout the Caribbean as governments began to think about the ways in which they could ensure better telecommunications for their residents, and keep up with the advances taking place around the world.

The general feeling toward telecommunications liberalization in the Caribbean was one of enthusiasm. The governments of the Caribbean saw the changes as not only necessary for bringing telecommunications more in line with the rest of the world, but also saw the liberalization, privatization and the introduction of competition as a means of getting in line with the 'best practices' in the telecommunications sector.[79] For these governments, following these trends also meant attracting foreign direct investment in telecommunications as well as making capital available for other societal developments.

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[78]Taken from Anguilla Telecommunications Policy. This material can be accessed at http://www.gov.ai/telecommunications/

[79] The Best Practice Guidelines would allow for: transparency; regulatory flexibility and technological neutrality to promote technological innovation; regulatory certainty for all competitors; and regular reviews to remove undue barriers to competition.

In the Bermuda the adoption of new telecommunications regulation and the formation of an independent regulator to oversee telecommunications served different objectives. The government of that island viewed these objectives as serving:

> a) To acknowledge telecommunications as a critical element of the national infrastructure and to encourage the development and maintenance of resilient and redundant physical infrastructures;
>
> b) To create an environment whereby the telecommunications sector is a meaningful contributor to the diversification of the economy;
>
> c) To promote the growth and sustainability of the industry
>
> d) To encourage the deployment and adoption of new products and services that sets Bermuda apart from other competing jurisdictions.[80]

Many of the documents and the discussions taking place on the islands before the implementation of new laws point to the vision that the respective governments had in terms of their thinking about the effect the new and revised documents could have on the island society. Many of the island governments developed plans for the future based on the widespread availability of ICT technologies and services.

Often specifically stated in these plans is the goal of making the particular island a leader in the region in terms of making the citizenry fully capable of using the

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[80] This excerpt taken from 'Government of Bermuda (2006). Ministry of Telecommunications and e-Commerce. Reforming Telecommunications Regulation in Bermuda. Consultation Document' highlights the fact that while telecommunications serves the purpose of advancing the population there is the aspect of competing with other countries for investors and industry.

technologies deployed on the island.[81] Arising from the change of industrial focus from manufacturing and agrarian-based to one that is more technologically-based is the need for a workforce that is skilled in the new technology. This too has become an area of focus in the region with governments using the newly available technologies to train the up and coming secondary school students by equipping the schools with the technology, as well as the creation of technology centers where adult learners can go to get training in the use of computers and software.

The need to develop the educational aspect of the technology has the dual benefit of both empowering the citizens and making the island more attractive to investors. The Bahamian government when talking about the potential for e-commerce on the island states the advantages of the Bahamas' location as:

> a) a strategic location as a natural gateway to and from the Americas, serving historically and literally as a natural bridge or link between the "old" and "new" worlds as well as between North and South America;
>
> b) a conducive regulatory and legal framework that meets international best standards and practices;
>
> c) reliable and frequent air links to major international destinations;
>
> d) a world class transshipment facility on Grand Bahama Island;
>
> e) English as the national language;

[81] Many of the islands for which data has been collected have drawn up plans of action related to ICT, which include education programs starting at the primary school level and continuing up. These goals are supported by the goals of universal service, which many governments have articulated, which will include internet connections to these institutions of learning and also in some cases to public places e.g. libraries.

f) A United Kingdom based legal system;

g) a strong tradition in providing highly-skilled professional and financial services;

h) a young trainable workforce;

i) available land for the development of concentrated centres of high technology; and

j) an already extensive submarine network of fibre optic cabling.[82]

These sentiments are not only held by the government of the Bahamas but by many other Caribbean islands. In a December 31st, 1999 address to the nation entitled 'Millennium Vision' the then Prime Minister of Grenada Dr. Keith Mitchell stated, "My government is totally committed to creating an attractive policy and regulatory environment to facilitate the development …of Grenada as a Knowledge Society" and his government dubbed this decade the 'Knowledge Enhancement Decade" with the goal that "At least fifty percent of our human resources [must be] engaged in high-value knowledge-based activities, including information and communication technology, financial services, education, agriculture, tourism, sport and entertainment."[83] The shift in focus toward a technology and knowledge base comes at a time when other industries such as agriculture and manufacturing are faltering, and as such, technology-based

[82] See Commonwealth of The Bahamas Policy Statement on Electronic Commerce and the Bahamian Digital Agenda.
[83] Excerpts taken from "Information and Communication Technology: A Strategy and Action Plan for Grenada 2001-2005."

industries are seen as the means to battle rising unemployment and loss of manufacturing industry.

Research Findings

During the mid 1990's there were two seminal documents that helped shape telecommunications worldwide, namely the 1996 Telecommunications Act of the United States and the WTO's Basic Telecommunications Agreement. Both of these documents espoused the view that telecommunications was a sector that needed to be fully competitive in order for it to succeed, and for the public to see the innovation and new services that came as a result of companies competing. While the '96 Act focused specifically on the U.S. industry, with competition as its focus, the BTA also touted the changes that needed to be undertaken by countries around the world, especially developing countries, to make them competitive and comparable with the rest of the world. As such the BTA went beyond the '96 Act in that it also called for reforms to the regulatory systems, the creation of independent regulators and the promotion of the goals of universal service.

Regulatory Independence

During the 1990's and continuing today, many of the islands of the Caribbean have gone about the process of creating regulatory bodies to implement their telecommunications legislation. Although this was one of the stipulations of committing to the WTO's BTA, it is the case that countries have undertaken the process without being committed to the BTA, perhaps as a realization that this is one of the keys to attracting foreign investment in the sector. The table shown (Table 4-1) lists those countries that have recently created regulatory bodies to oversee telecommunications and

in some cases other public utilities. While most of the countries listed in the table have committed to the WTO, The Bahamas, Belize, St. Lucia and St. Vincent and the Grenadines have not signed on with the WTO.

Other Caribbean countries not listed in the table have also undertaken the regulatory process. Some member nations of the Organization of Eastern Caribbean States (OECS) through their National Telecommunications Regulatory Commissions (NTRC) have agreed to collaborate toward the formation of the Eastern Caribbean Telecommunications Authority (ECTEL).[84] As stated in Article 4 of the 2001 Telecommunications Act of St. Vincent and the Grenadines:

> The major purposes of ECTEL shall be to promote:
>
> (a) open entry, market liberalisation and competition in telecommunications of the Contracting States;
>
> (b) harmonised policies on a regional level for telecommunications of the Contracting States;
>
> (c) a universal service, so as to ensure the widest possible access to telecommunications at an affordable rate by the people of the Contracting States and to enable the people of the Contracting States to share in the freedom to communicate over an efficient and modern telecommunications network;
>
> (d) an objective and harmonised regulatory regime in telecommunications of the Contracting States;
>
> (e) fair pricing and the use of cost-based pricing methods by telecommunications providers in the Contracting States;

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[84] For more information about the members of the OECS see http://www.oecs.org/index.html. For more information about ECTEL see http://www.ectel.int/index.html. OECS members that are regulated by ECTEL are Commonwealth of Dominica, Grenada, Saint Christopher and Nevis, Saint Lucia, Saint Vincent and The Grenadines.

> (f) fair competition practices by discouraging anti-competitive practices by telecommunications providers in the Contracting States;
>
> (g) the introduction of advanced telecommunications technologies and an increased range of services in the Contracting States;
>
> (h) increased penetration of telecommunications in the Contracting States;
>
> (i) the overall development of telecommunications in the Contracting States;
>
> (j) national consultations in the development of telecommunications.

While the OECS have chosen a collaborative approach to telecommunications regulation other states have chosen to go about the process on an individual basis, the result of which is at least 3 different outlooks on the structure of a regulatory body. Table 4-1 helps to outline the differences in the shapes of the regulatory bodies governing telecommunications in the region. From looking at the table a pattern emerges amongst the ECTEL states in that they have regulatory bodies that mimic each other in the nature of the body and to whom the body reports to and the number of persons comprising the regulator.[85] The remaining Caribbean countries show the diverse outlook of the regulatory bodies, by having agencies that range from two (2) members to those having as many as eleven (11). Differences also exist in the way that these regulatory bodies are funded with spectrum and license fees and government appropriation and investment being the main sources of support.

[85]Grenada differs from the other ECTEL regulated countries in that the regulator is not autonomous with the Minister having the final say.

The choice on the part of the OECS countries to combine resources to form ECTEL is a shrewd one given the fact that the incumbent service provider in the region, Cable and Wireless, has had decades of experience in worldwide telecommunications and the resources with which to appeal the judgments made by regulators to the point of overwhelming those making policy on some of the Caribbean islands.[86]

[86] Many countries expressed concern about the reaction by Cable & Wireless to the proposed changes in legislation and the introduction of competition. Chief of these concerns was the fear that C&W would exhibit anti-competitive tendencies, thereby making it difficult for newcomers to interconnect, share facilities and being charged exorbitant fees for interconnection and call termination.

Table **4-1**: Countries with a separate Regulatory Authority in the Caribbean.

Country	Name of Authority					
	Year created	Autonomous in its decision making	Reports to	Legal document that created the authority	Financed by	Is it a collegial body?
Bahamas	The Public Utilities Commission					
	1999	Yes	After the end of the financial year transmit an Annual Report to the Governor General and Prime Minister	Public Utilities Commission Act, 1993	License Fees Government appropriation; percentage 19.9%	Yes 3 members
Barbados	Fair Trading Commission					
	2001	Yes	Report to Legislature Report to other Ministry	Fair Trading Commission Act 2000-31	Government appropriation; percentage	Yes 11 members
Grenada	National Telecommunications Regulatory Commission					
	2000	No Decisions approved by Minister	Annual report to the Sector Ministry	Telecommunications Act 31 of 2000	Spectrum fees; percentage: 100%	Yes 5 members
Jamaica	Office of Utilities Regulation					
	1995	Yes	Report to the other Ministry. Annual report is submitted to the Legislative Branch through the Minister of Development. Also, a Quarterly Finance & Operations submitted to the Ministry of Finance and Planning	Office of Utilities Regulation Act	Regulatory Fees; Percentage: 98.7% Financial income (e.g Investment/Deposit); percentage: 0.5% Application process fee: 0.8%	Yes 2 members
St. Lucia	National Telecommunications Regulatory Commission					
	2000	Yes	Annual report to the Sector Ministry	Telecommunications Act 2000	Spectrum fees; percentage: 100%	Yes 5 members
St. Vincent and the Grenadines	National Telecommunications Regulatory Commission					
	2001	Yes	Annual report to the Sector Ministry	Telecommunications Act No.1 of 2001	Spectrum fees; percentage: 97.7% Application fees	Yes 5 members
Trinidad & Tobago	Telecommunications Authority of Trinidad & Tobago					
	2004	Yes	Annual report to the Sector Ministry	Telecommunications Act 2001 (as amended by Telecommunications (Amendment) Act 2004	License fees; percentage: 40% Government appropriation; percentage	Yes 11 members
Source- ITU World Telecommunications Regulatory Database						

In considering the 'independence' of the regulatory bodies in the Caribbean and in using the technique created by Wu, the majority of the Caribbean islands will not have a regulator that can be thought of as truly independent according to Wu's metric. There are many instances in the Caribbean where the government does have a majority interest in the incumbent operator, as well as many instances where the regulators are dependent on government allocation of financial resources. However, this does mean that these regulators are not capable bodies with reputations beyond reproach.

