Caribbean Regional Negotiating Machinery

Assessment of the Telecommunication Services Sector in CARICOM:
Convergence Issues at the Regional and International Level

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FOREWORD

This research report results from an initiative of the Caribbean Regional Negotiating Machinery (CRNM) with the support of the Inter-American Development Bank Multilateral Investment Fund (IDB-MIF) to address the problem of the weak involvement of the private sector in the regional effort to negotiate bilateral and multilateral free trade agreements and to advance the process of regional integration through the CARICOM Single Market and Economy (CSME). The private sector in the Caribbean has inadequate knowledge of trade policy issues and about their far-reaching implications in determining the ability of Caribbean firms to compete in local and international markets. In addition, most firms with the exception of a handful of multinationals, are not organized to make any effective contribution to the process. This is a problem because firstly, without informed private sector contributions, the CRNM and governments often lack the detailed sector, production and trade data that is necessary for analyzing, and choosing among different negotiating options in the various subject areas of the negotiations; secondly, without an effective voice, the private sector cannot properly influence the negotiations and cannot, therefore, articulate and promote its own interests in a process whose outcome can have far-reaching consequences for Caribbean economies in general and for business performance in particular. Hence, the importance of the private sector's active involvement in defining regional positions regarding telecommunications and information and communication technologies in the region.

The general objective of the CRNM/IDB-MIF programme (No. ATN/MT-8694-RG) is to maximize the benefits of bilateral, multilateral, and regional trade and economic agreements by integrating and mobilizing the private sector and combining its valuable human and financial resources more fully into the region's external trade and negotiation and internal integration processes. The initiative consists of strengthening: (i) the technical capabilities of the CRNM through a program of policy studies; and (ii) the negotiating capabilities of the Caribbean member states through a program of training.

The specific objective of this study report and the Green Paper which accompanies it is to support the CRNM/IDB-MIF initiative for the telecommunications and ICT sectors, considered by many as vital to the diversification of the economies in the Caribbean away from its dependence on agriculture and a few other primary sectors.

The research was undertaken and this report was prepared under the supervision of Ramesh Chaitoo, Services Trade Specialist at the CRNM, by Peter A. Stern, in collaboration with Russell Pipe and Annalee Babb.

ACRONYMS

ACP	Asia, Caribbean, and Pacific
ACS	Agencia de Control y Supervisión
ADSL	Asymmetric Digital Subscriber Line
AHCIET	Asociación Hispanoamericana de Centros de Investigación y Empresas de Telecomunicaciones
AHTIC	Association Haïtienne pour le développement des TIC
APT	Asia Pacific Telecommunity
APUA	Antigua Public Utilities Authority
ARCOS	America's Region Caribbean Optical-ring System
ATN	Atlantic Tele-Networks
ATT	American Telephone Telegraph Company
BC	Broadcasting Commission
BGC	Bahamas General Communications
BICS	Bahamas Internet Cable System
BOT	British Overseas Territories
BT	British Telecom
BTC	Bahamas Telecommunications Company Limited
BTL	Belize Telecommunications Limited
BVI	British Virgin Islands
BWA	Broadband Wireless Access
C & W	Cable & Wireless
CAC	Consumer Affairs Commission (Jamaica)
CAGR	Compound Annual Growth Rate
CANTO	Caribbean Association of National Telecommunications Organizations
CARAC	Caribbean Atlantic Cable System
CARICOM	Caribbean Community and Common Market
CARIFORUM	Caribbean Forum of ACP(Asia, Caribbean and Pacific) States
CBC	Channel Broadcasting Cable (Belize)
CCJ	Caribbean Court of Justice
CCT	Caribbean Cellular Telephone
CCTT	Cable Company of Trinidad and Tobago
CDB	Caribbean Development Bank
CDERA	Caribbean Disaster Emergency Response Agency
CIDA	Canadian International Development Agency
CITEL	Inter-American Telecommunication Commission of the Organization of American States
CITI	Columbia Institute for Tele-Information
CJFS	Cayman Jamaica Fibre System
CKLN	Caribbean Knowledge and Learning Network
CLARA	Cooperación Latinoamericana de Redes Avanzadas
CMI	Caribbean Meteorological Institute
CMO	Caribbean Meteorological Organization
CONATEL	Consejo Nacional de Telecomunicaciones (Dominican Republic)
CONATEL	Conseil National des Télécommunications (Haïti)
CPA	Cotonou Partnership Agreement
CPE	Customer Premises Equipment
CPP	Calling Party Pays
CRNM	Caribbean Regional Negotiating Machinery
CSF	Caribbean Services Federation
CSME	CARICOM Single Market and Economy
CTL	Caribbean Telecommunications Ltd.
CTU	Caribbean Telecommunications Union
CUDI	Corporación Universitaria para el Desarrollo de Internet (México)

DECT	Digital Enhanced Cordless Telecommunications
DOCSIS	Data Over Cable Service Interface Specification
DOM	Eastern Caribbean and French Overseas Departments
DRN	Direccion de Regulaciones y Normas
DSL	Digital Subscriber line
DTH	Direct-to-Home
DWDM	Dense Wavelength Division Multiplexing
ECFS	Easter Caribbean Fibre System
ECLAC	United Nations Economic Commission for Latin America and the Caribbean
ECTEL	Eastern Caribbean Telecommunications Authority
EDUCONS	Education and Communication Network Suriname
EPAs	Economic Partnership Agreements
ESCAP	Economic and Social Council for the Asia Pacific
ETECSA	Empresa de Telecomunicaciones de Cuba S.A.
ETSI	European Telecommunications Standards Institute
EU	European Union
FTA	Free Trade Agreement
FTAA	Free Trade Agreement of the Americas
FTC	Fair Trading Commission
FWA	Fixed Wireless
GATS	General Agreement on Trade in Services
GBSI	Global Broadband Satellite Infrastructure
GEANT	Pan European backbone connection national research and education networks
GSN	Global Services Network
GT&T	Guyana Telephone and Telegraph Co.
HFC	Hybrid Fibre Coaxial Cable
IADB	Inter-American Development Bank
ICA	Institute for Connectivity of the Americas
ICC	Innovative Communications Company
ICT	Information and Communication Technologies
ICTA	Information and Communication Technology Authority (Cayman Is.)
IDRC	International Development Research Center
INDOTEL	Instituto Dominicano de Telecomunicaciones
INTELCO	International Telecommunications Company (Belize)
IPLC	International Private Leased Circuit
IRUs	Indefeasible Rights of User
ISMI	International Mobile Subscriber Identity
ISPs	Internet Services Providers
IT	Information Technology
ITSO	International Telecommunications Satellite Organization
ITU	International Telecommunications Union
JAMPRO	Jamaica Promotions Corporation
JNAP	Digicel and Jamaica Network Access Point
JTAC	Jamaica Telecommunications Advisory Council
LACEA	Latin American and Caribbean Economic Association
MIC	Ministry of Information and Communications
MMDS	Line-of-sight multi-channel, multi-point
MOU	Memorandum of Understanding
MRP	Master's Degree in Telecommunications Regulation and Policy
MTPTC	Ministère des Travaux Publics, Transport et Communications (Haïti)
NAP	Network Access Point
NARUC	National Association of Regulatory Utility Commissions
NFMU	National Frequency Management Unit
NGBT	Negotiations on Basic Telecommunications

NRRI	National Regulatory Research Institute
NTRCs	National Telecommunications Regulatory Commissions
OAS	Organization of American States
OECD	Organization for Economic Cooperation and Development
OECS	Organization of Eastern Caribbean States
OOCUR	Organization of Caribbean Utility Regulators
OUR	Office of Utilities Regulation
PDH	Plesisynchronous Digital Hierarchy
PLC	Power Line Communications
PSTN	Public Switched Telecommunications Network
PUC	Public Utilities Commission
PURC	Public Utility Research Center
RBTT	Royal Bank of Trinidad and Tobago
RETINA	Red Teleinformática Académica en Argentina
REUNA	Red Universitaria Nacional en Chile
RFP	Request For Proposals
RIO	Reference Interconnection Offer
RLL	Radio-in-the-loop
RPBG	Rosheuval & Partners Business Group (Suriname)
RPP	Receiving Party Pays
RTA	Regional Trade Agreements
S&D	Special and Differential Treatment
SDH	Synchronous Digital Hierarchy
SDR	Software Defined Radio
SMA	Spectrum Management Authority
SMP	Significant Market Power
SMS	Short Message Service
SRG	Systems Resources Group
TAS	Telecommunications Authority Suriname
TATT	Telecommunications Authority of Trinidad and Tobago
TCCC	Trans-Caribbean Cable Company
TCCN	Trans-Caribbean Cable Network
TDMA	Time Division Multiple Access
TEMIC	Telecommunications Executive Management Institute of Canada
TSTT	Telecommunications Services of Trinidad & Tobago
UNDP	United Nations Development Programme
USAid	United States Agency for International Development
UWB	Ultra Wide Band
VAS	Value Added Services
VoIP	Voice over Internet Protocol
VSAT	Very Small Aperture Satellite
WiFi	Wireless Fidelity
WiMAX	An air interface standard for fixed broadband wireless access systems employing a point-to-multipoint architecture
WLAN	Wireless Local Area Network
WLL	Wireless Local Loop
WRC	World Radio Conferences
WSIS	World Summit on the Information Society
WTO	World Trade Organization

INTRODUCTION

Due of their small size, Caribbean countries depend on external trade for their sustained growth and development. Successful participation in world trade is therefore a central aim of their development strategies and the underlying rationale for their participation in international trade negotiations. In parallel with their own regional integration process, CARICOM Member States have participated in the multilateral negotiations of the World Trade Organization (WTO), Western Hemisphere negotiations aimed at establishing a Free Trade Area of the Americas (FTAA), negotiations for a Regional Economic Partnership Agreement (REPA) with the European Union, and a number of bilateral negotiations with individual countries or groups of countries aimed at the progressive liberalization of trade.

However, private sector involvement in the regional negotiating effort remains weak in the case of the services sector. This is a serious impediment to the process for at least two reasons. Firstly, without informed private sector contributions, the Caribbean Regional Negotiating Machinery (CRNM)[1] often lacks the detailed sector, production and trade data necessary to analyze and choose among different negotiating options in the various subject areas of the negotiations. Secondly, without an effective voice, the private sector cannot properly influence the negotiations and cannot, therefore, articulate and promote its interests in a process whose outcome will have far-reaching consequences for Caribbean economies in general and for business performance in particular. Market access, investment rules and other trade negotiation issues play a crucial role in determining the ability of Caribbean firms to compete in local and international markets. Hence, the importance of the private sector's active involvement in defining regional positions on the scope and timing of trade liberalization.

A number of reasons have been cited for the lack of private sector participation. In the Caribbean, trade negotiations have traditionally been viewed as the purview of governments; hence the private sector has little experience in this area. Lack of knowledge about trade issues and their implications for business is widespread among Caribbean firms and prevents them from effectively contributing to the formulation of national and/or regional positions. In addition, many companies have shown little interest in current negotiations either because they think they will continue to be protected from outside competition, or because they believe they cannot affect the inevitable trend towards free trade.

Telecommunications services, which are critical in the delivery of other services and manufacturing goods, are lucrative areas of economic activity with potential for continued growth given media convergence and continuing innovations in information and communications technologies (ICTs). The telecommunications sector is vital in a world of global production and increasingly globalized trading arrangements. It has revolutionized the concept of cross-border supply under the General Agreement on Trade in Services (GATS) as it is becoming possible to supply more and more services in digital form.

[1] The CRNM was established in 1997 by the Conference of Heads of Government of CARICOM to assist Member States in global trade negotiations by providing sound, high-quality advice, facilitating the generation of national positions, coordinating the formulation of a unified strategy for the Region and undertaking/leading negotiations where appropriate. Its mandate is to: (i) develop and execute an overall negotiating strategy for the various negotiations in which the region is involved; (ii) lead the Region's negotiating team and be the main representative in the conduct of negotiations, especially those at the decision making level; (iii) develop and fine-tune the strategy for various negotiations within the timetable identified for the particular area; and, (iv) maintain regular contact with sectoral negotiators and work with them in the identification of issues and the development of appropriate responses. The CRNM undertakes technical studies, organizes technical working groups and consultations with member states government officials, the private sector and civil society.

The WTO negotiations on basic telecommunications which ended in 1997 set a benchmark for rules on trade in telecommunications and regulatory principles.[2] CARICOM states did not grant any tangible new market access in those negotiations but scheduled commitments that reflected the status quo in their markets at that time. Since then, many have liberalized elements of their telecommunications sector unilaterally while some still have market access conditions identical to those in 1994 when the Uruguay Round ended and the extended negotiations on basic telecommunications started.

Unfortunately, telecommunications are not yet part of the formal liberalization process under the CSME. This is of concern, especially since most CARICOM Member States have opened, and are continuing to open their markets to foreign suppliers in a unilateral manner. Essentially, the role of telecommunications in the development of CARICOM has not been clearly articulated at the regional level even though the anticipated scale economies linked to the CARICOM Single Market and Economy (CSME) have direct relevance for the telecommunications industry. Yet, in light of the ongoing process to establish a Single Market it is important to ensure adaptability and compatibility of telecommunications systems across CARICOM.

Indeed, there is no long-term basis for maintaining the current segmented national telecommunications markets and policy approaches in CARICOM. The critical infrastructural nature of telecommunications services, which depends on economies of scale, is only one of many compelling reasons. It is important to outline the rationale and modalities for creating a single market for telecommunications in CARICOM, and this especially because several CARICOM Member States appear quite willing to bind their de facto market openings in telecommunications in their GATS offers in the WTO.

The main objective of this research report is to analyze the market opening in telecommunications that has occurred in CARICOM states since the GATS came into force and to assess the implications for negotiations at the bilateral, regional and multilateral levels. The report reviews the current state of the telecommunications and ICT sectors including the level of competitiveness in the sector in CARICOM and examines the role of the telecommunications and ICT sector within the CARICOM/CSME integration process and in international trade negotiations.