Although the islands of the Caribbean do not match all the conditions specified by Wu, the issue of regulatory capture is one that has not come to fore in the region. In creating regulatory bodies and the ways they are structured there are mechanisms built into the regulatory process that act as checks and balances against forces of coercion. Having to prepare documents to be presented to the Minister and parliament as well as having transparent decision making processes do help to give a sense of confidence to those competing in the industry and also act as an advertisement to potential investors/competitors.

Universal Service

Despite the differences in the Regulatory frameworks one aspect seems to be constant in the legislation outlined by the islands of the Caribbean, "Universal Service". For each country for which legal documents were collected all make reference to Universal Service and include provisions that would achieve this goal. The goal of Universal Service, like the formation of regulatory bodies, differs between the countries. The example below shows the definition of Universal Service for one of the countries regulated by ECTEL. Although ECTEL serves as the regulator for these states each

island has respective Telecommunications Acts. Some of the ECTEL islands stipulate Universal Service as follows:

> "universal service" includes:
>
> (a) public voice telephony to the population of a Contracting State;
>
> (b) Internet access to the population of a Contracting State;
>
> (c) telecommunications services to schools, hospitals and similar institutions and to the disabled and physically challenged;
>
> (d) the promotion of telecommunications services so as to ensure that as wide a range of people as possible share in the freedom to communicate by having access to efficient and modern telecommunications at an affordable cost.[87]

This view of Universal Service, by means of comparison not only to other countries in the Caribbean, but also to countries with more developed telecommunications infrastructures and regulations, is very progressive in that it includes access to the internet. The debate over the inclusion of internet access under the umbrella of Universal Service is one that is still being waged in more developed countries. Another Caribbean country looks at universal service from the point of view that:

> There shall be a universal service obligation which is an obligation imposed on the Universal Service Carrier designated by the Minister under section 34(1), to
>
> (a) ensure that basic telecommunications service, which is the ability to access dial tone in order to make telephone calls to other end-users, is

[87] Excerpt taken from the "Treaty Establishing the Eastern Caribbean Telecommunications Authority"

> reasonably accessible to all people in Barbados on an equitable basis wherever they reside or carry on business;
>
> (b) ensure that payphones are reasonably accessible to all people in Barbados;
>
> (c) permit access to directory inquiries;
>
> (d) permit access to emergency numbers free of charge;
>
> (e) provide appropriate telecommunications equipment to disabled persons to ensure access by those persons to the basic telecommunications service.[88]

This excerpt from Barbados' Universal Service policy refers only to the basic telecommunications needs. This however does not indicate that the level of services in Barbados compared to the ECTEL states is lower, but needs to be analyzed in the national context with other factors, such as teledensity, the availability of wireless telephony and internet subscription numbers, taken into consideration. The remaining Caribbean countries fall between these two cases in terms of what services are deemed part of Universal Service.

One example of a case that falls between these parameters of universal service is Anguilla, an ECTEL state that has used its national autonomy to define universal service

[88] Quote taken from the Telecommunications Act of Barbados

differently than other ECTEL regulated states. The government of Anguilla define universal service as:

> (a) access to the public telephone service, as set out in section 4;
>
> (b) the provision of a free telephone directory, as set out in section 5;
>
> (c) the provision of a directory inquiry service, as set out in section 5;
>
> (d) the provision of public pay telephones, as set out in section 6; and
>
> (e) the provision of the universal services listed in (a)-(c) above, or such other services as the Commission may add pursuant to subsection (2), to low income or other special classes of users, as set out in section 7.[89]

In recent years the universal service discussion in the Caribbean has shifted from simply providing basic telecommunications services to the population, to the provision of internet service. This change in policy has even been extended by the government of Grenada to include e-mail services for the entire population. In 'Promoting the Universal Uptake of the Internet' the government of the Grenada states three aims:

> (a) The dissemination of e-mail on a national scale
>
> (b) The creation of a Grenada Internet Exchange
>
> (c) National Free Grenada Internet[90]

---

[89] Excerpt taken from Government of Anguilla (2004). Universal Service and Public Telecommunications Regulations, 2004, No. 2.

[90] See pg 32 of Government of Grenada (2002). Information and Communication Technology: A Strategy and Action Plan for Grenada 2001- 2005.

The change in philosophy from basic services to those that include the internet is aided by the fact that telephone penetration rates have increased in many of the islands of the Caribbean. During the period 1995-2000 all the Caribbean islands saw an increase in the number of main telephone lines deployed and also increases in the teledensity. In the period from 2002-2007 the trend held true for the majority of the countries but some islands showed negative growth in both categories.

With main telephone lines and teledensity reaching points of stagnation and negative growth, the spread of the internet is now central to the universal service debate. The internet is seen as not only a way of social incorporation through communicating during times of national emergency, but is also seen as a necessity in keeping current with the rest of the world from an economic standpoint.

The uptake of internet in the Caribbean has been steadily increasing since the start of the current millennium as prices have come down. The reduction in the cost of subscribing to the service and also the arrival of the more efficient capabilities of broadband internet has seen the number of internet subscribers, internet users and computer owners' increase. Despite these trends on some islands, others are still faced with the fact that internet density remains below half of the population. In addressing the issue of the National Free Grenadian Internet the government of that island see the problem as a 'chicken-and-egg scenario' stating that,

> "A strong local presence from Grenada businesses on the Internet will not develop until a critical mass of Internet users is established in order to make the Internet a viable alternative distribution and marketing channel. On the other hand, a critical mass of users will not develop until there is a strong enough local presence and content on the Internet. This would make the use of the Internet an attractive proposition to the public, in that they would be able to access a rich array of relevant and useful local content."[91]

One of the fundamental problems with Universal service in the Caribbean is the issue of funding the program. When universal service was first introduced the telecommunications landscape in most of the islands consisted of one local service provider, which in some cases also provided wireless services. With the liberalization of markets and the entry of competition these once monopoly providers remained burdened with funding universal service. The case of Jamaica is one example where the argument over funding universal service versus whether or not universal service programs were actually needed took place. As stated by the UN Economic Commission for Latin America and the Caribbean:

> Provisions for a Universal Access Fund in Jamaica were included when the Telecommunications Act enacted in 2000, setting the framework for the government to collect 5% of the telecommunication providers' revenues.
>
> Its introduction, however, found strong resistance from the local telecommunications industry, which argued that mobile coverage was already providing universal service all over the country. The government

[91] See pg 33 of Government of Grenada (2002). Information and Communication Technology: A Strategy and Action Plan for Grenada 2001- 2005.

> countered by defining the use of the fund as not limited to voice services and started a process of consultations with the private sector.
>
> The result was a compromise to impose a levy on voice-calls of 2 cents per mobile call and 3 cents per PSTN call, with the government's commitment to set interconnection of schools (through the Ministry of Education) as the top priority in using this funds. The Universal Access Fund went finally into effect in June 2005.[92]

On the other hand, Barbados has made it so that a government Minister in charge of telecommunications not only serves as regulator but has the authority to designate the universal service provider. The universal service fund is collected from all service providers on the island.[93] In the islands that are regulated by ECTEL the minister also has the authority to assign a universal service carrier and also determine what percentage of revenue is contributed to the universal service fund by all telecommunications service providers.

Table 4- and Figure 4-1 provide some statistical proof of the changes that have taken place in the Caribbean region in terms of the trends in the numbers of Main Telephone lines on the islands in the region in the period before the moves to liberalize up until the 2007. As can be seen from both representations the period 1995- 2000 was one of marked growth in the number of lines with each country showing positive

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[92] See pg 22 'United Nations Economic Commission for Latin America and the Caribbean (2006). Jamaica's Information Society Country Profile.'
[93] See pg 39 article 4(1), 34(1) and 36(1) 'Telecommunications Act of Barbados.'

numbers for this period. This trend however changes in the period 2002-2007 in which a number of islands begin reporting decreases in the number of main lines.

Table **4-2**: Main Telephone Lines 1995-2000 & 2002-2007.[94]

Main (fixed) telephone lines							
	(000s)		CAGR (%)		(000s)		CAGR (%)
	1995	2000	1995-2000		2002	2007	2002-2007
Antigua/ Barbuda	25.9	38.3	8.1		38.0	37.5	-0.4
Aruba	27.3	38.1	6.9		37.1	38.7	1.0
Bahamas	83.7	114.3	6.4		126.6	132.9	1.0
Barbados	90.1	123.8	6.6		133.0	134.9	0.5
Bermuda	46.4	56.1	3.9		56.0	56.0	0.7
Cayman Islands	19.4	35.0	12.5		-	-	-
Dominica	17.8	22.7	5.0		23.7	21.0	-6.0
Grenada	23.2	31.4	6.2		33.5	27.7	-4.7
Guyana	44.6	68.4	8.9		80.4	110.1	11.0
Haiti	60.0	72.5	3.9		130.0	150.0	3.6
Jamaica	290.3	493.5	11.2		434.8	342.0	-5.8
Neth. Antilles	75.9	80.0	1.1		-	-	-
St. Kitts/ Nevis	14.4	21.9	8.7		23.5	25.0	3.1
St. Lucia	30.6	48.9	9.8		51.1	-	-
St. Vincent/ the Grenadines	18.2	24.9	6.4		27.3	22.8	-3.6
Trinidad &Tobago	209.3	316.8	8.6		318.2	323.8	0.4
Virgin Islands (US)	58.3	68.3	3.2		69.4	71.7	1.1

[94] ITU World Telecommunication Regulatory Database

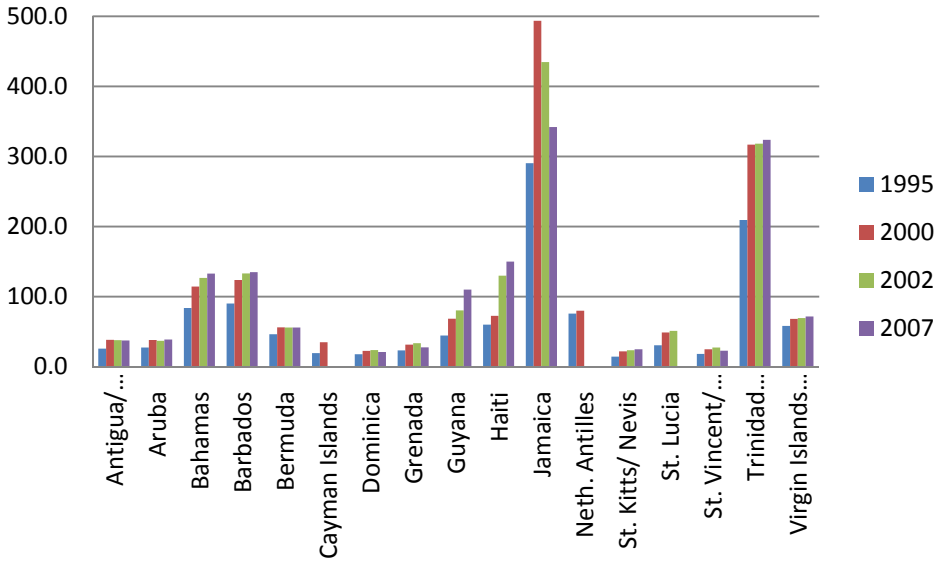


Figure **4-1**: Bar Chart showing main fixed telephone lines from 1995-2000 & 2002-2007.[95]

[95] ITU World Telecommunication Regulatory Database

Table **4-3**: Main (fixed) Telephone Lines per 100 from 1995-2000 & 2002-2007.[96]

Main (fixed) telephone lines per 100							
			CAGR (%)				CAGR (%)
	1995	2000	1995-2000		2002	2007	2002-2007
Antigua/ Barbuda	37.23	50.07	6.1		48.38	45.45	-1.5
Aruba	32.39	41.37	5.0		39.03	38.38	-0.4
Bahamas	29.99	37.93	4.8		40.81	40.10	-0.3
Barbados	34.09	46.29	6.3		49.44	50.14	0.5
Bermuda	75.55	89.20	3.4		88.30	89.52	0.3
Cayman Islands	59.06	88.15	8.3		-		-
Dominica	24.84	31.74	5.0		33.19	29.40	-5.9
Grenada	23.33	30.86	5.8		32.95	26.74	-5.1
Guyana	6.09	9.20	8.6		10.76	14.66	10.9
Haiti	0.84	0.89	1.3		1.57	1.73	2.6
Jamaica	11.62	19.00	10.3		16.56	12.85	-6.2
Neth. Antilles	36.59	37.16	0.3		-	-	-
St. Kitts/ Nevis	35.78	54.16	8.6		57.06	59.26	1.9
St. Lucia	20.68	31.66	8.9		32.58	-	-
St. Vincent/ the Grenadines	16.46	21.96	5.9		23.35	18.93	-4.1
Trinidad &Tobago	16.78	24.47	7.8		24.45	24.29	-0.1
Virgin Islands (US)	54.86	62.87	2.8		63.06	64.02	0.5

[96] ITU World Telecommunication Regulatory Database

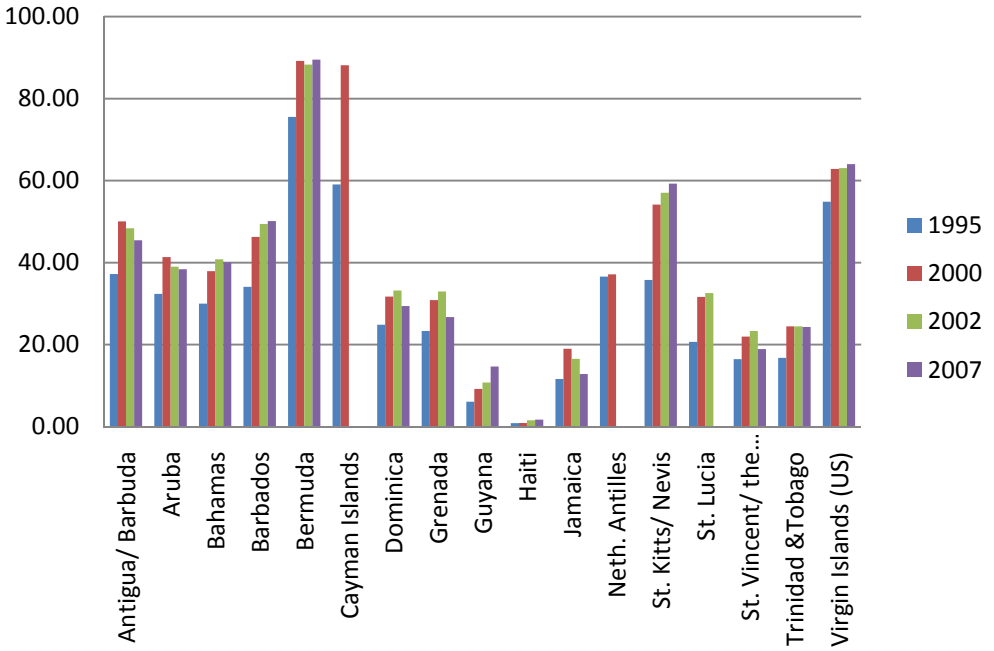
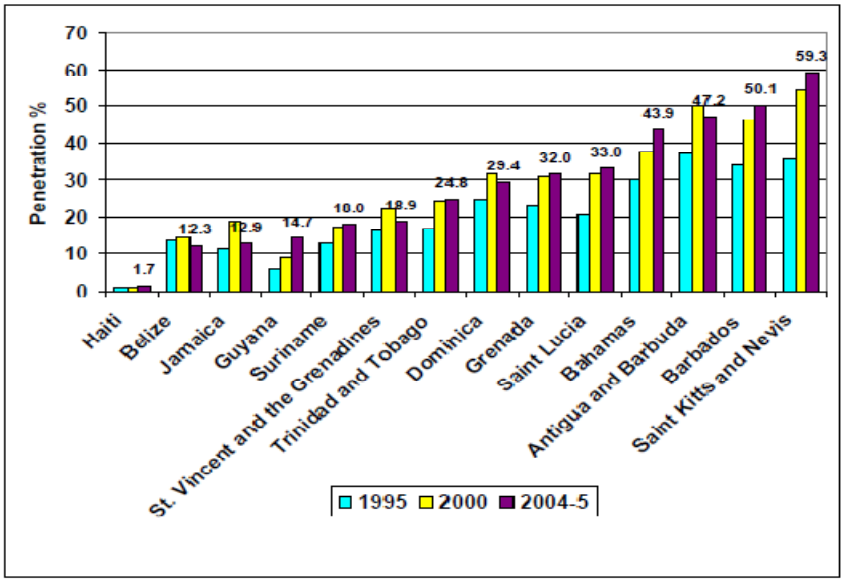


Figure **4-2**: Bar Chart showing main fixed telephone lines from 1995-2000 & 2002-2007.[97]

The characteristics exhibited in the decreasing number of main fixed lines are further shown in the main telephone lines per 100 inhabitants. As seen in Table 4-3 and Figure 4-2 the increase in the number of main line from the period 1995-2000 are reversed in the period 2002-2007, with approximately half the countries showing

[97] ITU World Telecommunication Regulatory Database

decreasing figures in this latter period. Figure 4-3 shows the overall Main line Telephone penetration rates for the islands of the Caribbean.



Source ITU WTI 2006

Figure **4-3**: Main Line Telephone Penetration in the Caribbean.

While the main fixed line segment of telecommunications has been adversely affected with the moves to liberalize the industry, the internet service segment has seen a study up growth trend from the 2000 to the current period. There have been increases in the number of subscribers, subscribers per 100 inhabitants, other categories used to measure growth. Also increasing is the number of subscribers who now get their internet service through a broadband connection. The rapid growth comes as no surprise since the starting point for measuring internet service uptake was low because the technology was not pervasive in the society, and it also follows the fact that the price of service has come down to a point where more Caribbean island residents can afford the service and recognize the convenience of have a faster, dedicated connection. These trends and statistical figures are shown in tables 4-5 and 4-6 for the years 2000 and 2007

respectively.

Table **4-4**: Internet Subscribers 2000.[98]

	Internet					
	Subscribers (000s)	Subscribers per 100 inhab.	Users (000s)	Users per 100 inhab.	Broadband Subscribers (000s)	Broadband Subscribers per 100 inhab.
	2000	2000	2000	2000	2000	2000
Antigua/ Barbuda	-	-	5.0	6.54	-	-
Aruba	-	-	14.0	15.20	-	-
Bahamas	8.4	2.77	13.1	4.36	-	-
Barbados	-	-	10.0	3.74	-	-
Bermuda	-	-	27.0	42.95	-	-
Cayman Islands	-	-	-	-	-	-
Dominica	2.8	3.85	6.0	8.39	0.1	0.11
Grenada	2.8	2.73	4.1	4.05	-	-
Guyana	13.0	1.75	50.0	6.72	-	-
Haiti	7.0	0.09	20.0	0.25	-	-
Jamaica	-	-	80.0	3.08	-	-
Neth. Antilles	-	-	2.0	0.93	-	-
St. Kitts/ Nevis	-	-	2.7	6.67	-	-
St. Lucia	-	-	8.0	5.18	-	-
St. Vincent/ the Grenadines	2.7	2.34	3.5	3.09	-	-
Trinidad &Tobago	26.5	2.04	100.0	7.73	-	-
Virgin Islands (US)	-	-	15.0	13.81	-	-

[98] ITU World Telecommunication Regulatory Database

Table **4-5**: Internet Subscribers 2007.[99]

Internet							
	Subscribers (000s)	Subscribers per 100 inhab.	Users (000s)	Users per 100 inhab.		Broadband Subscribers (000s)	Broadband Subscribers per 100 inhab.
	2007	2007	2007	2007		2007	2007
Antigua/ Barbuda	11.3	13.75	60.0	72.29		6.8	8.23
Aruba	14.0	13.86	24.0	23.10		12.3	12.34
Bahamas	25.2	7.62	120.0	36.22		13.0	3.93
Barbados	-	-	280.0	95.27		55.3	20.45
Bermuda	37.9	58.82	48.0	74.42		23.6	36.71
Cayman Islands	-	-	22.0	46.60		-	-
Dominica	6.0	8.44	26.5	37.22		3.3	4.56
Grenada	7.3	7.03	23.0	21.77		5.5	5.35
Guyana	48.0	6.39	190.0	25.75		2.0	0.27
Haiti	75.0	0.91	1000.0	10.42		-	-
Jamaica	85.0	3.19	1500.0	55.27		79.0	2.97
Neth. Antilles	-	-	-	-		-	-
St. Kitts/ Nevis	-	-	15.0	34.72		-	-
St. Lucia	-	-	110.0	66.70		-	-
St. Vincent/ the Grenadines	7.4	6.16	57.0	47.34		6.9	5.70
Trinidad &Tobago	63.4	4.75	225.0	16.88		15.6	1.17
Virgin Islands (US)	-	-	30.0	26.92		3.0	2.65

[99] ITU World Telecommunication Regulatory Database

Competition

For the countries of the Caribbean, the process of telecommunications liberalization has been geared toward attracting foreign entrants into what was for many countries a monopoly-run sector of industry. These foreign entrants either through taking over the former monopolists or by setting up new service providers, are seen as the answer to the hardships suffered by the population coming through waiting lists for telephone connections, high prices and the lack of new services and the slow deployment of newer technology.