The report presents the approaches governments have taken, both individually and collectively, to create enabling environments for ICT and ICT-related services to flourish and contribute to the regional integration process. It concludes that ICTs and their related services and sectors cannot be successfully deployed nor deployed in national and regional environments where telecommunications has not yet been liberalized and introduced to the competitive pressures of the marketplace. The positive impacts of regional cooperation organizations, such as the Caribbean Telecommunications Union (CTU), in advancing the telecommunications liberalization process are also presented.

The report also describes technological and other changes in the telecommunications industry in CARICOM countries, including regulatory frameworks and institutional arrangements, infrastructure and competitiveness, as well as promising new transmission and switching technologies such as Voice over Internet Protocol (VOIP). The role of telecommunications in the provision of other services and creation of new services also is examined. The CARICOM

[2] WTO Members undertook commitments on basic telecommunications by virtue of signature of the Fourth Protocol to the General Agreement on Trade in Services which includes national market access schedules. The Fourth Protocol entered into force in January 1998.

Single Market and Economy (CSME) is reviewed together with strategies of other regions, including the European Union's Framework for Electronic Communications Networks and Services, and the Asia-Pacific Telecommunity.

Furthermore, this report provides an in-depth analysis of the problems and opportunities for the Caribbean by fully exploiting its potentials for telecommunications and ICT, particularly in the delivery of other services and in the creation of new services. A major beneficiary of improved telecommunications and ICT services that result in improved global networking are sectors such as tourism where the Caribbean has a certain comparative advantage but also the more recent information-intensive industries including computer and related services, and distribution and financial services.

The four annexes to the report provide extensive facts and statistics gathered in the research for this report. Annex 1 is a summary of WTO telecommunications commitments on market access, national treatment and regulatory and trade principles and the current situation in the sector. Annex 2 presents in tabular form the 19 submarine fibre optic cable systems in the Caribbean and the approximately 80 cellular mobile operators in the 30 countries and territories. Annex 3 presents a technological overview of wireline, wireless and broadband access technologies currently available or being developed to allow broadband transmission over transport and local loop access networks in the Caribbean. A summary indicates the range of data transfer speeds available in each technology. Annex 4 contains the terms of reference for the project.

It is intended that the information obtained from this research will provide background to the private sector and assist it in articulating its interests in global trade negotiations. It should also provide background to policymakers with respect to liberalization and development of the telecommunications and ICT sectors.

I. CURRENT STATE OF THE TELECOMMUNICATIONS SECTOR IN THE CARIBBEAN

I.1 Introduction

The countries and territories of the Caribbean, which have until now been dependent on agriculture (bananas, sugar, coffee), tourism, and in the case of Trinidad and Tobago on oil, gas and chemical exports, have been seeking to diversify their mainly resource-based economies. Many have been contemplating developing information-based industries including data entry, data manipulation, data conversion, information processing, information management, and content creation, among others. The refrain in the international trade in services, particularly for small countries with finite natural resources, is information and communications technology (ICT) industries and the contribution they have the potential to make to the socio-economic development of any nation.

ICTs encompass any information storage and/or communications device including the telephone, television, computers, radio, and multimedia tools, as well as their distribution systems, services and applications, such as satellite or cable TV, the global network of networks called the Internet, and the countless innovative applications able to run through these delivery channels. Digital convergence, or the blending of the telecommunications, media (broadcasting), and information technology sectors is a critical component of the so-called information revolution and the reason why ICT services industries are being seen as one of the most feasible ways for developing countries to join the ranks of more advanced economies.

This convergence has been facilitated by computerization and the constant reductions in the price and capacity of the processors used in digital devices including analogue-to-digital converters and computers; the continuing increases in computer processing power; and the ability to link computers into networks to communicate and/or share software, digital information, and often even processing power.

It has also been helped by advances in transmission technologies including wireless cellular, fixed wireless, DSL, cable, WiFi, WiMax, power line communications (PLC), mesh networks, and others, some of which are discussed in Section I.3.1 of this Chapter and in Annex 5.

ICTs play a critical role in service economies in particular by providing the value-added component that connects the dots between individuals, firms, communities, institutions, and even countries. ICTs have the potential to cut out middlemen or third-party entities that operate between suppliers and buyers and between producers and consumers. In this way, they facilitate new forms of interaction that mean the difference between innovation, efficiency, and genuine knowledge creation, and functioning in ways that inhibit national competitiveness and discourage creative transformation. ICTs facilitate on-demand availability, flawless transactions, deeper relationships, greater personalisation of goods and services, and multi-party interaction that supports greater choice and more effective decision making based on openness, transparency, and accountability.

The Caribbean has many advantages that support the development of ICT-related activities and services such as e-commerce for example, including a strong affinity to North America, a common language and time zones, relatively easy and quick access from the USA and Canada, a basic core of highly skilled professionals, wages which may be high with respect to other centres of outsourcing but are, nevertheless, lower than those in the USA and Canada, and some experience in information-based industries. In addition, there is an important Caribbean Diaspora, living mainly in the USA, Canada, the United Kingdom and to a smaller extent in France and the Netherlands with the skills and the wealth, which can be tapped to support the development of dynamic ICT industries in the region.

Many countries and territories of the Caribbean have been seeking to use ICTs to connect their citizens for education, commerce, health and cultural development. Several have designed or are designing ICT strategies like, for example, Grenada, which revised its strategy in 2002, Trinidad and Tobago, which presented its National Information and Communication Technology Strategy in December 2003; and Barbados, whose Government completed its own ICT Strategic Plan in 2005. What is more, the CARICOM Connectivity Agenda and Platform for Action provides a conceptual framework and general guidelines for member states to develop their own connectivity agendas.

Development of information-based industries and effective implementation of ICT strategies, and their incorporation into every-day economic activity, are, however, dependent on several factors the two most important of which are: (i) the availability of physical infrastructure that allows people, businesses and governments to communicate and (ii) the ease with which this infrastructure is accessible to all who have or want to communicate. The Caribbean possesses relatively sound infrastructure, but it is unevenly distributed and expensive to use. In the 15 CARICOM member states, main line telephone penetration, an index often used to measure the state of development of telecommunications infrastructures, varies between about 60% in St. Kitts & Nevis and 1.7 % in Haiti. Similarly, there is a wide disparity in the penetration rates for cellular mobile and Internet usage. (Table 1).

Table 1: Population, Per Capita GDP, Fixed and Mobile Telephone Penetration and Internet Access in the CARICOM Member States (2005 unless otherwise indicated)

*** 2002 ** 2003 *** 2004**

CARICOM Member State	Population	per capita GDP	Main Lines/100	Mobile phones/100	Internet Users/100
Antigua and Barbuda	81,479	$9,028 *	47.2 ***	67.1 ***	35.6
Bahamas	323,063	$15,535 *	43.9 ***	58.4 ***	31.9
Barbados	269,000	$9,659 *	50.1	76.7	59.5
Belize	270,000	$3,968 ***	12.3	34.5	14.1
Dominica	71,300	$3,669 **	29.4 ***	58.7 ***	28.8 ***
Grenada	102,924	$4,310 **	32.0 ***	42.4 ***	18.6 **
Guyana	751,218	$1,051 ***	14.7	37.5	21.3
Haiti	8,528,000	$445 ***	1.7 ***	4.9 ***	7.0
Jamaica	2,651,000	$3,084 **	12.9	101.8	39.9 ***
Montserrat	42,696	$3,400 *			..
Saint Kitts and Nevis	42,696	$9,574 ***	59.3 ***	23.7 ***	24.3 *
Saint Lucia	160,765	$4,719 ***	33.0 ***	58.3 ***	34.5 ***
St. Vincent and the Grenadines	119,000	$3,162 **	18.9	59.3	8.4
Suriname	449,238	$2,228 **	18.0	51.8	7.1
Trinidad and Tobago	1,306,000	$8,729 ***	24.8	61.3	12.2
Total	**15,168,379**				
Average			**10.1**	**35.0**	

Source: ITU WTI 2006

I.2 Status of the telecommunications industry in the CARICOM countries

I.2.1 Regulatory frameworks and institutional arrangements

Until very recently, monopoly operators provided virtually all domestic and international fixed and mobile services, value added and Internet services in all of CARICOM, Cable & Wireless (C&W) was and to a large extent continues to be the predominant operator in the telecommunications sector owning between 49% and 100% of the telephone companies in the CARICOM member states where it operates, directly or through the fully-owned Cayman Islands-based subsidiary Cable & Wireless (West Indies). In The Bahamas and Haiti. telecommunications operators were and continue to be wholly owned by the government. In Suriname domestic and international fixed services continue to be fully-owned by the government. In Guyana, a private investor acquired the state-owned telephone company in 1990 and in Belize a local private investor currently owns or controls more than 60% of BTL, the dominant operator.

In February 1997 when 69 countries signed the landmark agreement on basic telecommunications (BTA) in the WTO, the monopoly operators had licences whose terms and conditions very much favoured them and not the governments nor the users[3]. C&W's licences conditions (which were similar in most countries and territories) are illustrative. (Box 1)

Box 1: C&W's Licence Conditions in the Caribbean before Liberalization

- The local C&W Company had a virtual monopoly over all telecommunications services for the period of the licence[4]. The few conditions in its licences 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[5].

[3] Dominica had renewed C&W's exclusive licence for 25 years two years earlier in 1995. In Guyana in 1990 ATN was granted a 20-year nearly exclusive licence renewable for another 20 years at the option of ATN.

[4] 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".

[5] It has been reported that in Board Meetings dealing with Government matters the Government's Board members were often not given company information necessary for the deliberations.

At the time CARICOM member states and the British Overseas Territories (BOT) had telecommunications laws which pre-dated the Second World War and applied only to the radio frequency spectrum or more precisely to the licensing of radio equipment. In 1997, only Haiti had a sector specific regulator (CONATEL) which also regulated broadcasting. Trinidad & Tobago was developing a sector policy framework and the Dominican Republic and The Bahamas were drafting new legislation, which would establish independent regulators.

During the negotiations on basic telecommunications, which ended in February 1997 WTO members had accepted a number of obligations within the GATS, Telecommunications Annex and the regulatory principles Reference Paper and had been expected to make Specific Commitments for Telecommunications Services. (Box 2). There was a growing consensus that telecommunications had become both a commercial and traded services and that consequently domestic market structures should be moving toward privatization of national operators, competition (multiple providers) in all services, and formal recognition of the central role of telecommunications as the driver of rapid transition to “information economies.” Most CARICOM Members States are WTO members and have ratified the 1994 Uruguay Round agreement that incorporates the GATS; however, not all have made strong market opening commitments even though most that made commitments in 1997 took on the Reference Paper.

Box 2: General Agreement on Trade in Services (GATS)

Its objectives are to establish principles and rules to expand trade under conditions of transparency and progressive liberalization as a means of promoting economic growth. There are several related principles:

- Most Favoured Nations (MFN) Treatment – accord unconditionally to services and service suppliers treatment no less favourable than it accords to like services and suppliers of any other country.
- Transparency – establishing enquiry points to provide specific information to other Members, as well as meet notification requirements.
- Domestic Regulation: Qualification procedures, technical standards and licensing procedures should not constitute unnecessary barriers to trade in services.
- Market Access: In sectors where market-access commitments are undertaken, measures which a Member maintain shall not place limitations on the number of service suppliers, limits on the total value or service transactions, and measures which restrict specific types of legal entity for suppliers of services.
- Commitment on Basis Telecommunications that promote liberalization enhances certainty, security and predictability through a clear set of rules.

Telecommunications Annex

- All Public Telecommunications Networks and Services Covered
- Cable and Broadcasting of Radio and Television Programs Excluded
- Reasonable, non-Discriminatory Access to and Use of Public Networks and Services Ensured
- Conditions Liberalized for: Attachment of Terminal Equipment; Interconnection of Leased Lines; Notification, Registration and Licensing, and Choice of Operating Protocols.
- Restrictions may be placed on Interconnection of private leased lines with public networks.
- Members shall encourage and support telecommunications cooperation among developing countries at the international, regional and sub-regional levels.

Regulatory Principles Reference Paper

- Competitive Safeguards to Prevent Anti-Competitive Practices
- Interconnection Ensured Under Non-Discriminatory Terms and Conditions
- Universal Service – USO Must be Administered in Transparent, non-Discriminatory and Competitively Neutral Manner and not more Burdensome than Necessary
- Licensing Criteria – Publicly Available and Reasons for Denial Made Available
- Independent Regulatory Body Separated from any Supplier of Basic Telecom
- Allocation of Scarce Resources – Frequency, Numbers and Rights-of-Way Carried Out in Objective, Timely, Transparent and non-Discriminatory Manner

Specific Commitments for Telecom Services

- Basic Voice Telephone Services –
- Enhanced/Value-Added, EDI and Online Services
- Wireless Mobile Services

Six CARICOM member states (Antigua and Barbuda, Belize, Dominica, Grenada, Jamaica, and Trinidad and Tobago) made BTA commitments; however, these were necessarily modest allowing immediate competition only in some value added, Internet, and other non-basic services because of the near exclusive arrangements these countries had with the exclusive suppliers of telecommunications services at the time. All committed to open competition once the periods of exclusivity ended and some liberalized cellular mobile services immediately. Five other countries that participated in the NGBT did not make commitments in 1997. These were St. Kitts & Nevis and Guyana which had made earlier commitments at the conclusion of the Uruguay Round in 1994, and St. Vincent & The Grenadines, St. Lucia, Montserrat, and Barbados, which did not make any commitments but stated that they intended to do so later. Barbados and Suriname made subsequent commitments in 1998. The Dominican Republic, which is not a member of CARICOM but of CARIFORUM[6] committed to liberalising virtually all basic services under the only condition that the operator establish a legal domicile in the country.

Table 2 summarises the situation in 1997 and 1998.

Prior to the 1997 conclusion of the negotiations in basic telecommunications in many CARICOM member states used the process very effectively to review the status of domestic policies for the sector and, more importantly, indicate to the incumbent and potential investors in a process that was receiving much international attention that their resolve to liberalize their telecommunications sectors was to be taken seriously. They did this even though they knew that their scope for maneuver was limited by the exclusive arrangements that the incumbents enjoyed. Their resolve did pay off and the significant progress achieved in liberalizing since then is in part at least attributable to their participation in the WTO negotiations.

[6] Caribbean Forum of ACP States includes the Dominican Republic and all CARICOM members except Montserrat.

Table 2: The Situation in 1997 and 1998: Market Structure and WTO Commitments of CARICOM Members and the Dominican Republic

Country	% Foreign Ownership of Operator(s)	Foreign Strategic Investor	Term of Exclusive Licence	WTO Commitment		
				Competition in Basic Telecoms	Adopts Reference Paper	Market Opening (with some or no limitations on market access and national treatment)
Antigua & Barbuda	100*	C & W	2012	2012	yes	VAS, CUG, ISP, satellite-based mobile & fixed satellite, CPE, teleconferencing
The Bahamas	0	BTC, govt. owned	indefinite	no commitment	no commitment	ISP, trunking, paging, CPE
Barbados**	85	C & W	2011	01.01.2012	yes	CUG, ISP (1999), terrestrial and satellite based mobile (1999), cellular mobile (1999), mobile data (1999), PCS (1999), paging (1999), fixed satellite, private VSAT
Belize	23	MCI	2002	no commitment	yes	some VAS, ISP and paging after 30.12.2007; trunking, teleconferencing after 30.12.2002
Dominica	80	C & W	2020	no commitment	yes	CUG, VAS, ISP, mobile & fixed satellite, teleconferencing.
Dominican Republic	30-100**	GTE Motorola	no excl. licence	no commitment	yes	most basic services; commercial presence required
Grenada	70	C & W	2006	2006	yes	CUG, some VAS, ISP, trunking, CPE, mobile & fixed satellite,
Guyana***	80	ATN	2010***	no commitment	no commitment	some VAS, cellular telephone
Haiti	1	govt owned	-	no commitment	no commitment	no commitment
Jamaica	79	C & W	2013	09.2013	yes	some CUG, VAS, ISP, digital cellular telephone, CPE, teleconferencing
Montserrat	100	C&W	2013	no commitment	no commitment	no commitment
St. Kitts & Nevis***	65	C & W	2015	no commitment	no commitment	some VAS
St. Lucia	100	C & W	2001	no commitment	no commitment	no commitment
St. Vincent & The Grenadines	100	C & W	no commitment	no commitment	no commitment	no commitment
Suriname**	0	govt. owned	Indefinite	01.01.2003	yes	duopoly in basic (incl. terrestrial and satellite based mobile, cellular mobile and PCS) until 01.01.2003; packet and circuit switched data; ISP; private telephone; mobile data; paging; trunking
Trinidad & Tobago	49	C & W	2009	2010	yes	VAS, terrestrial and satellite-based mobile, fixed satellite, CPE, teleconferencing.

* International operator only; ** several operators; *** renewable at the request of the company for another 20 years; **** commitment made in 1998; ***** commitment made in 1994; CUG = closed user group; ISP = Internet Service Provider; VAS = value added service provider; CPE = customer premises equipment

By the end of 2005, CARICOM member states had opened their telecommunications sectors and there was vibrant competition, at least in the cellular mobile market. The governments in countries where C&W had operated solely or in partnership with the government had conducted successful negotiations whereby C&W agreed to exchange its exclusive licences for non-exclusive licences. Barbados, Belize, the five Organisation of Eastern Caribbean States (OECS), Jamaica, and Trinidad and Tobago had implemented new legal and regulatory frameworks, which included the establishment of independent national regulators and, in the case of the OECS, national and regional regulators. All had and/or were in the process of licensing new operators and service providers. The five British Overseas Territories (Anguilla, Cayman Islands, Montserrat, Turks & Caicos, and British Virgin Islands) had reformed or were in the process of reforming their telecommunications sectors including the passing of new pro competitive laws, establishing independent regulators and also licensing competing operators and service providers. The Bahamas passed a new telecommunications law in 1999, amended its Public Utilities Commission Act in 2000 and issued a telecommunications Sector Policy in 2001 (amended in 2002) but was unable to privatize the state-owned monopoly telephone company, BTC, a process which started in 2002 and ended in failure in mid 2004. Guyana had never fully implemented provisions of the Telecommunications Act of 1990 but was developing a new policy for the sector. In Antigua & Barbuda, where Cable & Wireless has exclusivity (until 2012) for international communications and the 100% government-owned Antigua Public Utilities Authority (APUA) maintains a monopoly for local fixed line services, the government now has plans to liberalise the sector in early 2007.

In the non English-speaking Caribbean, Suriname established an independent regulator, TAS, by decree in 1998. This regulator, which is operating, will only be given effect when the new Telecommunications Act, which was approved by Parliament in September 2004, is promulgated. The Dominican Republic passed its new telecommunications law in 1998 which, inter alia, established the independent regulator Instituto Dominicano de Telecomunicaciones (INDOTEL). Haiti has maintained a structure similar to the one it had back in 1997. (Table 3)

Annex 1 presents the current legal, regulatory and institutional structure of the telecommunications sector in the CARICOM and CARIFORUM countries and their 1994, 1997 and 1998 WTO GATS commitments

Table 3: The current (2005) situation with respect to market access in CARICOM Members and the Dominican Republic

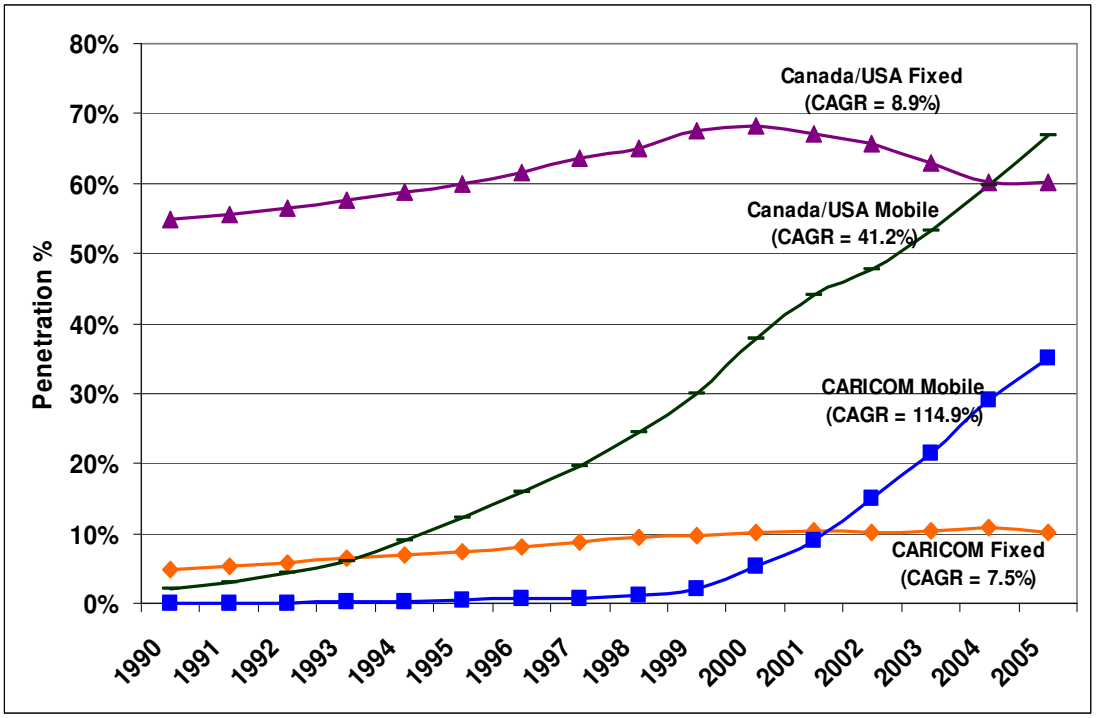
Country	Current market access (de jure)	Pro comp. Legislation.	Ind. Reg.	Cross border supply (mode 1)	Foreign ownership limits	Some of the current players
Antigua & Barbuda	competition permitted in mobile and Internet access	new legislation planned	none		none	APUA PCS, C&W, and Cingular, Kelcom Intl.
The Bahamas	duopoly in fixed voice; monopoly in mobile and cable TV; some ISPs and others;	Telecom Act, 1999; PUC Act 1993 (Amended 2000)	PUC			BTC, Cable Bahamas, Indigo
Barbados	fully liberalised since Feb. 2005	Telecom Act, 2002	FTC	Not prohibited in Act	none	C&W, Digicel, TeleBarbados, Antilles Crossing, Kelcom Intl.
Belize	fully liberalized since Aug. 2002	Telecom Act., 2002	PUC	Not prohibited in Act	none	Belize Telecommunications Ltd., Speednet
Dominica	fully liberalised since Mar. 2003	Telecom Act, 2000	ECTEL, NTRC	Not prohibited in Act	none	C&W, Digicel, Orange Caribe, SAT Telecoms, Marpin
Dominican Republic	fully liberalised	Ley 153-98 (1998)	INDOTEL		none	Verizon Dominicana, TRICOM, Orange Dominicana, Centennial,
Grenada	fully liberalised since Mar. 2003	Telecom Act, 2000	ECTEL, NTRC	Not prohibited in Act	49% in trunking	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	PUC, Director of Telecommunications, National Frequency Management Unit			GT&T, U-Mobile (cellular) Inc. Trading as Digicel [acquired Cel*Star], CTL
Haiti		none; outdated law of 1977	Conatel			Teleco, Haitel, Comcel, Digicel, Rectel
Jamaica	fully liberalised since 1 March 2003	Telecom Act, 2000	OUR, FTC, SMA			C&W, Digicel, Oceanic Digital, FibraLink, InfoComm, N5
Montserrat	has not undertaken sector reform		none			C&W
St. Kitts & Nevis	fully liberalised since Mar. 2003	Telecom Act, 2000	ECTEL, NTRC	Not prohibited in Act		C&W, Digicel, Caribbean Cable, St. Kitts Cable, Cariglobe
St. Lucia	fully liberalised since Mar. 2003	Telecom Act, 2000	ECTEL, NTRC	Not prohibited in Act		C&W, Digicel, Antilles Crossing
St. Vincent & The Grenadines	fully liberalised since Mar. 2003	Telecom Act, 2001	ECTEL, NTRC	Not prohibited in Act		C&W, Digicel, Kelcom Intl.
Suriname	new Telecom Act has has been proclaimed 16 April, 2007	Wet Telecommunicatievoorzieningen Act,	TAS		40 %	Telesur, RPBG (ISP)

Trinidad & Tobago	fully liberalised since June 2004	Telecom Act 2001; Telecom(Amendment) Act, 2004	TATT	Not prohibited in Act	none	TSTT, Digicel, Laqtel, Lisa, CCTT

I.2.2 Infrastructure

The average main line telephone penetration in CARICOM at the end of 2005 was just over 10% compared with over 60% in North America (Canada and USA). The Compound Annual Growth Rate (CAGR) of main line telephones since 1990 is 7.5% and penetration levels actually decreased slightly between 2004 and 2005 as mobile is becoming a substitute for the fixed service. Similar to what has happened in other parts of the world mobile penetration has grown much more rapidly, rising from a negligible 0.1% in 1992 to 35% at the end of 2005 (CAGR = 115%)[7] as shown in Figure 1 which compares growth of main line (fixed) and mobile telephone penetration in the Caribbean and North America and shows that mobile penetration has exceeded main line since 2002.

Figure 1: Growth of Fixed and Mobile Telephones in North America (Canada and USA) and in the CARICOM Member States



Source ITU WTI 2006

The main line and mobile penetration rates at the end of 2005 in each of the 15 countries are shown in Figures 2 and 3. The latter also shows the mobile penetration rates in each of these countries in 2000 when these markets were starting to open.

There is a total of more than 80 mobile operators in the Caribbean. Most countries and territories have 3 or 4 competing operators. (See Annex 2) In CARICOM (including the associate members) only The Bahamas, British Virgin Islands, Montserrat, Suriname and Turks & Caicos have only one cellular mobile operator. Of these it is expected that there will soon be competing operators in

[7] With the real impact of the opening of the cellular mobile market in the region just starting to be felt, mobile penetration rates in 2005 are probably well above this figure.

BVI and Turks & Caicos all the other countries and territories (except Belize) have at least 3 competing operators.

There are 22 fibre optic submarine cable systems in the Caribbean. Sixteen of these are primarily Caribbean cables. The other six serve other regions (mainly South America) but have landing points in the Caribbean. (See Annex 3) While the existing and potential capacity of these cables is enough to serve the needs of the region not all countries have equal access to these. Many countries and territories have access to only one cable system, which for many of them is the older (1995) Eastern Caribbean Fiber System (ECFS). In the other countries, where more than one cable lands users may not have many options because a single operator has the landing licences for all of them. This is the case in Trinidad & Tobago where the fixed line monopoly, TSTT, has the landing rights for the Americas-1, Americas-2, and ECFS cable systems. Limited access to these systems and the lack of competition results in higher prices for bandwidth capacity for Caribbean users. Three new cable systems have been built and put into service recently, two in the first half of 2006. The SMITCOMS[8] (Sint Maarten International Telecommunications Services Limited) built in 2005 connects St Martin to the ARCOS cable in Puerto Rico, the FibraLink Submarine Fibre Network, which connects Kingston, Jamaica to the ARCOS cable landing station in Puerto Plata in the Dominican Republic, was put into service in March 2006 and the Antilles Crossing Cable which connects Barbados, St. Lucia and the Global Crossing system in St. Croix was inaugurated in June 2006.