The table that follows shows the level of competition that now exists in the Caribbean as far as telecommunications services are concerned. Since the passing of regulatory legislation and the opening of the markets to fair competition, there have been a number of successful entrants into the Caribbean markets providing telecommunications services, but as is demonstrated by the table, these entrants are competing in markets such as wireless, data services and international long distance sectors. The majority of the Caribbean, despite efforts to have fully competitive telecommunications in all sectors, remains under monopoly control in many of the sectors, especially in local telephone service.[100]

[100] See Table 4-7.

The changes in telecommunications regulation, the increases in foreign investment and the introduction of competition have resulted in significant changes in the telecommunications landscape. The increased competition and investment is primarily due to the relaxation of ownership rules, thus making it possible for telecommunications to be partially or completely owned by a foreign entity. A prime example of this is the island of Bermuda, which in addressing telecommunications reform, proposed doing away with the 60 percent local ownership for licenses in the domestic market, while at the same time allowing 100 percent ownership of long distance services. These proposed changes are geared toward making sure that there is a level playing field for competitive entrants.[101]

While other countries have not specifically addressed the rules pertaining to foreign ownership, it stands to reason that a majority of the islands have had to consider the issue at some point in their history. This is especially true in the English speaking islands of the Caribbean, which have had to deal with Cable & Wireless for decades, with ownership either totally being in its hands or in combination with the government. Tables 4-7 and 4-8 outline the new competitive entrants to telecommunications, the legislation that made it possible, the current market access situation the foreign ownership

[101]See Ministry of the Environment, Telecommunications and E-Commerce. Jan 12th, 2007. Telecommunications Regulatory Reform in Bermuda: Consultation document on proposed changes and the potential impact for telecommunications users in Bermuda.

limitations for various sectors of the telecommunications industry on some of the Caribbean islands.

Table **4-6**: Competitive Status of Various Telecommunications Sectors.[102]

Competitive Status of Various Telecommunications Sectors								
Country	Local Services	Domestic fixed long dist	Inter-national fixed long dist	Wireless local loop	Data	Leased Lines	Fixed Wireless Broadband	Mobile
Antigua/ Barbuda	M	-	M	-	-	C	C	C
Bahamas	P	P	P	-	P	P	-	M
Barbados	P (2004)	P (2004)	P (2004)	P (2004)	P	C	P (2004)	P (2001)
Dominica	M	M	M	-	M	M	-	M
Grenada	P	M	-	-	C (2003)	M	-	C
Guyana	M	M	M	-	D	M	-	C
Jamaica		C (2001)	C (2003)	-	C (2001)	-	C (2001)	-
St. Kitts/ Nevis	-	-	-	-	-	-	-	-
St. Lucia	-	-	-	C	-	-	C	C
St. Vincent/ the Grenadines	C (2001)	C (2001)	C (2001)	C (2001)	C (2001)	C (2001)	C (2001)	C (2001)
Trinidad &Tobago	M	-	P	M	C	P	P	M
M- Monopoly; P- Partial competition; C- Full competition; -- Not available								

[102] Source- ITU World Telecommunication Regulatory Database

Table **4-7**: The Current Telecommunications Market Structure.[103]

The Current Market Structure			
	Current Market Access	Pro Comp Legislation	Current Players
Antigua/ Barbuda	competition permitted in mobile and Internet access		APUA PCS, C&W, and Cingular, Kelcom Intl.
Bahamas	duopoly in fixed voice; monopoly in mobile and cable TV; some ISPs and others	Telecom Act, 1999; PUC Act 1993 (Amended 2000)	BTC, Cable Bahamas, Indigo
Barbados	fully liberalised since Feb. 2005	Telecom Act, 2002	C&W, Digicel, TeleBarbados, Antilles Crossing, Kelcom Intl.
Dominica	fully liberalised since Mar. 2003	Telecom Act, 2000	C&W, Digicel, Orange Caribe, SAT Telecoms, Marpin
Grenada	fully liberalised since Mar. 2003	Telecom Act, 2001	C&W, Global Network Providers Trans-World Telecoms Caribbean, Digicel
Guyana	only domestic mobile services and ISP are liberalised	none; Telecom Act, 1990 still valid	GT&T, Cel*Star, CTL
Haiti		none; outdated law of 1977	Teleco, Haitel, Comcel, Digicel, Rectel
Jamaica	fully liberalised since 1 March 2003	Telecom Act, 2000	C&W, Digicel, Oceanic Digital, FibraLink, InfoComm, N5
St. Kitts/ Nevis	fully liberalised since Mar. 2003	Telecom Act, 2000	C&W, Digicel, Caribbean Cable, St.Kitts Cable, Cariglobe
St. Lucia	fully liberalised since Mar. 2004	Telecom Act, 2000	C&W, Digicel, Antilles Crossing
St. Vincent/ the Grenadines	fully liberalised since Mar. 2005	Telecom Act, 2001	C&W, Digicel, Kelcom Intl.
Trinidad &Tobago	fully liberalised since June 2004	Telecom Act, 2001 Telecom(Amendment) Act, 2004	TSTT, Digicel, Laqtel, Lisa, CCTT

[103] Stern, P. A. (June 2006). Assessment of the Telecommunication Services Sector in CARICOM: Convergence Issues at the Regional and International Level. Draft Report prepared under IDB/MIF (TC No. ATN/MT-8694-RG).

Table **4-8**: Sector Structure- Private Participation.[104]

	What is the maximum foreign participation/ investment (in %) for:								
Country	facilities-based operators	spectrum-based competitiors	local service operators	long distance service operators	International service operators	value added service providers	Internet Service Providers (ISPs)	Mobile	other categories
Antigua/ Barbuda	100	100	100	100	100	100	100	100	
Bahamas	Not specified. Telecom Act is WTO compatible								
Barbados	75	75	75	75	75	75	75	75	
Dominica									
Grenada									
Guyana									
Jamaica	100	100	100	100	100	100	100	100	
St. Lucia	100	100	100	100	100	100	100	100	
St. Vincent/ the Grenadines	There are no restrictions on the maximum ownership permitted for telecoms								
Trinidad &Tobago	No limit according to Foreign investment Act								

[104] Id.

Wireless

While other sectors of telecommunications continue to be under monopoly control, despite legislation that makes them fully competitive, the wireless sector is one area that has flourished with the opening of telecommunications markets. The growth of the wireless sector is due in large part to the entry of Digicel, an Irish-based wireless service provider that began serving the region in 2001 and now operates in 23 markets in Central and South America and the Caribbean. This company touts itself as the "monopoly breaker" and "customer champion" and since arriving in the Caribbean the company has employed an aggressive strategy that has been successful in driving up the number of wireless subscribers in the Caribbean.[105] The countries currently being served by Digicel are shown in Figure 4-4.

Table 4-9 and 4-10 shows the rapid increase in wireless subscribership. In the period 1995-2000 and from 2002-2007 all the islands in the Caribbean show double digit annual percentage increases in wireless subscribership. As shown in table 4-11, on some islands the cellular uptake is greater than the population with in excess of 100 mobile cellular subscribers per 100 inhabitants. This can be taken to mean that there are people

[105] Operations in 23 markets include Anguilla, Antigua & Barbuda, Aruba, Barbados, Bermuda, Bonaire, The Cayman Islands, Curacao, Dominica, El Salvador, French Guiana, Grenada, Guadeloupe, Guyana, Haiti, Jamaica, Martinique, St. Kitts & Nevis, St. Lucia, St. Vincent and the Grenadines, Suriname, Turks and Caicos and Trinidad & Tobago. We also provide coverage in St Martin and St Barths.

who have more than one wireless cellular device. These numbers when compared with that of main line subscribers show that wireless service is more pervasive than main line and also points to the fact that many are turning to wireless service for their communications needs. Figures 4-5 to 4-7 give graphic representations of the growth trend in wireless and the effect if it has had on some of the islands. Table 4-8 shows the wireless penetration rates for the countries of the Caribbean in 2005. The numbers for wireless penetration have increased greatly since then, with countries reporting greater wireless penetration than wire line. One example of this is found in Jamaica which reports having "penetration of mobile phone currently surpasses 100% as many Jamaicans choose to have handsets from more than one provider in order to avoid interconnecting charges when calling from one provider's network to another."[106] Penetration rates greater than 100 per 100 inhabitants do not only exist in Jamaica, but also exist in many other parts of the Caribbean.[107]

[106] See pg 22 'United Nations Economic Commission for Latin America and the Caribbean. Jamaica's Information Society Country Profile.'
[107] See Table 4-8b

Figure **4-4**: Map of Countries in which Digicel operates.[108]

[108] Map courtesy of http://www.digicelgroup.com/group/our_locations.php

Table **4-9**: Mobile Cellular Subscribers from 1995-2000 & 2002-2007.[109]

Mobile Cellular Subscribers							
	(000s)		CAGR (%)		(000s)		CAGR (%)
	1995	2000	1995-2000		2002	2007	2002-2007
Antigua/ Barbuda	-	22.0	-		38.2	110.2	30.3
Aruba	1.7	15.0	54.2		61.8	105.7	14.3
Bahamas	4.1	31.5	50.4		121.8	374.0	25.2
Barbados	4.6	28.5	43.9		97.2	237.1	25.0
Bermuda	6.3	13.0	15.5		30.0	60.1	19.0
Cayman Islands	2.5	10.7	33.4		17.0	33.8	41.0
Grenada	0.4	4.3	60.8		7.6	46.2	57.3
Guyana	1.2	39.8	100.1		79.4	281.4	52.5
Haiti	-	55.0	-		140.0	2200.0	73.5
Jamaica	45.1	367.0	52.1		1245.0	2495.2	19.0
Neth. Antilles	11.7	30.0	26.5		30.0	200.0	158.2
St. Kitts/ Nevis	-	1.2	-		5.0	10.0	41.4
St. Lucia	1.0	2.5	20.1		14.3	105.7	94.7
St. Vincent/ the Grenadines	0.2	2.4	61.5		10.0	104.0	59.8
Trinidad &Tobago	6.4	161.9	91.1		262.8	1007.7	30.8
Virgin Islands (US)	-	35.0	-		45.2	80.3	21.2