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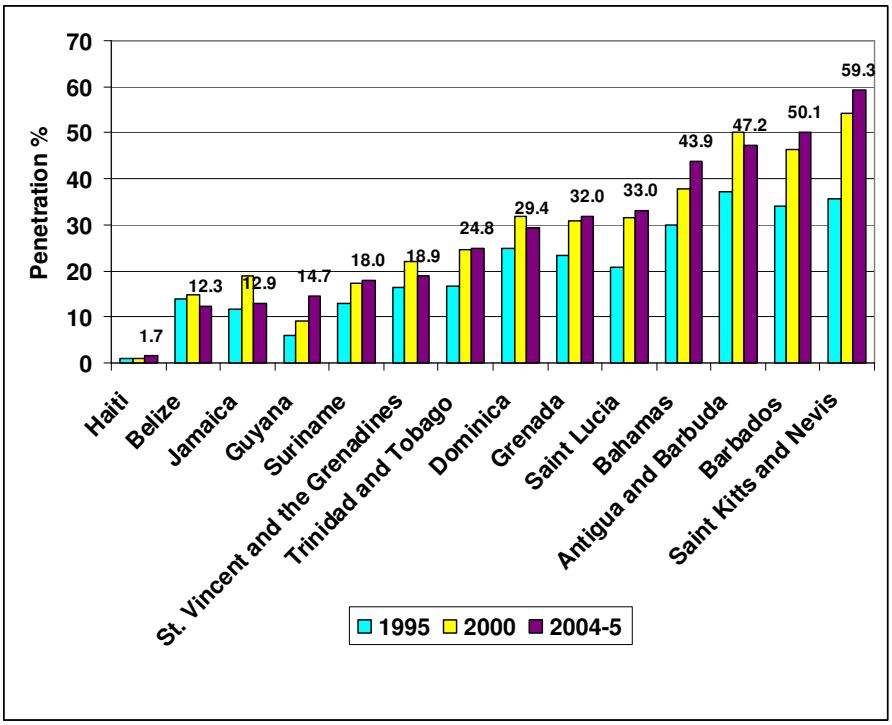
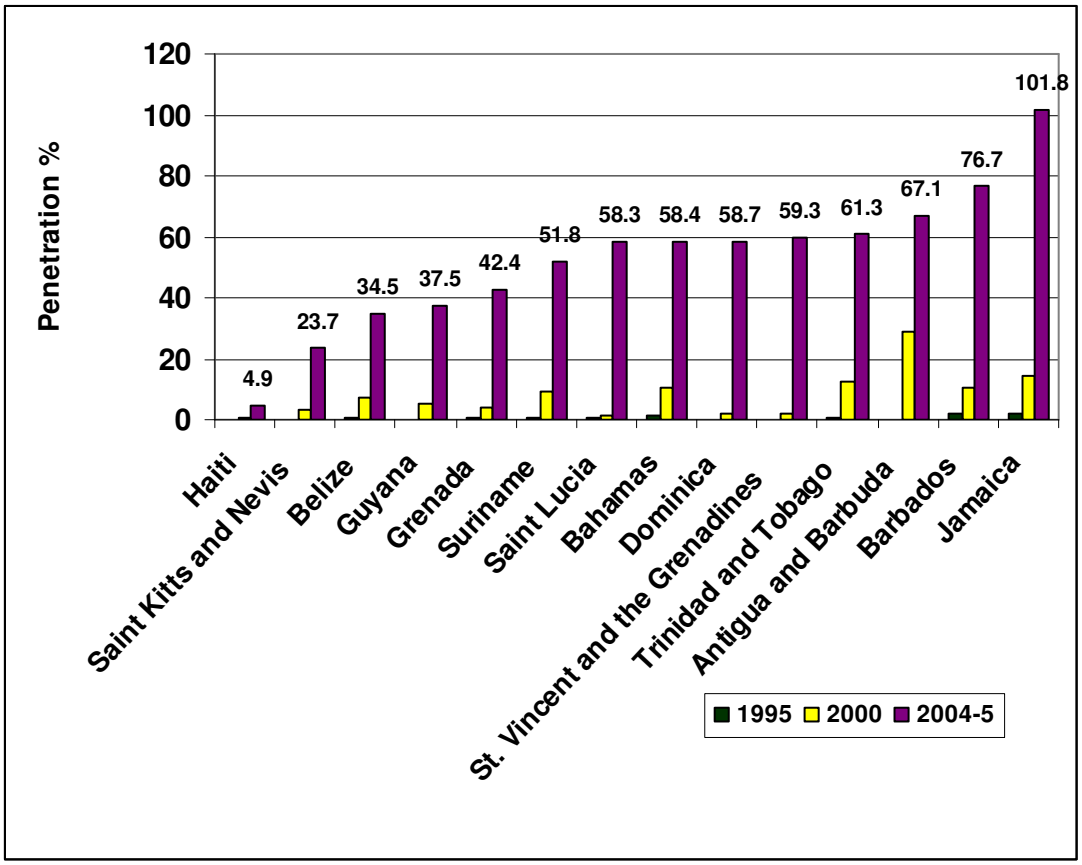
Figure 2: Main line telephone penetration in the CARICOM Member States (1995, 2000 and 2005)



Source ITU WTI 2006

[8] SMITCOMS, owned by the Island Territory of Dutch St. Maarten was officially established on May 10, 2000 to provide international telecommunication services on the Island of St. Maarten.

Figure 3: Mobile penetration in the CARICOM Member States (1995, 2000 and 2005)



Source ITU WTI 2006

I.2.3 Competitiveness

Four countries from the Caribbean were included in the World Economic Forum's (WEF) Global Competitiveness Report 2005-2006, which evaluates the perceptions and observations of business leaders with respect to three component indices (technology index, public institutions index, and macroeconomic environment index) in 117 countries. Trinidad & Tobago, Jamaica, Dominican Republic and Guyana ranked, respectively 60th, 70th, 102nd, and 115th out of 117[9]. The technology index is subdivided into the innovation, technology transfer and ICT sub indices. A separate report by the same institution ranks Jamaica, Trinidad & Tobago and the Dominican Republic 49th, 59th, and 78th out of 104 countries in its 2004-2005 Global Information Technology Report. The latter, which highlights the policy, institutional, and structural obstacles that prevent countries from fully capturing the benefits of ICT,

[9] Rankings are based on perceptions and observations of business executives in each country surveyed by the World Economic Forum in 117 countries in collaboration with academic and other institutions. See World Economic Forum, The Global Competitiveness Report 2005–2006. http://www.weforum.org/site/homepublic.nsf/Content/Global+Competitiveness+Programme%5CGlobal+Competitiveness+Report

establishes a country's networked readiness based on three pillars. (i) the environment for ICT development, such as the regulatory regime and the legal framework for ICT, the available infrastructure, and other technological development factors; (ii) the actual levels of networked readiness of individuals, businesses, and governments; and (iii) the actual levels of usage of ICT by individuals, businesses, and governments.

I.3 Technological and other changes in the sector

This section describes some of the newer transmission and switching technologies which are having an impact on how telecommunications and ICT services will be delivered in the future. A more detailed description of current wireline and wireless transmission technologies can be found in Annex 7.

I.3.1 Transmission technologies

GSM and CDMA[10], the two main competing cellular mobile technologies are evolving from narrowband (2G) to full broadband (3G). An intermediate version of CDMA (2.5G) can offer speeds up to 144 Kbps. The 3G version of CDMA offers theoretical maximum downstream (toward user) speeds of up to 2.4 Mbps and an upstream speed of 384 Kbps. The GSM equivalent 2.5G versions are GPRS and EDGE which offer similar throughput speeds but whose implementation requires a network overlay which CDMA does not require. Newer designed systems have made it possible to increase the range of base stations for EDGE applications by up to 70 km providing a coverage area of 9,555 km^2 and offering service to 1,480 subscribers within one cell. The 3G equivalent of GSM known as W-CDMA offers a downlink speed of 2 Mbps. Other higher speed versions of GSM are being developed.

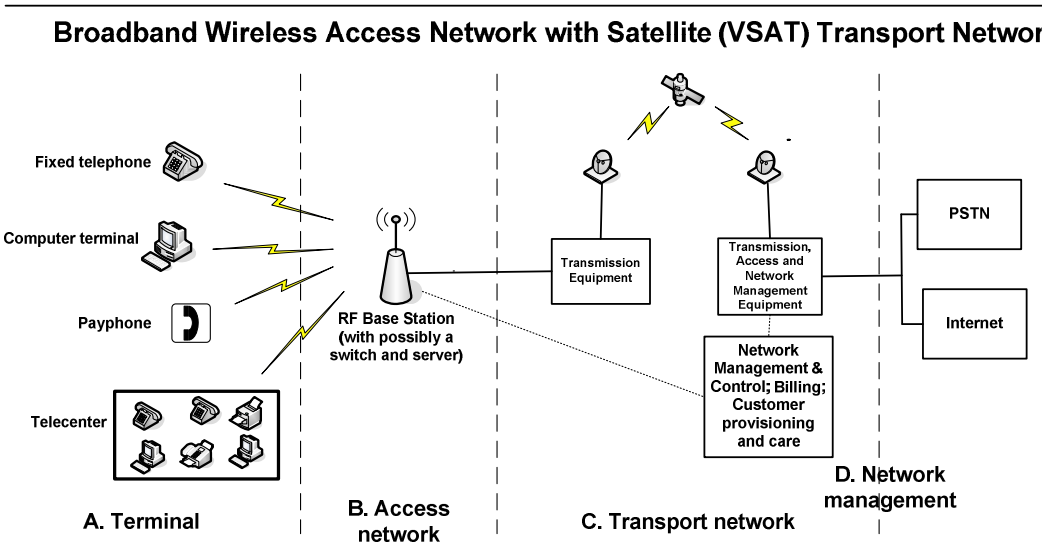
These systems generally operate in the 800, 900, 1800, and 1900 MHz frequency bands. More recently there has been growing interest in using the 450 MHz band and, in particular, CDMA 450 technology for rural, sub-urban and sparsely populated areas for both mobile and fixed applications because cell sizes are larger, fewer base stations are needed to cover a given area making deployment cheaper, the commonality of design and commercially available CDMA standard ensures that both the terminal and network equipment are produced in large quantities resulting in decreasing prices, and the possibility of deploying broadband systems that can simultaneously transmit high-speed data, voice and VoIP. In-building coverage is also good in this frequency band. A 450 MHz version of GSM has seen some limited deployment.

[10] GSM is a European developed standard which uses a time division multiplexing bandwidth compression technique. CDMA (Code Division Multiple Access) uses a quite different technique known as spread spectrum where coded signals are transmitted over a wide frequency band and then recognised by a receiver which can distinguish them one from among many others and decode them. The wider the frequency band, the greater the number of separately coded signals that can be sent at any one time. Code Division Multiple Access (CDMA), the cellular mobile technology which is based on spread spectrum technology uses a channel bandwidth of 200 KHz. WiFi, WiMax and Ultra Wide Band (UWB) also use spread spectrum technologies;

In Peru small rural operator, Valtron, has deploying a CDMA 450 network to provide fixed access in an entire province in the Andes Mountains (5,700 sq km. four river valleys, mountains up to 5,000 m. in height and 60,000 inhabitants) using only eight base stations. The cost per base station is in the order of US$ 25,000. With this network Valtron plans to offer services to about 1000 fixed telephone subscribers and about 740 public payphones.

Because of their decreasing price and wide coverage areas broadband wireless access (BWA), pre-WiMAX and WiMAX systems are very promising solutions for providing affordable wireless access. Figure 3 shows a BWA access configuration with a satellite backhaul link. A single base station can cover an area with a radius of up to 30 km in flat or even hilly rural settings. BWA systems may not require line-of-site between transmitter and receiver. The in-house customer premises equipment (CPE) which consists of the antenna, transceiver, and modem can be designed as a single, integrated indoor unit with an indoor antenna which the subscriber can install himself or herself by simply plugging it into a power source and a terminal which may be a residential VoIP telephone, a computer with a soft phone or a public payphone. A BWA local access system like the one illustrated in Figure 4 today costs in the order of US$ 50,000 including a base station and remote network management and control function. The CPE costs in the order of US$ 250 – 300.

Figure 4: BWA with satellite backhaul



Another economical wireless access technology which is providing broadband access in wide coverage areas is a mesh of WiFi hotspots covering a whole area of a community. Each hotspot can provide coverage within a radius of a few hundred meters of a WiFi base station. A pilot project in Sopachuy, Bolivia, has a mesh of three overlapping WiFi hotspots to cover this entire municipality of 1,500 people. Each WiFi transceiver/router which costs US$ 500 (without tower or installation but including the first year of network control and technical support from the supplier) has an individual IP address by which it can be controlled and

managed by a local or distant operator[11]. The system supports data, soft (computer based SIP) telephony and VoIP. In the USA, Azulstar, has built city-wide WiFi networks in Grand Haven, Michigan (population = 11,220; area = 19.2 km^2) and Rio Rancho, New Mexico (population = 70,000; 103 km^2) and is offering commercial Internet access and VoIP services. In Rio Rancho a VoIP/Internet (256/100 Kbps) package is offered at US$ 40/months and includes free calling within the USA and Canada[12].

Used in a point-to-point mode WiFi can also serve as an economical backhaul transmission link with line-of-sight ranges of up to 20 km. depending on antenna gain and the power which can be applied to the radio which can be higher in rural areas than that permitted in urban areas for the 2.4 MHz unlicensed band. A pilot project funded by Peru's universal access fund, FITEL, uses such WiFi backbone links (the longest of which is 10 km) and which can provide a throughput of 1 Mbps[13]. The installed cost for the tower, antenna, and radio equipment at each site was between US$1,200 and US$1,500.

An interesting variant of the WiFi mesh arrangement is its combination with solar powered streetlights where each street light carries a solar cell, an accumulator and a WiFi base station. The system which is still relatively expensive presents an interesting solution to providing both light and access in a village that has no electricity[14].