[109] ITU World Telecommunication Regulatory Database

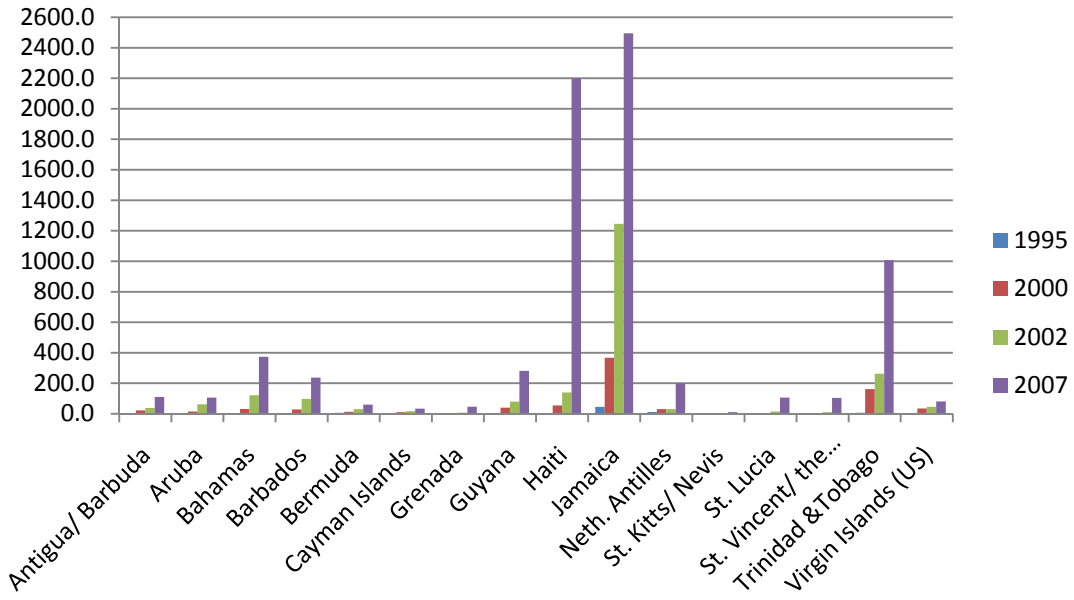


Figure **4-5**: Bar Chart showing Mobile Cellular Subscribers from 1995-2000 & 2002-2007.[110]

[110] ITU World Telecommunication Regulatory Database

Table **4-10**: Mobile Cellular Subscribers per 100 inhabitants and as % of total telephone subscribers, 2000-2007.[111]

Mobile Cellular Subscribers per 100					
	Mobile Subscribers per 100 inhabitants			As % of total telephone subscribers	
	2000	2007		2000	2007
Antigua/ Barbuda	28.76	133.55		38.5	74.6
Aruba	16.29	104.93		28.2	73.2
Bahamas	10.46	112.90		21.6	73.8
Barbados	10.64	87.76		18.7	60.5
Bermuda	20.68	93.32		18.8	51.0
Cayman Islands	26.95	76.64		23.4	-
Grenada	4.23	44.59		12.1	62.5
Guyana	5.36	37.45		36.8	71.9
Haiti	0.68	22.92		43.1	88.9
Jamaica	14.13	93.74		42.6	87.9
Neth. Antilles	13.97	90.09		27.5	-
St. Kitts/ Nevis	2.97	23.70		5.2	28.6
St. Lucia	1.62	65.72		4.9	-
St. Vincent/ the Grenadines	2.08	86.34		8.7	82.0
Trinidad &Tobago	12.50	75.58		33.8	75.7
Virgin Islands (US)	32.22	71.70		33.9	52.8

[111] ITU World Telecommunication Regulatory Database

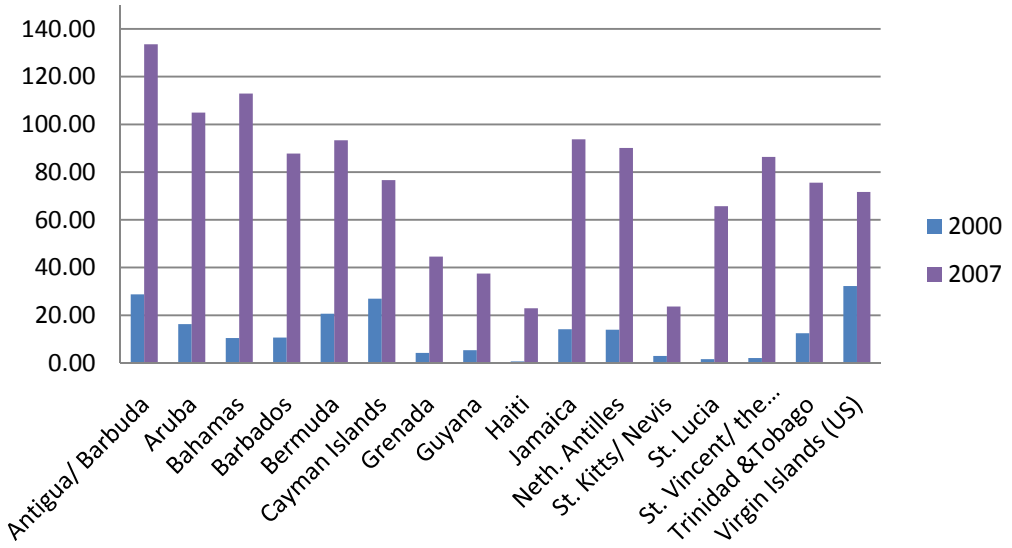


Figure **4-6**: Mobile Cellular Subscribers per 100.

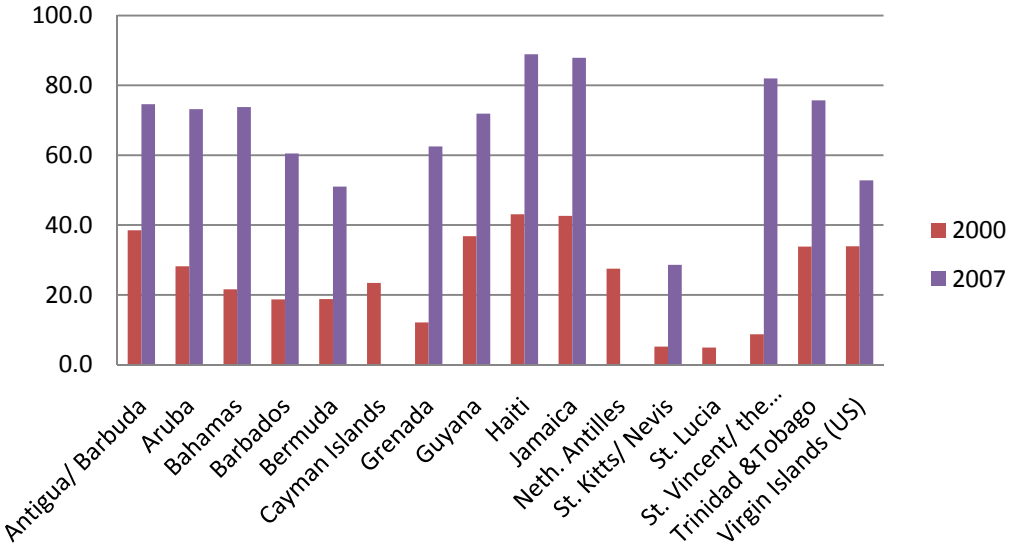
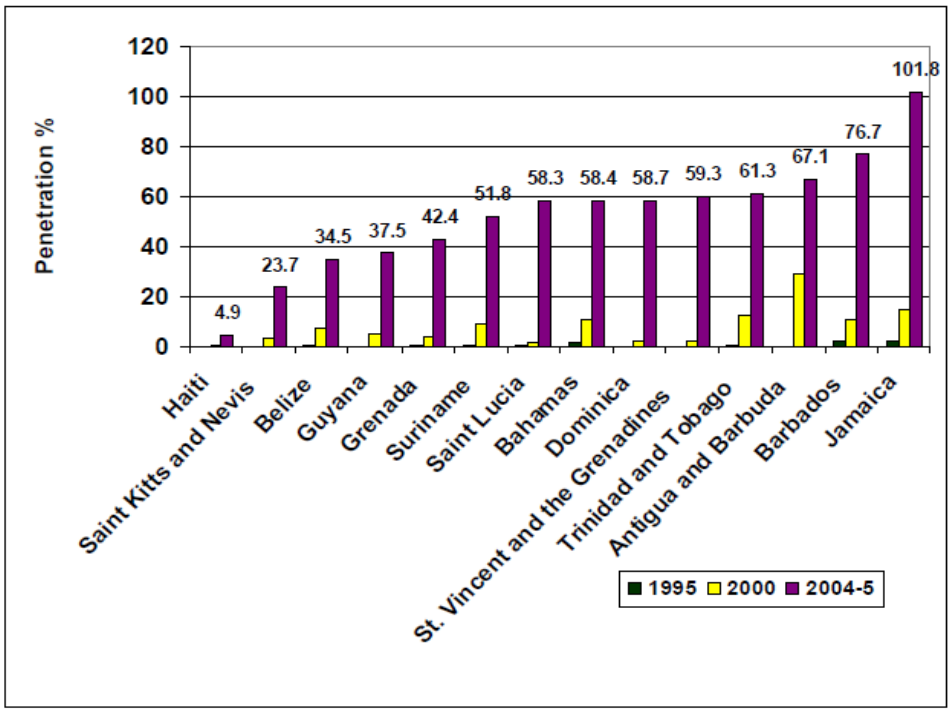


Figure **4-7**: Mobile Cellular Subscribers as % of total telephone subscribers.



Source ITU WTI 2006

Figure **4-8**: Mobile Phone Penetration in the Caribbean

Chapter 5

Analysis

Comparing Documents

As discussed in the previous chapter, many of the countries in the Caribbean began the process of adopting new telecommunications legislation and further steps to bring their telecommunications segments in line with the rest of the world. These changes came out of the realization that telecommunications is an important and integral part of any society and that adequate telecommunications infrastructure, services and regulation are a requirement for bringing countries of the Caribbean into an increasingly competitive global marketplace.

Although the changes taking place in the Caribbean have had noticeable effects in all aspects of telecommunications and other parts of industry and society, it is necessary to evaluate these changes to determine whether they meet the standards that the governments have set for themselves, as well as, to see if they meet the needs of the international bodies that many of the Caribbean are members and also to evaluate whether these documents are on par with other key pieces of telecommunications legislation, such as The United States Telecommunications Act of 1996.

Projections

The importance of telecommunications infrastructure to the islands of the Caribbean can in some ways be measured by the number of countries which now have

action plans aimed at bringing the economy from developing country to developed country status. These action plans range from just focusing on various forms of telecommunications development to those that encourage wholesale changes to all types of infrastructure including telecommunications. Particular emphasis is placed on the development of ICT from both the aspects of being an entity that should be exposed for its potential economic benefits and also the benefits that could be had from the societal exposure and developing the expertise of the citizenry. In light of the dwindling of other economic mainstays, technology based initiatives are regarded as the vessels that will help save economies. This fact is highlighted by the Government of St. Kitts and Nevis in stating "St. Kitts and Nevis was for many years dependent on the Sugar Industry. This industry has now come to an end and St. Kitts and Nevis is actively seeking to diversify. One of the main areas that we have been looking to develop, are information-based industries including data entry, data manipulation, data conversion, information processing, and information management."[112] Faced with similar realities other countries have adopted similar outlooks aimed at growing technology intensive industries.[113]

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[112] See pg 15 of the "Government of St. Kitts and Nevis (Nov., 2006). National Information and Communications Technology (ICT) Strategic Plan."

[113] Evidence can be seen in the following examples: National Strategic Plan of Barbados 2005-2025, Information and Communication Technology: A Strategy and Action Plan for Grenada 2001- 2005, and other documents from Grenada which call for a creating an information society by 2010 and also in Trinidad & Tobago's Vision 2020 plan.

These proposed visions for the shape of society and economy on the island all tend to emphasize similar goals. These documents stress the development of information infrastructure, attracting foreign investment, becoming more relevant globally and creating more transparent and efficient government through the incorporation of technology in government operations, among other stipulations. While not expressly stating numbers for the goals that they are aiming to achieve, Caribbean administrations have set objectives that are designed to progress the region into the stratus of developed nations.

The WTO

With many of the Caribbean countries enacting new telecommunications policy within a short period of time, there is undoubtedly the diffusion of policy innovation as discussed by Rogers and others. Although the ways by which these islands went about introducing legislation, competition and regulation showed differences there is evidence that these actions are the result of forces external to those on the islands.

In discussions leading up to the introduction of new policy, many countries made reference to the WTO Basic Telecommunications Agreement and expressed the desire to meet the stipulations outlined in this document. One such case is the island of Antigua

which makes specific reference to meeting WTO standards in its ICT draft policy.[114] As with many of the Caribbean countries, Antigua & Barbuda has committed to the WTO Basic Telecommunications Agreement and is one of the countries that agreed to the formation of ECTEL. The WTO stipulations and standards that Antigua & Barbuda have outlined are also shared by other countries that are regulated by ECTEL since ECTEL documents make specific reference to the WTO and wanting to meet the commitments called for by the organization.

In fact, the WTO has been a great shaper of telecommunications in the Caribbean. Beginning in 1997 when six (6) CARICOM member states made BTA commitments there was the conscious effort on their parts to increase competition in the sectors of telecommunications that were uninhibited by exclusivity contracts. As such competition in wireless, internet and other value added and other non basic telecommunications services was introduced. Full competition was to take place at the end of the exclusivity contracts with C&W had expired. Other Caribbean islands had taken part in the WTO negotiations but had not committed to the BTA. The BTA however and the commitment to it and membership in the WTO provided Caribbean

[114] Reference to the WTO is made on pg 17 of the Antigua & Barbuda Information and Communication Technologies (ICTs) Draft Policy. This document uses the WTO paper on telecommunications as a guideline for ICT policy, as well as, uses the interconnection arrangements outline by the WTO as the objective.

governments with the support and momentum needed to negotiate with the incumbent service provider.

Through the mandates of the WTO, with regard to the virtues of liberalizing and privatizing telecommunications, creating independent regulatory bodies, and the introducing competition to the sector, governments have been able to receive revenue from the issuance of operating licenses. The societal benefits besides those of increased competition in telecommunications sectors can be seen in increased teledensity, newer services, improved infrastructure and the introduction of programs that are aimed toward educating the public in using ICT. The period 1997 to the present has seen many more countries committing to the BTA and has resulted in fully liberalized telecommunications in the region.

Competition

The introduction of competition in telecommunications in the Caribbean islands has met with some success. However, the introduction of competition has affected some segments of the industry more than others. As outlined in table 4-5, and from reviewing the legal documents dealing with the introduction of telecommunications competition on the islands, while governments have fully liberalized telecommunications by making all sectors open to competition, the reality is that very few sectors of telecommunications show any real signs of being truly competitive.

Analysis of the data point to the fact that the sectors that are most competitive are in areas of telecommunications that were not fully developed, or sectors which had room for tremendous growth. This is the case of the wireless sector in the majority of the Caribbean islands. Before the moves to introduce competition, wireless was provided by

the incumbent monopoly provider of wireline service. These services tended to be costly and slow to provide new products to the customer base.

The arrival of competition in the wireless sector and the maintenance of the status quo of monopoly in the majority of the other sectors has in some ways created a situation similar to that in the United States when competition was allowed in the local loop while the Baby Bells got access to the long distance markets as well as being able to provide other services, like wireless. In both cases, the U.S. and the Caribbean, competition in the local loop has not materialized.

Perhaps the reason for the lack of competition in the provision of local service comes from the fact that while new regulations on the islands deal with the issue of interconnection of networks, they do not address the issue of barriers to entry into the local loop. The reduction of the barriers to entry to becoming a local service provider could potentially result in more competition in the local segment of telecommunications. From reviewing the legal documents collected it was found that in the case of Jamaica there was some attempt to reduce the barrier to entry by allowing competitive entrants to co-locate with the incumbent service provider. However, these changes were proposed in 2007 as Jamaica began the process of reviewing the current telecommunications landscape on the island.

The need to address the problem of co-location is made evident by the following statement:

> "With the introduction of competition in the local telecommunications and communications sectors, there has been a proliferation of cell towers across the island. Operators are currently not sharing premises and other essential facilities to take advantage of unbundling. In addition, there are issues with multiple operators who engage in excavating the public roadways to lay equipment and cable. Specifically, there is lack of coordination between operators resulting in increased costs, traffic congestion and undue disturbance to the public. Therefore, there is an

> urgent need to implement a new co-location policy to resolve these issues."[115]

Jamaica has also begun to address other steps to try to make it easier for new entrants to compete with the incumbent provider. With addressing local loop unbundling the government hopes that removing the need to replicate the network will attract new local service providers. These efforts could be regarded as coming too late, since Jamaica like many other islands has begun to exhibit declining landline penetration and increased wireless uptake. These facts make the local service sector less attractive to competitive entrants and all but ensure monopoly service will continue in the local loop.

Wireless

While the wireline sector of telecommunications struggles to be fully competitive the wireless sector faces no such problem. In many of the islands, prior to the arrival of Digicel, wireless services were provided by the incumbent telephone service provider which was slow to bring new products to market. While the number of subscribers grew in the period from 1995- 2000, as is seen in the number in Table 4-8a, the wireless sector was the one with greater potential for growth. This potential was realized with the

[115] The Ministry of Industry, Technology, Energy and Commerce (MITEC) has addressed the issues of co-location and local loop unbundling in a draft Telecommunications Policy put forward in May 2007.

entrance of Digicel in 2001. The arrival of this service provider led to exponential uptake of wireless service by consumers on the island (as seen in Table 4-8b) and their presence in the marketplace forced the incumbents to roll out new products and cut prices to prevent customers from going with the new entrant.

The arrival of Digicel in the region has put it squarely in competition with Cable and Wireless, which operates in some form in the majority of former British colonies. In 2003 Cable and Wireless and its affiliates re-branded their wireless service, calling it bmobile.[116] This re-branding and the associated marketing push are designed to compete with the upstart Digicel.[117] The presence of these service providers has created a duopoly market on many of the Caribbean islands, but the aggressive tactics of Digicel and the lethargic response by the incumbent has seen Digicel overtake the number of subscribers held by previous service provider and become the leading wireless service provider.[118,119,120]

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[116] The company operates and works in several Caribbean markets including: Anguilla, Antigua and Barbuda, Barbados, British Virgin Islands, Cayman Islands, Dominica, Grenada, Jamaica, Montserrat, Saint Kitts and Nevis, Saint Lucia, St Vincent and the Grenadines, Trinidad and Tobago and the Turks and Caicos Islands.

[117] Bmobile has been endorsed by several regional and international sport and entertainment figures including Beenie Man, Brian Lara and Rihanna.

[118] This rapid growth of Digicel in Jamaica is outlined in the following link http://www.digiceljamaica.com/about/

[119] http://www.digicelgroup.com/group/key_milestones.php

[120] The ITU notes that for the period 1996 to 2006 the developing world saw a compound annual growth rate of 53 per cent in mobile subscribers while the least developed countries (LDC) saw an

The high sunk cost that is part of the reason for the lack of competition in the wireline segment of the industry coupled with the presence of a long established monopoly provider has pushed competitive entrants to other sectors of telecommunications such as wireless. However, the greatest force pulling competitive entrants toward the wireless sector is the previously undeveloped services and the failure to exploit the market potential for wireless services. While the margins for expansion in smaller islands is not as great as in the larger islands, there is still room for rolling out wireless networks and providing service, since as much as ninety percent of the population remained unserved in 2000. This was the case in Trinidad and Tobago a country with a population of over 1 million people of which approximately 162,000 people were wireless subscribers in 2000. Similar trends also exist in many of the other Caribbean islands.

With vast numbers of island populations remaining untapped at the time of entry it stands to reason that the region would be highly attractive to new entrants to the wireless sector. The aggressive nature with which Digicel came into the region and the cost at which they provided service drew huge masses of subscribers, thus ensuring that the revenue lost in providing service at a lower price point than the incumbent was recouped by having a consumer based that exceeded the incumbents.

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amazing 90 per cent rate. Taken from Eastern Caribbean Telecommunications Authority. Annual Telecommunication Sector Review. Period ended March 2007.

The statistics for wireless services as observed in Table 4-8b, show that in the period 2002- 2007 the islands of the Caribbean have experienced double digit compound annual growth rates (CAGR) in wireless subscribers. However, in some cases the penetration rates for wireless services exceeds 100 percent, which points to the fact that some people carry multiple wireless devices and also brings up one of the key issues shaping the wireless industry in the Caribbean. The issue of call termination is one that is underlying in the development of wireless services. The termination rates for calls from one network to another are found to be so exorbitant that wireless customers have resorted to having devices from both service providers and only using the phones for people with whom they share networks.