While not the cheapest technology satellite systems are often used in rural and remote areas to provide both backhaul (backbone) and local loop facilities because they are easy and quick to deploy and the only practical backhaul solution. Where there is no access to an electricity distribution network small satellite antennas with transmitters and receivers can be powered using solar panels. Satellite operators offer up-stream connectivity to the Internet to ISPs and others either through two-way links which include IP Transit or through a one-way link, typically with the return (higher capacity) via satellite[15]. As backhaul the maximum capacity that a satellite transponder offers is typically 36 MHz of bandwidth (approximately 18 E1s); however, newer satellite systems can offer up to 72 MHz of bandwidth[16].

New wireless applications have increased the demand for spectrum dramatically over the past few years. Cellular mobile services, where global subscriber numbers have now exceeded fixed, are often cited as an example of this[17]. New ways to transmit and receive signals over the air and to manage the radio

[11] http://www.locustworld.com/
[12] See for example: http://www.azulstar.com
[13] See: http://www.huaral.org/
[14] See www.starsightproject.com and www.kolam-partnership.com . The cost for 5,000 posts is about US$20 million including the light posts, network control, billing, installation, etc.
[15] For example, *Hispasat*, the Spanish satellite operator, offers a bi-directional Internet access service with down-link speeds of 2,048 Mbps and up-link speeds of 256 Kbps to up to 50 terminals, each connected to one or several PC's via local wired or wireless (e.g. WiFi) links at about US$43,000 a month or about US$861/terminal. The onetime purchase price of a terminal is about $2,500. While relatively expensive such satellite-based solutions present certain advantages in rural areas where there are no other wireline or wireless alternatives.
[16] Hispasat 1 D Will offer bandwidth capacities of 33, 36, 48, 50, 54, and 72MHz
[17] The total number of cellular subscribers world wide is approaching 2 billion.

frequency spectrum are being developed. These will effectively increase the amount of spectrum available for various fixed and mobile applications including broadband local access. (See Annex 5)

Policy makers who wish to facilitate access for their citizens and promote innovation are having to reflect on new, more efficient ways of managing the radio frequency spectrum including the allocation of increasing quantities of licence-exempt spectrum; however, not all policymakers and regulators are keen to offer frequencies for unlicensed uses. Besides being concerned about potential abuse and uncontrolled use of the spectrum leading to congestion, they may also be reluctant to part with a good generator of revenue. Others, however, see the potential benefits for their communications industries and citizens through the mass market that can be created by the development and production of open standard, licensed-exempt devices.

The industrial benefits of policies that promote the development and use of licence-exempt devices in the Caribbean may be less than they are in countries in North America and Europe and even Brazil, which have the capacity to produce these devices. However, policymakers and regulators in the region must recognise the potential of this technology to provide cheaper and more accessible broadband local access. Policies and regulations for the use of licence-exempt spectrum in the Caribbean should therefore inspired by developments in the USA, Canada and Europe while at the same time ensuring that entry of equipment into the region is not hindered so long as it has been type approved in North America and/or Europe.

I.3.2 Switching technologies: Voice over Internet Protocol

Advances in packet switching technologies are making it possible to provide good quality voice services over the Internet using Voice over the Internet Protocol or VoIP. This presents a particularly attractive alternative to long distance and international calling especially where prices on the PSTN continue to be high and where access to high speed Internet at reasonable prices is becoming more readily available. It also presents opportunities for new and old service providers to offer voice services at prices which are much cheaper than over the traditional circuit switched networks. Consumers benefit from lower prices.

Skype[18], the leading VoIP provider based in London, already boasts more than 220 million downloads worldwide of its (free) operating software and 50 million users since it was founded in April 2003[19]. Users can access its VoIP service through a computer and can place unlimited computer-to-computer voice calls and with the latest version can add video calling to other Skype subscribers anywhere in the world, at no charge. They can also place calls to nearly any telephone number in most countries (regardless of their point of origin), for very low per-minute prices. Another company, Vonage[20], which is reported to have 1.2 million customers offers an unlimited North American calling plan for the USA

[18] www.skype.com
[19] How to make a million connections, Financial Times, 8 July 2005
[20] www.vonage.com

(incl. Puerto Rico) and Canada for as low as US$ 15/month. As an added feature Vonage offers its customers a virtual USA, Canada, Mexico or UK telephone number for an extra US$ 5/month regardless of where they actually live. The customer chooses the country and area code. Vonage supplies free of charge the IP gateway (a router which also converts the customer's regular telephone phone into an IP phone) which the customer installs at home. The calling plan comes along with 911 emergency calling and features such as voicemail, caller ID, call waiting, and call forwarding. For example, Hotel San Blas, a boutique hotel in Cuzco, Peru, subscribes to Vonage and gets a local Miami number allowing its USA customers to reach the hotel by simply making a domestic or local call to a Miami number. The hotel's potential customers can go online, get all the information they need and even see live images of Cuzco taken from the hotel's web cams, then call a US number and make a reservation directly with the hotel eliminating the need for any middlemen[21]. Vonage has now introduced a WiFi phone which will allow its customers to call from anywhere where they can access the Internet via an open WiFi hotspot[22].

This rapidly growing VoIP market has become a serious challenge for incumbent telephone operators and regulatory authorities across the region, with a wide range of responses. There is no question that VoIP services directly cut into lucrative long distance and international traffic revenues (even while they also stimulate demand for such calls), including both outgoing call charges and incoming net settlement payments or termination charges. For this reason, many established operators have vigorously opposed authorisation of VoIP applications, and some regulators and policymakers have joined them. In Panama, VoIP calls must pay a 12% surtax, and Internet cafés are subject to heavy fines if they allow customers to use VoIP applications. Both Mexico and Colombia have issued strict prohibitions in the past against VoIP services.[23].

I.4 Role of telecommunications in the delivery of other services and the creation of new services

Telecommunications continues to be the core infrastructure for the delivery of voice, data and video communications but advancements and convergence in technologies have significantly changed economic and public policy contexts. More than a dozen years ago services trade negotiators recognised the important dual role of telecommunications as a tradable service in its own right and as a means to deliver other services and goods[24]. During the Uruguay Round negotiations that ended in 1994 and resulted in the first multilateral agreement in trade in services (GATS), industries such as financial services that depend heavily on telecommunications played a crucial role in ensuring that access to telecommunications networks and services was available in the countries where financial services were granted access for their own services under transparent, non discriminatory conditions and at cost oriented prices. This

[21] http://www.casasanblas.com/
[22] "Innovation that has shaken telephony, Paul Taylor, Financial Times, 5 January 2005. The WiFi telephone normally only works in hotspots where no login is required; however, the telephone does allow one to use an encrypted hot spot by typing in the encryption key
[23] Charny, Ben, "VOIP smuggled into Latin America," CNET News, 3 August 2004.
[24] GATS Telecommunications Annex

was the purpose of the Telecommunications Annex in the GATS. Since then a new terminology has evolved whereby information and communications technologies (ICT) are now seen as the driver of service economies, often termed "information economies", and the driving force being "digital trade." For example, telecommunications policy objectives of the different USA Free Trade Agreements (FTAs) are presented under a number of categories, including e-commerce and intellectual property protection.

An e-commerce template was established by the USA at the outset of the FTA negotiations and accepted in large part in agreements with countries/regions such as Chile, Australia, Singapore, Central America and Bahrain and the recently completed Central America and the Dominican Republic Free Trade Agreement (CAFTA-DR) and in negotiations now in progress. Achieving open markets to the full range of traded services is presented in fully open, unobstructed conditions for cross-border movement of "digital products". These are defined as products delivered electronically that should "receive no less favourable treatment than those for similar products delivered in physical form. As well, the e-commerce template suggests that FTAs "should ensure that firms are not restricted from advanced technologies (hardware, software, technical data or know-how) in the conduct of business." [25] A key element in the CAFTA - DR negotiations was recognition that distance from markets is no longer a key factor in the delivery of many services; however, the availability, quality and pricing of telecommunications and IT infrastructure impact on a country's ability to develop a vibrant market for digital products and services. (Box 3).

Box 3 Digital products supplied/delivered online (CAFTA –DR)

- Advertising Services
- Audiovisual Services
- Computer and Related Business Services
- Education Services
- Financial Services: Banking, Securities, Insurance
- Legal Services
- Multimedia Information Technology
- Professional Services: Architectural, Accounting, etc
- Telecommunications Services

The specific objectives of market access should "ensure maximum liberalisation in those services that: constitute the infrastructure of the Internet, basic telecommunications, value-added services (on a technology neutral basis including wireline, wireless, cable and satellite), computer and related services, and electronic naming and authentication services." In addition to basic and value-added services, other key services are likely to be integrated into electronic networks in the future. This has many implications far wider than telecommunications infrastructure, according to the USA view, that could be substantially enhanced by market access commitments with regard to

[25] www.ustr.gov

complementary services that may be negotiated on a sectoral basis. These include distribution services, computer and related services, advertising services, express delivery services, and certain financial services all of which are strongly facilitated by telecommunications and whose importance in a services economy is growing (Box 4). These services are some of the most obvious beneficiaries of efficiency gains and global reach provided by electronic networks. A number of WTO members have expressed a deep self-interest in using market access commitments to promote their growth, which again drives demand for - and economic viability of - underlying infrastructure.

Box 4: Complementary services that may be negotiated on a sectoral basis

Distribution Services are one of the early adopters of efficiency gains inherent in electronic networks. Whether retail distribution of consumer goods, wholesale distribution between businesses or the establishment of electronic exchanges for either consumers or producers, the growth prospects for all countries based on better use of information and the ability to quickly reach a broader range of participants is strong.

Advertising Services are becoming a key element in the business model of many network services. The ability to integrate advertising services into these networks is an important element in their sustainability. In addition, these services are critical in effectively informing consumers.

Express Delivery Services are both a user and driver of electronic networks – using networks to ensure efficient movement and tracking of freight, and driving broader use of networks by being seamlessly integrated into many commercial sites, whose inability to deliver physical products quickly could determine one of their key advantages: timeliness.

Computer and Related Services: are becoming increasingly network-oriented as computers are being integrated into seamless networks, computer and related services. Growth of such services thus parallels growth of networks, and likewise, network growth is enhanced by broad-based availability of the computer and related services that support an economy's computer infrastructure.

Financial Services have long been pioneers in the use of electronic networks, and will continue to drive much of the demand for network services. In addition, like express services, some financial services are increasingly being integrated into network-based services of commercial suppliers, providing a new level of convenience and efficiency for retail and wholesale customers alike. For example, innovative payment systems play an important role in the functioning of business-to-business networks.

Opening the frontier for the supply of services on a cross-border basis, where once economically not viable, will provide long-term opportunities across a broad range of sub-sectors, from training, health care, professional services, and all services related to the supply of digitalised content.

The US Coalition of Service Industries (USCSI), which is described in greater detail below, has been highly pro-active in negotiations of FTAs. It prepared a

Guidebook of Services Priorities for the CAFTA-DR[26]. Its position on e-commerce urged that CAFTA-DR include the ground-breaking provisions on digital products which are contained in the USA Singapore FTA of 2003. These apply to trade-liberalising provisions involving e-commerce affecting goods, services and intellectual property as well as binding principles that support the maintenance of open markets for e-commerce. The USCSI urged that the following provisions be introduced into all FTAs, and in the WTO Doha Round negotiations:

a. There should be maximum liberalisation in services that: (i) constitute the infrastructure of the Internet, namely, basic telecommunications, value-added services (on a technology neutral basis), computer related services and electronic naming and authentication services; (ii) facilitate e-commerce, including financial (online payments), distribution, advertising, and express delivery services; and (iii) are traded electronically, including accounting and educational services;

b. FTAs should provide binding principles with commitments to: (i) avoid the creation of any unnecessary barriers to e-commerce; (ii) provide products delivered electronically no less favourable treatment than that for similar products delivered in physical form; and (iii) ensure, where regulations are necessary, that they are at least as trade-restrictive as possible; and

c. With respect to intellectual property, FTAs should: (i) provide maximum liberalisation of the distribution of intellectual property-based content including software and audio-visual products; (ii) adopt and ensure full compliance with existing international intellectual property accords including the WIPO digital treaties; and (iii) provide effectively and timely implementation of TRIPS, including copyright term extension and limitations on liability for Internet service providers.

d. Related Provisions: FTAs should ensure that customs valuation for digitised products delivered on a physical medium is based solely upon the valuation of the carrier medium; and require participation in the Information Technology Agreement (ITA) that lowers tariffs on inputs used to build networks and devices required to access these networks for e-commerce.

I.5 Barriers to investment in ICT

I.5.1 Introduction

What are the main barriers to growth, investment and export for the ICT sector in CARICOM member states? Amongst the most important of these are the high prices that Caribbean users must pay for telecommunication services, weaknesses in the organization and functioning of the regulatory institutions in the region; deficiencies in the legal and regulatory frameworks of some countries and territories; the absence of harmonised policies and regulations in the region

[26] See www.uscsi.org

and barriers which make provision of cross-border financial services and e-commerce much more difficult.

The recommendations at the end of this Report and in the Green Paper address these barriers.

I.5.2 Price of telecommunications services in the Caribbean

One of the most important barriers to the development of the Information Society in the Caribbean has been and continues to be the high retail (international calling, Internet access) and wholesale prices (leased lines, interconnection, telephone ports, 1-800 numbers, etc.) for telecommunications services. These impact not only telecommunications and ICT services but also traditional industries such as tourism and agriculture on which the Caribbean continues to be very dependent as producers of goods and services simply pass on to their customers the high prices they have to pay for the telecommunications services they have to buy.

The following presents a brief overview of retail and wholesale prices of telecommunications services in the Caribbean[27].

a. Retail prices

Telephone subscribers in the Caribbean continue to pay orders of magnitude more for domestic long distance and especially international calls than subscribers in North America and elsewhere where there is competition. Table 4 compares current telephone calling charges to selected overseas destinations from various Caribbean countries with charges to the same destinations from Canada and the USA. While the rates in this table may not always be strictly-speaking comparable because daytime, non-discounted rates in the Caribbean countries are compared with discounted rates in the USA and Canada, they do nevertheless underline the significant differences between the two regions.

[27] Price information for this study was obtained from: published tariffs of operators and service providers either directly from them or via the Internet; regulators, users and market intelligence sources; C&W's Reference Interconnection Offers (RIO) in Barbados and Jamaica; and price related studies of organizations such as the European Commission and the Organization for Economic Cooperation and Development (OECD). Time did not permit study of another important area, namely, pricing in the cellular mobile (retail and wholesale) market.

Table 4: Comparison of International Telephone Calling Charges from Various Countries in the Caribbean to Some Selected Destinations (in US$/min.)

Country from where call originates	Service provider	Destination of call								
		Caribbean				North America		Rest of World		
		Anguilla	Jamaica	St. Lucia	T&T	USA	Canada	UK	France	Brazil
Any	Skype (computer to computer)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Skype (computer to telephone)	0.18	0.13	0.26	0.16	0.02	0.02	0.02	0.02	0.06
	Vonage	0.19	0.12	0.23	0.14	0.00	0.00	0.04	0.04	0.09
Canada	Goldline (anytime)	0.23	0.14	0.21	0.16	0.02	0.02	0.02	0.04	0.09
USA	MCI (anytime)	0.61	0.52	0.41	0.35	0.05	0.05	0.07	0.08	0.15
Anguilla	Cable & Wireless (Anytime)		0.67	0.67	0.67	0.67	0.67	0.67	0.89	0.89
The Bahamas	BTC (reduced)	0.70	0.66	0.70	0.70	0.51	0.54	0.89	0.89	0.89
	BTC (regular)	2.25	2.25	2.25	2.25	0.99	1.25	2.75	2.75	2.75
Barbados	C&W (daytime)	0.40	0.40	0.40	0.40	0.65	0.65	0.65	0.75	1.00
	C&W (evening)	0.23	0.23	0.23	0.23	0.50	0.50	0.50	0.60	0.75
Belize	BTL DD Peak	1.10	1.10	1.10	1.10	0.70	1.10	1.50	1.50	1.10
	BTL 10-10-199 off peak	0.62	0.62	0.62	0.62	0.39	0.62	0.84	0.84	0.62
Guyana	GT&T (peak)	0.51	0.73	0.51	0.40	0.56	0.75	0.76	1.91	1.51
	GT&T (off peak)	0.36	0.51	0.36	0.28	0.50	0.52	0.69	1.33	1.06
Jamaica	Digicel	0.29	0.29	0.29	0.29	0.29	0.29	0.29	0.29	0.29
	Cable & Wireless (Anytime)	0.26	0.26	0.26	0.26	0.26	0.26	0.26	0.26	0.26
St. Lucia	Cable & Wireless	0.25	0.25		0.25	0.47	0.47	0.47	0.49	0.49
Suriname	Telesur	0.44	0.44	0.44	0.44	0.44	0.44	0.44	0.44	0.44
	Greentone	0.33	0.34	0.36	0.29	0.15	0.18	0.22	0.22	0.22
Trinidad and Tobago	TSTT (daytime)	0.33	0.33	0.17		0.32	0.32	0.32	0.48	0.80
	TSTT (night saver)	0.27	0.27	0.14		0.27	0.27	0.27	0.41	0.68

Source: Own research

In comparison, a recent study on international calling prices in the OECD countries shows that the average price for calls between the 30 countries of the OECD decreased from US $ 1.24/minute in 1993 to US $ 0.33/minute (discounted rate) in 2003. The off peak rate in 2003 was US $ 0.28/minute. The average standard (non-discounted) rate for calls among the 30 countries in 2003 was US $ 0.54/minute. In the USA the average standard rate for international calling to the OECD countries increased from US $ 1.33/minute in 1993 to US $ 2.78/minute in 2003 (109 % increase). During the same period the average discounted rate decreased from the same US $ 1.33/minute to US $ 0.18/minute, a 86 % decrease, which explains why most international calls in the USA and Canada (where there has been a similar decrease in discounted rates) use discounted rather than standard rates.[28]

Telecommunication Services of Trinidad and Tobago (TSTT) has various discount plans among which the 10-10 plan which offers a 40% saving on international calls after the first four minutes. In February 2004 TSTT began offering a Voice over Internet Protocol (VoIP) service at US $ 0.17/min. to any international destination; however, the service is only available using a public pay phone and with a pre-purchased calling card. See http://www.tstt.net.tt/

VoIP such as Skype and Vonage (See Section I.3.1) presents a particularly attractive alternative to long distance and international calling especially where

[28] See: OECD, Trends in International Calling Prices in OECD Countries, Working Party on Telecommunication and Information Services Policies, Committee for Information, Computer and Communications Policy, DSTI/ICCP/TISP(2003)2/Final, 19 Dec 2003.

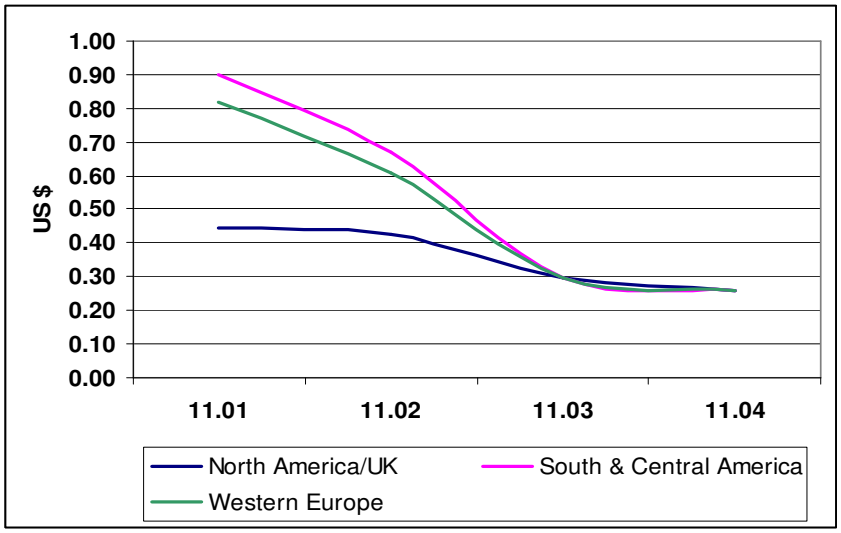
prices on the public switched network continue to be high and where access to high speed Internet at reasonable prices is becoming more readily available. This is the case in The Bahamas where the incumbent's rates are still very high even after substantial discounts and where competition in high speed Internet access (via cable, ADSL, and fixed wireless) is available to most homes at prices which are equal to those in North America. The cable TV operator in The Bahamas is not allowed to offer voice services; however this does not prevent its Internet customers from connecting hard and/or "soft" VoIP telephones to bypass the expensive services of the incumbent.

Monthly line rental and local call charges are by comparison relatively low in most Caribbean countries. For example, in Barbados for US$ 14/month customers pay for their line rental and in addition enjoy unmetered, unlimited calls on the island. In Trinidad & Tobago the monthly rental charge is only TT$ 29 (= US$ 4.57) for residential customers but domestic call charges vary according to the distance and time of day[29]. In The Bahamas calls to subscribers on the same island are free; however, inter island charges are quite high even after BTC's reduced rates are taken into account. It is cheaper for a subscriber in Nassau (New Providence) to use Skype (US$ 0.09/min) or Vonage (US$ 0.10/min) to make a call to someone in Grand Bahamas or Abacco.

The effect of rebalancing in Jamaica, namely, the decrease in C&WJ's international calling charges and the concurrent increase in line rental charges for residential and business lines where the telecommunications market has been completely open since March 2003 is shown in Figures 5 and 6.

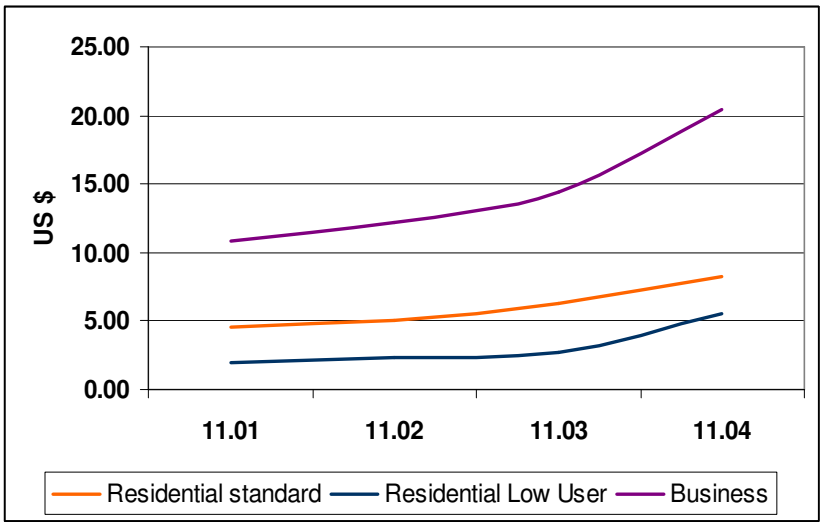
[29] A call from Port of Spain to Scarborough on the island of Tobago costs US$ 0.11/minute during the day and half that at night. For shorter distances calls can be as cheap as US$ 0.01/minute and for a local call in Port of Spain there is a one time charge of US$ 0.04 irrespective of the length of the call or when it is made.

Figure 5: Jamaica: Evolution of C&W's international calling charges (in US$/min)



Source: C&W (Jamaica)

Figure 6: Jamaica: Evolution of C&W's line rental charges (in US$/month)



Source: C&W (Jamaica)

The price of Internet access especially high speed for small and middle sized businesses (and also individuals) is an important part of the cost of doing business. Tables 5, 6 and 7 compare prices for entry level (up to 256 Kbps down load), middle level (up to 1,024 Kbps download speed) and high speed broadband (1,544 Kbps and higher download speed) Internet access in several CARICOM member states and other countries in Latin America, Europe and North America. In the Caribbean only in Barbados and The Bahamas can one find prices which are comparable with those charged in North America, Europe and other competitive markets. In The Bahamas Coralwave, the subsidiary of Cable Bahamas, the cable TV operator offers its Jazz service with download speeds of up to 1 Mbps for US$ 21.70/month. C&W's entry level service in Barbados is costs US$ 31 and offers only a maximum of 256 Kbps download speed.

Table 5 Comparison of Monthly Charges for Entry Level Broadband Internet Access (installation and activation not included)

Country	Service Provider	Service	Techn.	Speed (Kbps)		US $/month	Features
				Down	Up		
Switzerland	Swisscom	Bluewin ADSL 150	ADSL	150	50	7.40	+ $ 2/hour of usage ; 5 e-mail addresses, anti virus, spam filter, etc.
Colombia	Colombia Telecom	Plan Velocidad 256	ADSL	256	128	14.00	
Argentina	Ciudad (Grupo Clarin)	Flash Cablemodem	Cable	128		14.56	Includes anti-spam, anti-virus, technical support, web space, etc.
Finland	Elisa Comm.	Elisa ADSL	ADSL	256	256	21.00	
Colombia	ETB	Banda Ancha 150	ADSL	150		21.30	
Canada	Bell Canada	Basic Lite	ADSL	128		22.40	Cheaper for the first year; certain features such as anti virus, spam filters etc are given free for the first 3 months; better rates can be negotiated
Canada	Rogers	Ultra lite	Cable	128	64	22.50	
Costa Rica	ICE		ADSL	128	64	24.90	
Sweden	Telia	Upp till o,25	ADSL	250	128	25.00	
Chile	Telefonica (CTC)	Speedy 128	ADSL	128	64	26.70	1 year contract
Republica Dominicana	Verizon Dominicana	Internet Flash	ADSL	384	128	29.80	
Barbados	C&W Barbados	ADSL 256	ADSL	256	64	31.60	
Peru	Telefonica del Peru	Speedy	ADSL	200	128	31.90	
Uruguay	Antel	256 Libre	ADSL	256	64	35.80	
Bolivia	COTAS		ADSL	128		39.00	
Jamaica	C&W Jamaica	Classic	ADSL	256	128	40.00	
Cayman Islands	Cable & Wireless Cayman	ADSL 256	ADSL	256	128	48.00	
Cayman Islands	TeleCayman	256/128 unbundled	BWA	256	128	48.00	
Bolivia	AXS	Post Pago	ADSL	256		50.00	
Cayman Islands	WestTel	Speed Saver	BWA	256	256	52.80	
St. Lucia/Grenada	C&W	XNET 256	ADSL	256	128	54.70	
Bolivia	COTAS		ADSL	256		55.00	
Jamaica	N5	Wireless	MMDS	256	128	55.00	
Republica Dominicana	Tricom	Turbo ADSL	ADSL	128	128	57.00	
Belize	Channel Broadcasting	128K	Cable	128	64	60.00	
Belize	BTL	DSL	ADSL	128	64	60.00	
Trinidad & Tobago	TSTT	Residential High Speed Access	ADSL	256	64	72.55	
Jamaica	Kasnet	Res. Silver	MMDS	256	128	75.00	
Republica Dominicana	Tricom	Turbo ADSL	ADSL	256	256	82.50	
Antigua & Barbuda	C&W	Select	BWA	256	64	91.40	
Trinidad & Tobago	TSTT	Business 1	ADSL	128	64	181.39	

Table 6 Comparison of Monthly Charges for Middle Range Broadband Internet Access (installation and activation not included)