The termination fees become even more important when looking more closely at the subscriber base. Both bmobile and Digicel have been pricing devices below cost and using this tactic to attract customers who otherwise would not be able to afford wireless services. These customers, for whom wireless devices are needed but which are also looked upon as a luxury and added expense, tend to choose wireless programs which require that call minutes be ‘topped up’ and when these minutes are finished the devices can be refilled at the users discretion and budget. As such, to customers for whom ever dollar matters, the ability to save money on interconnection fees, while having the ability to pay only for the minutes they want leads them to signing up with multiple service providers. The disparity between subscribers who pay for services upfront (Prepaid) versus those that receive a monthly bill is shown below for ECTEL countries. The situation is similar in the majority of the Caribbean islands since the two main service providers that operate in the ECTEL countries also operate in the other English speaking islands of the Caribbean.

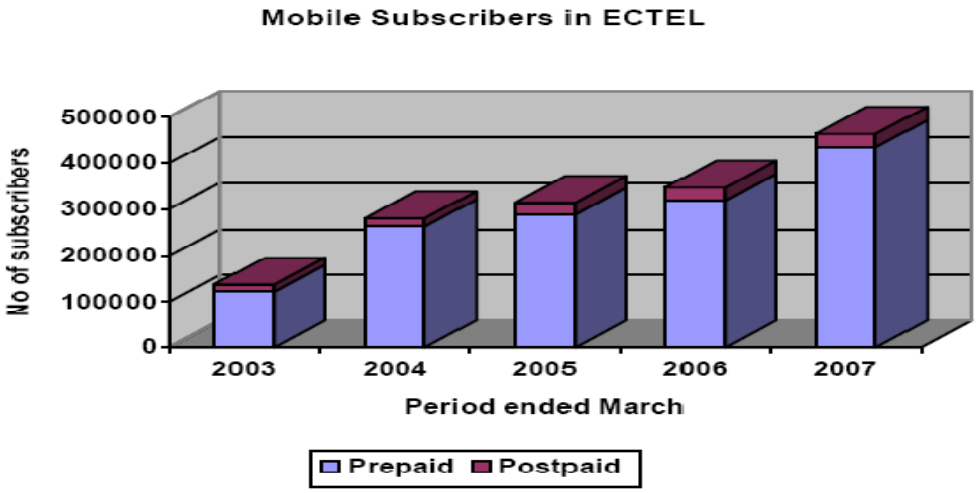

Figure **5-1**: Prepaid vs. Postpaid[121]

Universal Service

The desire to provide Universal Service to residents is one that is commonly held by Caribbean governments and is one that is stated in the strategic plans outlined by these countries. However, the emphasis does not lie on the provision of telephone service but lies in internet access. These documents stress the need for access in institutes of education at every level, libraries and other public places dedicated to community gathering. Some governments have gone beyond access to the provision of services (e.g.

[121] Taken from Eastern Caribbean Telecommunications Authority. Annual Telecommunication Sector Review. Period ended March 2007.

email) as part of their universal service plans, however success in achieving this is tempered by the low penetration of computers in the households of the Caribbean islands.

While governments emphasize internet access for its ability to drive economies, basic telephone service suffers from diminishing penetration rates as more people turn to the convenience of wireless services for their communication needs. That fact could be problematic for universal service since many countries fund their universal service programs by agreeing to terms with the incumbent wireline service providers. Universal service funding programs on some islands has also been burdened by the being tapped for the creation of learning centers, where citizens can go to receive training in information technology.

The ever increasing revenue that has become synonymous with wireless and the exponential growth that continues in this sector is an area that should be considered when thinking about solutions to both universal service funding and ensuring that each citizen has the ability to be connected socially and economically.

Chapter 6

Conclusion

In analyzing the changes that have taken place in the Caribbean with regard to the telecommunications industry it is clear that there has been a significant reshaping of the telecommunications landscape in the region from the aspects of policy, ownership, universal service and competition. The consequences of the changes have been immediate, but there are some aspects of the telecommunications sector that are still developing.

Toward understanding the changes that have occurred in the telecommunications markets of the Caribbean and the subsequent consequences, it is best to restate the secondary research questions that provide answers to the main research question driving this investigation:

To what extent, if any, have changes in telecommunications policies in selected Caribbean countries since 1990 achieved goals with respect to universal service and increased competition?

i. *Have changes occurred in telecommunications policies in selected Caribbean countries since 1990? What are they? What were the most important factors driving these changes?*

Since the early 1990's the majority of the Caribbean islands have enacted telecommunications policies aimed at having positive societal impacts. The introduction of competition is an outcome of the new policies that have had the effect of ensuring that services are available to a large majority of the population at lower rates. The introduction of competition has also had the effect of making it possible for Caribbean

residents to be more exposed to newer technologies and greater innovation in services from competing companies.

Key to the introduction of competition is the realization that the competitive entrants were not going to come from local companies, but that these entrants were more than likely going to come from foreign multi-national companies, and as such there needed to be a reviewing and loosening of foreign ownership rules on some of the islands. The relaxation of these rules would ensure the legal entrance of foreign companies to the markets in the Caribbean.

Other changes have seen the rethinking of the way in which government regarded universal service. While there still needs to be work done on making sure that each resident of the islands has adequate access to telecommunications services either through having a phone in their household, a phone at a community building or a payphone, many Caribbean governments took the forward step of incorporating access to internet and information technology in their rethink of universal service.

Perhaps the greatest change coming out of the telecommunications liberalization movement that has swept the Caribbean has been the willingness of governments to give up their involvement in telecommunications, thinking that the benefits to society that would come from such a move will far outweigh their continued presence in the industry. While some Caribbean governments still have some business interest in telecommunications service providers on the islands, they are usually in the form of partnerships with foreign companies.

Although telecommunications change in the Caribbean has had a multitude of effects, the underlying cause for all these outcomes was the need for telecommunications liberalization and the attracting of foreign investment as outlined by the WTO. The WTO and the guidelines that it outlined in its Basic Telecommunications Agreement have had a

great effect on the shape of telecommunications in the Caribbean, since it not only outlined aspects that every country should aim for in terms of the services that the people should have access to, but it also outlined to governments the regulatory and ownership framework under which foreign entrants would be attracted to the islands of the Caribbean.

ii. *To what extent, if any, have changes in telecommunications policies in selected Caribbean countries since 1990 achieved goals with respect to universal service and increased competition?*

The wave of telecommunications liberalization that has affected the Caribbean had the explicit intent to make telecommunications in the region more competitive. The current landscape of telecommunications provides evidence of the fact that in as far as making telecommunications more competitive and in attracting foreign investment in the sector Caribbean governments have been successful. However, there are imbalances in the industry in the level of competition in some segments. These imbalances are seen in the wireless industry that has been able to attract foreign investment and maintain the level of interest and involvement of the foreign entity. The result of this competition is the vast growth of wireless subscribers, decreasing wireless rates, offers to attract customers and the introduction of newer, more innovative wireless services.

The wireline segment of telecommunications continues to be monopoly controlled with Cable and Wireless having a significant presence in many of the islands. Perhaps the lack of competition in this segment reflects the high sunk cost needed to compete in this segment, the control of the monopolist and the diminishing returns of the wireline segment. The lack of competition in this segment lends support to the argument

that in countries the size of the Caribbean islands, telecommunications services in the wireline sector is best left to one service provider.

The goals of universal service are difficult to measure in the region. Many countries have stated their desire to achieve different aspects of telecommunications services from providing access to pay telephones to providing internet access and email addresses. As it currently stands, many countries, perhaps due to the growth of wireless services, have re-shifted their focus on universal service to internet services. This change could be explained by the desire to beat their neighbors in attracting foreign investors and the development of industry, and can also be explained by the fact that the rest of the world is already taking advantage of the conveniences of the internet and the economic power it possesses. As such, the shifting goals of universal service make it difficult to measure the real change in telephone and internet uptake.

iii. Have these changes affected the overall telecommunications industry sector, nationally and regionally? If so, how do they relate to other external factors? i.e. if there have been changes, how much is explained by policies, how much by other factors?

The overall effects on the telecommunications industry based on the trend of liberalization have been noticed both on a national and regional basis. Reviewing the national landscapes, it can be seen that the advancement of competition has not taken place in the provision of local telephone services. These services remain the domain of monopoly service providers, associated solely with Cable and Wireless or in conjunction with the government. The wireless sectors in most islands, while developing rapidly in subscribership and services, has been transformed into a duopoly market, with Digicel as

the new entrant, competing with a repackaged version of the wireless service provider that existed before competition was introduced.

The national landscape has changed in many islands because of the separation of the state from telecommunications and the creation of regulatory bodies that oversee activities in the industry. The creation of regulatory bodies and the stability and transparency that they provide gives a sense of confidence that would-be investors look for when thinking about entering a market. The presence of regulators and the policy changes that are a part of the liberalization process has made it possible for companies like Digicel to come into local markets and be competitive with incumbent providers.

On a regional basis, the changes have also been noticeable with the creation of regulators that have the responsibility for guiding the legislation and decision making on a group of islands. There has also been a conscious effort by the governments to take advantage of the knowledge gained from their neighbors, as well as, to take advantage of the power of the Caribbean as a unit through the collaboration of the governments to recognize the potential that telecommunications has in being able to develop all aspects of society. In recent times there have been several meetings and conferences with the ministers from respective countries discussing the benefits that could be had in the telecommunications sector, especially the introduction of competition and the selling of licenses, are handled in a manner that is advantageous to the people and governments of the respective islands.

iv. *Were there goals for these policy changes with respect to universal service and competition? If so, have they been met? If they have been met, what were the most important factors in their achievement? If they have not been met, what factors led to their failure?*

The passage of new telecommunications policies within the Caribbean islands was geared toward the creation of competition in all segments of the industry and many countries adopted universal service policies as a means of ensuring that all their citizens were connected to a network, and as such able to participate socially. However, outside of goals set out by individual nations that in one instance desired to create email addresses for all citizens, governments in the Caribbean have resisted the urge to quantify levels of growth and change.

The goals for universal service are shifting away from the telephone toward internet and computer based technologies, with the aims of providing communities and institutes of education with points of access. These aspirations also remain without quantification, and while this lessens the possibility of disappointment, it also makes it impossible to measure growth and reduces accountability for promises made.

Caribbean governments have been successful in making the sectors of telecommunications more competitive, as evidenced by the arrival of Digicel, but for now competition is limited to the wireless sector, which was underdeveloped and had room for growth. The wireline segment of telecommunications remains monopoly controlled on the majority of islands possibly due to the failure to regional governmental failure to fully understand the investment needed to compete in that sector.

The legislation which led to the creation of an environment for competition needs to be reevaluated in order to see if the current landscape is the best situation for the islands, in terms of duopoly markets in wireless and monopoly markets in wireline, or if new legislation needs to be passed to attract further competitive entrants.

v. What lessons/recommendations for these Caribbean countries and other similarly situated countries can be learned from this experience? Are these

lessons/recommendations consistent with other research in the field, or do they provide new information?

With the development in policy, regulatory bodies, competition, universal service and infrastructure that has taken place in the Caribbean there is the possibility of the region being a valuable case study for developing countries trying to achieve the same advances in telecommunications through introducing a regulatory body, competition and foreign investment.

The islands of the Caribbean present a clear case study as to how governments, when faced with a monopoly service provider, can overcome the challenges they face and still achieve telecommunications liberalization and use the resources of the telecommunications infrastructure, the regulatory framework and the potential for growth as a way to attract foreign investment. The use of these telecommunications resources for furthering investment is also important since it comes at a time when governments are faced with the threat of rising unemployment and need to refocus their economic direction.

Also noteworthy is that the Caribbean islands present the first case of countries pooling their resources to create a regulatory body that oversees the direction of the industry for all the islands. This occurrence is one that countries in a similar situation could employ as they attempt to present to investors a transparent regulatory framework and also use telecommunications to develop industry.

Research Implications

This investigation provides an analysis and critique of the selected Caribbean nations and the methods used by governments in that region with regard to aspects of telecommunications specifically universal service and competition. It is hoped that countries faced with circumstances similar to those of the Caribbean islands can use this research to guide their decision making regarding telecommunications goals and services for their citizens.

The development of telecommunications in the Caribbean is a process that is still evolving, and will continue to do so as governments try to achieve the goals they have set forward in the national plans they have outlined. These goals will continue to build on the foundation that has been laid with the passing of new telecommunications policy and accession to the WTO and its rules and stipulations for helping develop standards of acceptable telecommunications for citizens of the world, especially those in developing countries.

In recent times some Caribbean countries have begun the process of revisiting their telecommunications laws in order to make sure that they achieve competitive balance in all segments of the industry, especially wireline service. It will also be interesting to see how the shape of telecommunications will be affected when the wireless industry reaches its maturity. Given these happenings, the continued growth of industries such as banking, telecommunications and call centers, and the goals that have been put forward for bringing the respective islands into the developed world the Caribbean will for a long time present new questions for investigation. Some of these questions may be concerned with the future of the wireless industry in the Caribbean, will it continue to be a duopoly market or will consolidation or more competition occur in that

sector. Other questions will surround the ability to achieve competition in the local service segment. There will also be questions about the achievement of universal service and the success of recent plans put in place to advance the islands of the Caribbean.

As it currently stands the islands of the Caribbean are faced with the prospect of seeing the continued growth of telecommunications, especially on islands where the uptake of wireless service has not happened at a rapid rate like it has on some of the larger islands. There however needs to be work done in the negotiating of interconnection fees between carriers so that consumers are not forced to carry multiple handsets to achieve some cost saving. In terms of competition in the wireline sector, while various countries seek to make this segment more competitive the reality is that the long established service of the incumbent service provider, plus the costs associated with competing in this sector make it a service that is best left to one provider.

The changes enacted in the past ten years have been beneficial to the region as a whole, in that Caribbean residents are now the recipients of improved telecommunications technologies and with it the prospect of new opportunities for employment as the focus has now shifted to creating information economies. The increased telecommunications infrastructure and individual governments' desire to attract foreign companies to their shores have increased the educational opportunities for those on the islands. There are a plethora of online courses at the secondary and tertiary educational levels that residents can avail themselves of at discounted rates.

Given the room for growth in the various sectors of telecommunications, the decreasing cost of providing service that is usually associated with technology industries and the increasing educational achievements of the population the Caribbean region is one that should see continued growth in investments both directly because of telecommunications (e.g. banking, tourism, call center locations etc.), as well as indirect

benefits that come with having a more educated work force and the potential for growth in industries outside of those associated with strictly associated with technology. The ability of telecommunications to create better opportunities in the region will not only have the effect of improving chances for employment in the home country or within the region but will also have the effect of reducing the need for qualified residents to go abroad in search of gainful employment.

Appendix A

Telecommunications Laws and Regulation in the Caribbean

Laws and Regulations by region							
Americas							
Antigua & Barbuda							
Year	Law/Regulation		Description				
	Website (HTTP:)						
1951	CAP 423; Telecommunications Act		There are new legislations before the Attorney General's Office for consideration with a view towards drafting into law.				
Bahamas							
Year	Law/Regulation		Description				
	Website (HTTP:)						
	Online legislation						
	http://www.lexbahamas.com						
	Telecomm. Sector Policy						
			Outlines the Government Policy with respect to Telecommunications.				
1966	Bahamas		Created the Bahamas Telecommunications Corporation.				
	http://www.lexbahamas.com						
1975	Broadcasting Act		Regulates broadcasting in The Bahamas				

	http://www.lexbahamas.com	
1993	Public Utilities Commission Act http://www.lexbahamas.com	Outlines the functions of the Commission with respect to the regulated sectors.
1999	Public Utilities Commission Act (Amendment) http://www.lexbahamas.com	An amendment to the original Act, 1999.
1999	Telecommunications Act http://www.lexbahamas.com	Provides a regulatory framework for telecommunications
2001	Telecommunications Sector PolicyAmendment -2002 http://www.lexbahamas.com	Outlines the Government's policy with respect to Telecommunications
Barbados		
Year	Law/Regulation	Description
	Website (HTTP:)	
	Telecommunications Act CAP. 282B	
	Utilities Regulation Act CAP. 282	
	Fair Trading Commission Act CAP. 326B	
1975	The Post Office Act	Amends and consolidates the law relating to the Post Office.

1978	Public Utilities Act	Provides for the regulation of Public Utilities.
1991	Telecommunications Act (now repealed)	Revises and consolidates the law pertaining to Telecommunications and related matters.
2000	Utilities Regulation Act CAP. 282 http://www.commerce.gov.bb/Legislation/Documents/Utilities%20Regulation%20Act,%20Cap282.pdf	
2000	Fair Trading Commission Act CAP. 326B http://www.commerce.gov.bb/Legislation/Documents/Fair%20Trading%20Commission%20Act,%20Cap%20326B.pdf	
2001	Telecommunications Act CAP. 282B http://www.barbadosbusiness.gov.bb/miib/Legislation/Documents/telecommunications_act_cap282b.pdf	
2002	Fair Competition Act CAP326C	

	http://www.commerce.gov.bb/Legislation/Documents/Fair%20Competition%20Act,%20Cap%20326C.pdf	
Grenada		
Year	Law/Regulation	Description
	Website (HTTP:)	
1989	Grenada Public Telecommunications - Act 1	
2000	Telecommunications Act No. 31 of 2000 www.spiceisle.com/gntrc/legislations.htm	
Guyana		
Year	Law/Regulation	Description
	Website (HTTP:)	
	Posts and Telegraph Act	Amended in 1927. Regulates all radiocommunication.
1990	Telecommunications Act	Applies to wireline telephony and cable television.
Jamaica		
Year	Law/Regulation	Description
	Website (HTTP:)	

1949	Broadcasting and Redifusion Act	Amended in 2001.
1972	Radio and Telegraph Control Act	Amended in 2000.
1995	Office of Utilities Regulation Act http://www.our.org.jm/pdf/ouract1995.pdf	Repealed the Public Utility Commission Act & make new provisions for the supervision of utility services
2000	Telecommunications Act http://www.our.org.jm/new/pdf/telecomsact.pdf	Repealed the Telephone Act 1893
2000	Office of Utilities Regulation (Amendment) Act	An Act to amend the Office of Utilities Regulation Act
St. Lucia		
Year	Law/Regulation	Description
	Website (HTTP:)	
2000	Telecommunications Act	
2000	Treaty Establishing the Eastern Caribbean Telecommunications Authority	

2002	Telecommunications (Confidentiality in Network and Services) Regulations	
2002	Telecommunications (Interconnection) Regulations	
2002	Telecommunications (Licensing and Authorisation) Regulations	
2002	Telecommunications (Numbering) Regulations	
2002	Telecommunications (Private Network Licensing)	
2002	Telecommunications (Spectrum Management) Regulations	
2002	Telecommunications (Tariff) Regulations	
2002	Telecommunications (Terminal Equipment and Public Network)	

2004	Telecommunications (Fees) Regulations	
2004	Price Caps Implementation Agreement	
St. Vincent and the Grenadines		
Year	Law/Regulation	Description
	Website (HTTP:)	
2000	ECTEL http://www.ntrc.vc	http://www.ntrc.vc/regulations/index.htm
2001	Telecommunications Act #1 of 2001 http://www.ntrc.vc	http://www.ntrc.vc/regulations/index.htm
2002	Telecommunications (Interconnection) Regulations, 2002 http://www.ntrc.vc	
2002	Telecommunications (Confidentiality in Networks and Services) Regulations, 2002 http://www.ntrc.vc	
2002	Telecommunications (Licensing and Autorization) Regulations, 2002 http://www.ntrc.vc	

2002	Telecommunications (numbering) Regulations, 2002 http://www.ntrc.vc	
2002	Telecommunications (Private Network Licensing) Regulations, 2002 http://www.ntrc.vc	
2002	Telecommunications (Spectrum) Regulations, 2002 http://www.ntrc.vc	
2002	Telecommunications (Terminal Equipment and Public Network) Regulations, 2002 http://www.ntrc.vc	
2003	Telecommunications (Fee Structure) (Amendment) Regulations 2002 http://www.ntrc.vc	http://www.ntrc.vc/regulations/index.htm
2003	Telecommunications (Licencing Classification) (Amendment) Notice, 2002 http://www.ntrc.vc	http://www.ntrc.vc/regulations/index.htm
2004	Telecommunications (Tariff) Regulations 2004 http://www.ntrc.vc	http://www.ntrc.vc/regulations/index.htm
Trinidad & Tobago		
Year	Law/Regulation	Description

	Website (HTTP:)		
	Telecommunications Act to be enacted in 2001		
1936	Wireless Telegraphy Ordinance		To be repealed.
1966	Telephone Act		To be repealed.
1991	Act		Provides for the establishment and incorporation of the Trinidad and Tobago Telecommunications Authority and for the regulation of telecommunication services. Amendments to the Act will be enacted by the end of 1998 to implement the completed policy document.
2004	Telecommunications (Amendment) Act 2004 http://www.ttparliament.org		
2004	Telecommunications Act 2001 http://www.ttparliament.org		Parts of the Act were promulgated in 2001. Full promulgation in 2004.
Source: ITU World Telecommunication Regulatory Database			

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