Country	Service Provider	Service	Techn.	Speed (Kbps)		US $/month	Features
				Down	Up		
Bahamas	Coralwave	GEO	Cable	1,000	256	10.70	Limited to 10 hrs/month
USA	Verizon		ADSL	768	128	15.00	1 year contract
Bahamas	Coralwave	Jazz	Cable	1,000	256	21.70	No time limited
Germany	Deutsche Telecom	T-DSL 1000	ISDN (?)	1,024	128	21.80	
Argentina	Ciudad (Grupo Clarin)	Flash ADSL	ADSL	640		24.30	Includes anti-spam, anti-virus, technical support, web space, etc.
Canada	Videotron	Basic Internet	Cable	600	128	24.30	1 year contract; limited to 1 GB in each direction
Finland	Elisa Comm.	Elisa Adsl	ADSL	1,000	512	29.00	
France	FT	Internet 512	ADSL	512	128	30.00	
Canada	Bell Canada	Basic	ADSL	1,000		31.30	Cheaper for the first year; certain features such as anti virus, spam filters etc are given free for the first 3 months; better rates can be negotiated
Canada	Rogers	Highspeed Lite	Cable	1,000	128	31.50	
Argentina	Ciudad (Grupo Clarin)	Flash Cablemodem	Cable	1,000		34.20	Includes anti-spam, anti-virus, technical support, web space, etc.
El Salvador	CTE Telecom	Turbonet	ADSL	512		35.00	Does not include sales tax.
Colombia	Colombia Telecom	Plan Velocidad 1,024	ADSL	1,024	512	37.20	Includes anti spam and a number of other additional services
Venezuela	CANTV	ABA	ADSL	512	128	38.70	Taxes not included
Jamaica	C&W Jamaica	Delux	ADSL	1,024	256	40.00	
Colombia	ETB	Banda Ancha 600	ADSL	600		41.40	
Peru	Telefonica del Peru	Speedy	ADSL	600	256	45.80	
Chile	Telefonica (CTC)	Speedy 600	ADSL	600	128	46.20	1 year contract
Venezuela	CANTV	ABA	ADSL	1,024	512	47.40	Taxes not included
Republica Dominicana	Verizon Dominicana	Internet Flash	ADSL	768	512	49.80	
Chile	Telefonica (CTC)	Speedy 1 Mbs	ADSL	1.024	256	56.90	1 year contract
Colombia	ETB	Banda Ancha 1000	ADSL	1,000		58.00	
Cayman Islands	WestTel	Bronze	BWA	512	256	64.80	
Cayman Islands	TeleCayman	512/256 unbundled	BWA	512	256	69.60	
Cayman Islands	Cable & Wireless Cayman	ADSL 512	ADSL	512	256	70.80	
Costa Rica	ICE		ADSL	512	128	72.30	
St. Lucia	C&W	XNET 512	ADSL	512	128	73.00	
Grenada	C&W	XNET 512	ADSL	512	128	73.00	
Cayman Islands	WestTel	Silver	BWA	1,024	512	76.80	
Uruguay	Antel	768 Empresariales	ADSL	768	192	78.18	

Table 6 Comparison of Monthly Charges for Middle Range Broadband Internet Access (installation and activation not included)

Country	Service Provider	Service	Techn.	Speed (Kbps)		US $/month	Features
Barbados	C&W Barbados	ADSL 768	ADSL	768	128	86.30	
Bolivia	AXS	Post Pago	ADSL	512		95,00	
Costa Rica	ICE		ADSL	1,024	256	98.30	
Peru	Telefonica del Peru	Speedy	ADSL	1200	256	103.80	
Bolivia	AXS	Post Pago	ADSL	768		120.00	
Republica Dominicana	Tricom	Turbo ADSL	ADSL	512	512	132.00	
Grenada	C&W	XNET 768	ADSL	768	256	139.10	
Antigua & Barbuda	C&W	Premium	BWA	512	128	183.10	
Uruguay	Antel	1,024 Empresariales	ADSL	1,024	256	192.50	
Bolivia	COTAS		ADSL	1,024		195.00	
St. Lucia	C&W	XNET 1544	ADSL	1,544	512	219.80	
Belize	BTL	DSL	ADSL	1025	256	265.00	
Grenada	C&W	XNET 768 (Business)	ADSL	768	256	307.90	
Antigua & Barbuda	C&W	Delux	BWA	1,024	256	366.60	
Trinidad & Tobago	TSTT	Business 4	ADSL	512	128	481.59	

Table 7 Comparison of Monthly Charges for Upper Range Broadband Internet Access (installation and activation not included)

Country	Service Provider	Service	Techn.	Speed (Kbps)		US $/month	Features
				Down	Up		
Germany	Deutsche Telecom	T-DSL 2000	ISDN (?)	2,048	192	25.60	
USA	Verizon		ADSL	3,000	768	30.00	1 year contract
USA	Comcast		Cable	6,000	768	30.00	
Germany	Deutsche Telecom	T-DSL 6000	ISDN (?)	6,016	576	32.00	
UK	British Telecom	BT Broadband Option 1	ADSL	8,000		33.50	2 GB monthly maximum; 1 yr contract, anti phishing, anti virus, spam filter, etc.
Spain	Jazztel	Hasta 20 M	ADSL	20,480	1,024	35.00	
Argentina	Ciudad (Grupo Clarin)	Flash ADSL	ADSL	2,500		37.60	Includes anti-spam, anti-virus, technical support, web space, etc.
Bahamas	Coralwave	Lite	Cable	2,000	512	37.70	
Canada	Bell Canada	Sympatico	ADSL	3,000	800	38.00	
Germany	Deutsche Telecom	T-DSL 16000	ISDN (?)	16,000	1,024	38.40	
Switzerland	Swisscom	Bluewin ADSL 2000	ADSL	2000	100	40.20	5 e-mail addresses, anti virus, spam filter, etc.
Canada	Rogers	Highspeed express	Cable	5,000	384	42.30	
UK	British Telecom	BT Broadband Option 2	ADSL	8,000		42.80	6 GB monthly maximum; 1 yr contract, anti phishing, anti virus, spam filter, etc.
Canada	Bell Canada	High speed Ultra	ADSL	5,000		44.80	Cheaper for the first year; certain features such as anti virus, spam filters etc are given free for the first 3 months; better rates can be negotiated
Canada	Rogers	Highspeed extreme	Cable	6,000	800	45.00	
Jamaica	C&W Jamaica	Business Delux	ADSL	2,048	512	50.00	
Argentina	Ciudad (Grupo Clarin)	Flash ADSL	ADSL	5,000		50.40	Includes anti-spam, anti-virus, technical support, web space, etc.
Bahamas	Coralwave	Groove	Cable	3,000	768	55.70	
UK	British Telecom	BT Broadband Option 4	ADSL	8,000		55.80	40 GB monthly maximum; 1 yr contract, anti phishing, anti virus, spam filter, etc.
Switzerland	Swisscom	Bluewin ADSL 3500	ADSL	3500	300	56.60	5 e-mail addresses, anti virus, spam filter, etc.
Canada	Videotron	Extreme high speed	Cable	10,000	900	58.50	1 year contract
Chile	Telefonica (CTC)	Speedy 2 Mbs	ADSL	2,048	256	69.30	1 year contract
Republica Dominicana	Verizon Dominicana	Internet Flash	ADSL	1,536	128	70.30	
Canada	Videotron	Extreme plus	Cable	16,000	1,000	72.10	1 year contract
Barbados	C&W Barbados	ADSL 256	ADSL	1,544	256	108.10	
Cayman Islands	WestTel	Gold	BWA	1,544	512	112.80	

Table 7 Comparison of Monthly Charges for Upper Range Broadband Internet Access (installation and activation not included)

Country	Service Provider	Service	Techn.	Speed (Kbps)		US $/month	Features
Cayman Islands	TeleCayman	1.5/512 unbundled	BWA	1,544	512	117.60	
Cayman Islands	Cable & Wireless Cayman	ADSL 1544	ADSL	1,544	512	118.80	
Colombia	ETB	Banda Ancha 2000	ADSL	2,000		124.50	
Venezuela	CANTV	ABA	ADSL	1,536	512	163.30	Taxes not included
Dominica	C&W	XNET 1544	ADSL	1,544	512	183.10	
Costa Rica	ICE		ADSL	2,048	256	204.50	
St. Lucia	C&W	XNET 1544	ADSL	1,544	512	219.80	
St. Vincent & The Grenadines	C&W	XNET 1544	ADSL	1,544	512	238.20	
Republica Dominicana	Tricom	Turbo ADSL	ADSL	1,536	768	244.40	
St. Kitts & Nevis	C&W	XNET 1544	ADSL	1,544	512	256.00	
Grenada	C&W	XNET 1544	ADSL	1,544	512	256.50	
Antigua & Barbuda	C&W	XNET 1544	ADSL	1,544	256	292.50	
Antigua & Barbuda	C&W	XNET 1544 (Business)	ADSL	1,544	256	421.70	
Grenada	C&W	XNET 1544 (Business)	ADSL	1,544	256	440.00	
Trinidad & Tobago	TSTT	Business 6	ADSL	1,544	256	682.93	

b. Wholesale prices

Even more important for ICT and other businesses is the cost of leased circuit capacity. Here the differences in prices for users in the Caribbean and in other regions of the world are just as significant as for international telephone calling. For example, an International Private Leased Circuit (IPLC) between Amsterdam and Madrid (~ 1,500 km as the crow flies) costs less than 9 % of a T1 (1.544 Mbps) lease between Kingston (on Maya 1) and Miami (~ 932 km), when compared on *a per Mbps* basis. Trans Atlantic leases cost about $1/10^{th}$ of the price (on a per Mbps basis) of even the cheapest lease of an E1 to Miami from the Caribbean (Belize to Miami). (Table 6). The non Caribbean prices shown in the table are the actual average market prices as of mid 2004. By mid 2005 these prices had decreased more than 15%. The current monthly lease price for an E1 between London and Paris is US$ 425, between London and New York, US$ 625 and between Los Angeles and Tokyo, US$ 1,350

Table 8: Comparison of prices for international private leased circuits (IPLC) on fibre optic cables (US $)[30]

Route		Distance* (km)	Capacity/Speed		Avg. price/month (US $)		
			Type	Mbps	per circuit	per Mbps	per Mbps per km
Intra Europe							
Frankfurt - London		634	E1	2.048	593	290	0.46
London - Paris		634	E1	2.048	603	294	0.46
London - Madrid		1,261	E1	2.048	879	429	0.34
Frankfurt - Madrid		1,434	E1	2.048	963	470	0.33
Amsterdam – Madrid		1,477	E1	2.048	981	479	0.32
Trans Atlantic							
London - New York		5,585	E1	2.048	812	396	0.07
New York - Paris		5,850	E1	2.048	922	450	0.08
Frankfurt - New York		6,215	E1	2.048	943	460	0.07
Trans Pacific							
Hong Kong – Los Angeles		11,640	E1	2.048	1,992	973	0.08
Sydney - Los Angeles		12,049	E1	2.048	5,058	2,470	0.20
Mumbai - New York		12,566	E1	2.048	6,932	3,385	0.27
Bangalore - New York		12,049	E1	2.048	7,642	3,731	0.31
Europe to Asia							
Hong Kong – London		9,740	E1	2.048	3,537	1,727	0.18
London - Mumbai		7,205	E1	2.048	8,576	4,188	0.58
Bangalore - London		7,939	E1	2.048	12,118	5,917	0.75
Caribbean							
Belize City - Miami (Arcos 1)	3		E1	2.048	10,000	4,883	
Kingston - Miami (Maya 1)	2	932	E1	2.048	10,500	5,127	5.50
Bahamas - Miami	1	288	E1	2.048	10,853	5,299	18.40
Kingston - Miami (Maya 1)	2	932	T1	1.544	8,700	5,635	6.05
Paramaribo - Miami	1	3,550	E1	2.048	17,409	8,500	2.39
Paramaribo - Miami	1	3,550	T1	1.544	14,620	9,469	2.67
Georgetown - Miami	1	3,162	1/2 E1	0.512	5,950	11,621	3.68
Barbados – Miami	1	2,584	T1	1.544	23,900	15,479	5.99
Barbados – Miami	1	2,584	E1	2.048	31,900	15,576	6.03
St Lucia - Miami	1	2,414	E1	2.048	31,900	15,576	6.45
St Vincent & The Grenadines - Miami	1	2,431	T1	1.544	31,667	20,510	8.44
Barbados - London	1	6,777	E1	2.048	62,000	30,273	4.47
St Lucia - London	1	6,816	E1	2.048	63,037	30,780	4.52
St Vincent & The Grenadines - London	1	6,886	T1	1.544	49,407	31,999	4.65
Barbados - London	1	6,777	T1	1.544	49,600	32,124	4.74

1. full circuit, includes local loop
2. international half circuit, w/o local loop
3. for data only (no voice allowed)

Source: Own research for Caribbean routes; TeleGeography/PriMetrica Bandwidth Pricing Database, Fourth Quarter (2003) Report for the other routes and TIM Perú for Lima to Miami lease price.

[30] Not all prices in this table are strictly speaking comparable because: (i) the current market prices shown for routes other than in the Caribbean are for leases between points of presence (pops) and do not include the local loop (i.e. the connection to the customer's premises) which in the Caribbean at least can be quite high. For the Caribbean some of the prices shown do include the local loop, at least on the Caribbean side as these are generally provided by the same operator (Cable & Wireless) that also provided the international link; (ii) prices for some routes in the Caribbean do in fact include IP Transit; that is, connection to the Internet in Florida or New York. These can be offered at lower prices because capacity is shared among several customers; (iii) some of the Caribbean offerings are only for ½ circuits; that is without the lease of the distant half which is provided by another operator. The tables do nevertheless indicate that there are significant price differences for leased circuit capacity in the Caribbean and elsewhere where there is competition in this area.

An operator, service provider, Internet Service Provider (ISP) or user must very often also lease, in addition to an International Private Leased Circuit (IPLC), capacity between its own premises and the cable station, international gateway or where the international facility terminates, referred to as a "local loop". In Barbados and St. Vincent the cost for this can be significant. By comparison Bandwidth Market, an on-line trader of bandwidth, is offering two DS-3 (44.736 Mbps) circuits between New York and Chicago for the same price that it costs to lease a local T1 in St Lucia[31].

Table 9: Prices for domestic leases (in US$)

Country	Operator	Capacity/Speed		Avg. price/month (US	
		Type	Mbps	per circuit	per Mbps
Bahamas (local loop)	BTC	E1	2.048	700	342
Trinidad & Tobago	TSTT	T1	1.544	960	622
Bahamas (island to island)	BTC	E1	2.048	1,600	781
St. Lucia	C&W	E1	2.048	1,667	814
Jamaica	C&W	T1	1.544	1,451	940
Suriname	Telesur	E1	2.048	2,057	1,004
St. Lucia	C&W	T1	1.544	1,556	1,008
Barbados	C&W	E1	2.048	10,853	5,299
St. Vincent	C&W	E1	2.048	22,315	10,896
Barbados	C&W	T1	1.544	20,000	12,953

The OECD has reported that between 1998 and 2001 the price in the USA for leasing a domestic 300 km E1 circuit decreased from about US 1,400/month to US $ 660/month. At about the same time Reuters, the news agency, was paying about US $ 65/month in the UK and a little over US 200/month in the USA for a local E1 lease (distance between the operator's technical centre and the customer's premises estimated to be on the average 3 km)[32]. It is estimated that market prices for leased circuit capacity have decreased between 25 % and 50 % over the last two years.

The high leased circuit prices in the Caribbean represent significant costs to Internet Service Providers (ISPs) who have to access the Internet through IP Transit providers in the USA[33]. Table 8 shows the wholesale price for an Internet transit services from various locations in the Caribbean. The price per Mbps is generally less than for an IPLC because the provider of the bandwidth capacity can share the same capacity among several users which also means that the quality of service and actual capacity which is available at any time varies.

[31] See Bandwidth Market, an on-line market for trading in bandwidth, Internet access, dark fibre, minutes of telephone traffic, collocation, and equipment at http://www.bandwidthmarket.com/index.html or Band-X, a competing on-line market, offering the same services as Bandwidth Market, at http://www.band-x.com

[32] OECD, *Broadband Access for Business*, Working Party on Telecommunication and Information Services Policies, Committee for Information, Computer and Communications Policy, DSTI/ICCP/TISP(2002)3/Final, 04 Dec 2002

[33] The price of access to the internet (IP Transit) can vary between US $ 50 and 200 depending on the amount of capacity contracted.

Table 10: Wholesale prices for internet transit services from various points in the Caribbean (in US $)

Country	Operator	Capacity/Features/Speed			Avg. price/month	
		Type	Features	Mbps	per circuit	per Mbps
Suriname	Telesur	1/2 E1	shared	0.512	1,250	2,441
Belize	BTL	E1	dedicated	2.048	5,683	2,775
Barbados	C&W	E1	shared	2.048	9,350	4,565
Jamaica	C&W	T1	dedicated	1.544	7,436	4,816
Trinidad & Tobago	TSTT	T1	dedicated	1.544	10,400	6,736
St. Vincent	C&W	E1	dedicated	2.048	15,848	7,738
Barbados	C&W	E1	dedicated	2.048	15,850	7,739
St. Vincent	C&W	T1	dedicated	1.544	12,678	8,211
Barbados	C&W	T1	dedicated	1.544	12,680	8,212
Barbados	C&W	T1	shared	1.544	14,190	9,190
Guyana	GT&T	E1	no restoration	2.048	25,600	12,500
Suriname	Telesur	1/2 E1	dedicated	0.512	6,500	12,695
St. Lucia	C&W	1/2 E1	dedicated	0.512	6,500	12,695
Hispasat	Hispasat	E1	100 terminals	2.048	29,900	14,600
Guyana	GT&T	E1	restoration	2.048	31,600	15,430
Guyana	GT&T	T1	restoration	1.544	24,332	15,759

Barbados, St. Lucia and Jamaica, the latter which has actively promoted competition in international circuit capacity, will be connected with the new submarine cables not owned or controlled by C&W in early 2006[34]. In Barbados Antilles Crossing which is building the first phase of its Eastern Caribbean submarine cable system between Barbados, St. Lucia and St. Croix will be connecting this cable with the domestic fibre optic cable of TeleBarbados, which it owns along with the electricity company (Barbados Light and Power Co.), allowing it to offer international bandwidth that completely bypasses the network of the incumbent.

Where there is no or little competition the regulator must ensure that conditions exist for users to obtain the bandwidth capacity that they need under non-discriminatory, transparent conditions and at cost- base prices. Proposed measures to help regulators in this respect include harmonization of conditions for leasing capacity and developing benchmarks along the lines of those presented here. For example, the European Commission's harmonization and benchmarking measures implemented more than 10 years ago have been effective in significantly decreasing leased circuits prices in the European Union.

With respect to the pricing of interconnection the GATS regulatory principles Reference Paper to which several CARICOM Member States have subscribed (See Annex 3) requires that interconnection with the incumbent's domestic and international facilities be provided not only under non-discriminatory terms and conditions, in a timely fashion but also at cost-oriented prices which are reasonable and transparent. Co-owners of international fiber optic cable

[34] FibraLink, a subsidiary of Colombus Communications (which is also the owner of the Arcos 1 cable, the Cable Company of Trinidad & Tobago, and Cable Bahamas) is building a submarine cable which will link Jamaica with the Arcos 1 cable system in the Dominican Republic. It will also provide domestic (festoon) connections for Montego Bay, Ocho Rios and Kingston.

systems[35] must be allowed to interconnect with competing domestic providers of backbone capacity or, alternatively, they must be provided access to and use of the dominant operators backbone facilities on "reasonable and non-discriminatory terms and conditions" as required by the GATS Telecommunications Annex. Governments and regulators have a responsibility to develop policies and regulatory provisions on fair, non discriminatory interconnection, site sharing and collocation[36].

Figure 7 compares fixed termination charges for local calls in Jamaica, Barbados[37], Belize, St Lucia, Grenada, St. Vincent and the Grenadines and various countries of the European Union. These are charges per minute based on the first three minutes of a call at peak time (taxes excluded)[38]. As with prices for leased circuits the European Commission has used benchmarking as an effective tool for regulators to determine whether or not such charges are justified particularly if they do not have the resources or time to do the extensive cost studies that are required to determine such costs[39].

With the exception of Jamaica charges in the Caribbean are still relatively high especially when compared with the EU weighted average of US$ 0.0077 for the 15 pre expansion EU countries (EU (15)) and also when compared with the weighted average of the 23 of the 25 current countries (EU(23)). The EU analysis indicates a strong correlation between the level of charges and the timing of liberalization. Expansion countries such as the Czech Republic, Hungary, and Lithuania which opened their markets later have higher levels of charges than the older members.

[35] For example the Eastern Caribbean Fibre Optic Cable System (ECFS), which lands in most Eastern Caribbean countries and territories, has more than 20 co-owners.

[36] See for example FCC Report 97-208 of 9 June 1997 which specifies 14 cost components for collocation in central offices. The same components can be applied to collocation in submarine cable stations.

[37] For Barbados charges shown are from the original RIO (Phase I, August 2003) and the revised RIO (Phase 2, January 2004) the latter issued after FTC's comments on RIO Phase I (See section above on Barbados)

[38] Caribbean rates have been obtained from C&W's Reference Interconnection Offer (RIO) issued in various countries. European rates can be found in the European Commission's Tenth Report on the Implementation of the Telecommunications Regulatory Package. This report, which is issued each year, serves as a benchmarking tool for the Commission and regulators to determine the appropriateness of interconnection rates proposed by dominant operators (operators with Significant Market Power (SMP) in the European terminology) and as a means for following the evolution of these prices. See Commission of the European Communities, Technical Annexes of the Tenth Report on the Implementation of the Telecommunications Regulatory Package, Brussels, 02.12.04 COM (2004) 759 final

[39] In Botswana last year the regulator, Botswana Telecommunications Authority (BTA), settled an interconnection charging dispute between the fixed line operator, BTC, and one of two mobile operators, Mascom, by relying on EU benchmark rates. In its ruling BTA imposed the following fixed termination rates: before 1 March 2004 peak time = US $ 0.03, off peak time = US $ 0.024; after 1 March 2004, peak time = US $ 0.022, off peak time = US $ 0.0176. See Botswana Mini-Case Study 2003, Recent Experience in Interconnection Disputes, ITU 2003, http://www.itu.int/ITU-D/treg/index.html

Figure 7: Comparison of per minute fixed termination charges for local peak time call charges (in US $)

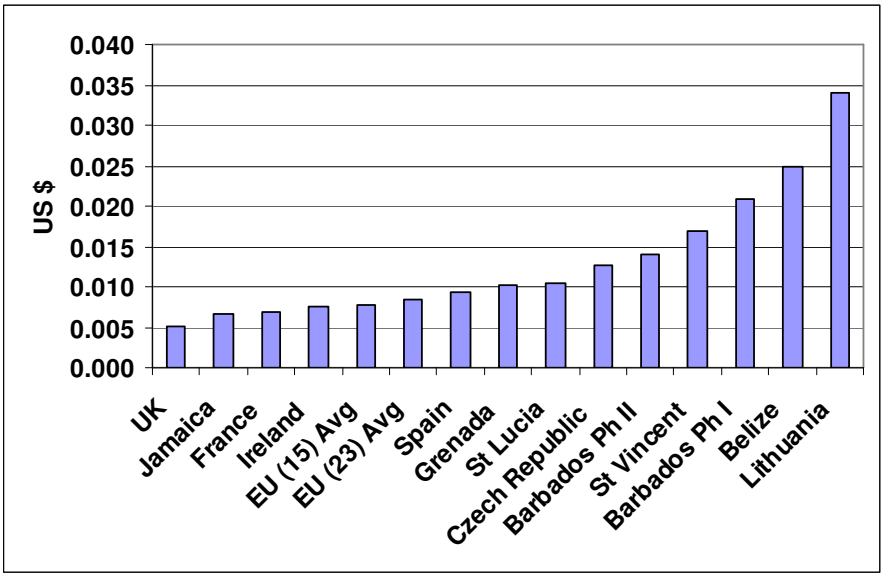
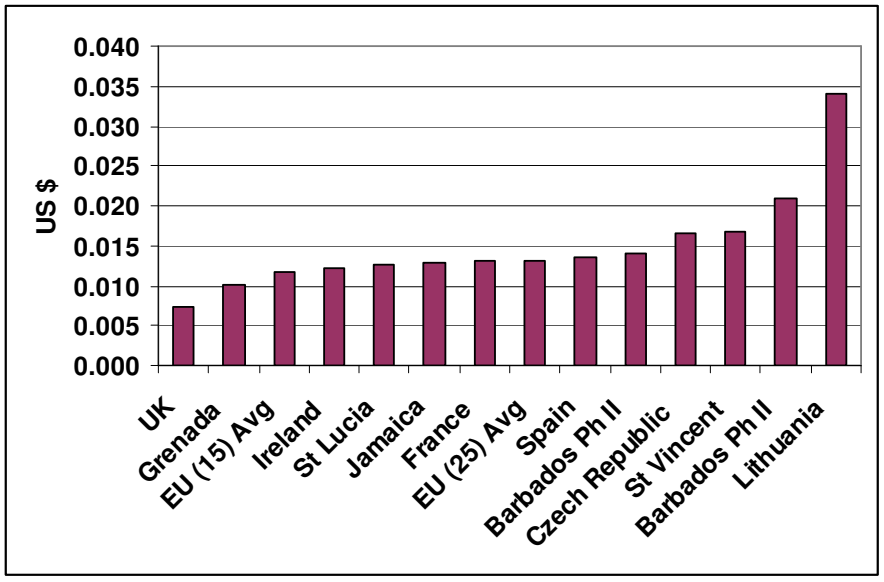


Figure 8: Comparison of per minute fixed termination charges for regional peak time call charges (in US $)



Mobile termination rates in the Caribbean compare quite favorably with those in Europe. In C&W (Jamaica)'s Reference Interconnection Offer, RIO 5 mobile termination rates are US$ 0.105/min during peak times, US$ 0.0862/min during off peak times and US$ 0.0672 during weekends. In Barbados the mobile termination charge payable to third party mobile operators in C&W's RIO Phase II is US$ 0.10/min. By comparison the EU 25 weighted average of fixed-to-mobile interconnection charges for all mobile operators (those with Significant Market

Power or SMP and those without) was € 0.13 (=US$ 0.17) in October 2005 (down from € 0.147/min or US$ 0.19/min in July 2004)[40].

I.5.3 Weaknesses in the organization and functioning of regulatory institutions

In spite of markets having been liberalised in most CARICOM Member States one operator continues to dominate the local fixed access market.

a. Regulating in a competitive environment where one operator is dominant

Following are some anti-competitive practices of dominant operators which by no means are unique to the Caribbean:

- Subsidising competitive services such as Internet access and other value added services with revenues from services not subject to competition;

- Overcharging for capacity on domestic and international fibre optic cable and satellite systems where it continues to control access to the only such facilities available in the country or territory even though there may be multiple owners of the actual cable;

- Refusing to allow access to facilities such as cable landing stations, gateways and towers even though this may be required by law;

- Overcharging for telephone lines and 1-800 numbers which competing ISPs need to offer dial-up Internet access services, making it impossible for these ISPs to compete for services which have little other distinguishing features;

- Refusing to negotiate and otherwise delaying decisions and actions preventing new entrants from interconnecting and beginning to offer a competitive service. In Barbados and Trinidad & Tobago, the incumbent would not negotiate interconnection arrangements or order the necessary interconnection equipment (to be paid for by the new entrants) until the new entrants had been issued their new licences even though the companies which were to be awarded these licences were known months before and there was nothing to suggest that they might not be awarded these licences. In Belize Intelco, the first new entrant went into receivership after having spent US$ 60 million to build a network. It was able to offer only on net and international calls for its customers because it was unable to obtain a physical interconnection form the incumbent.

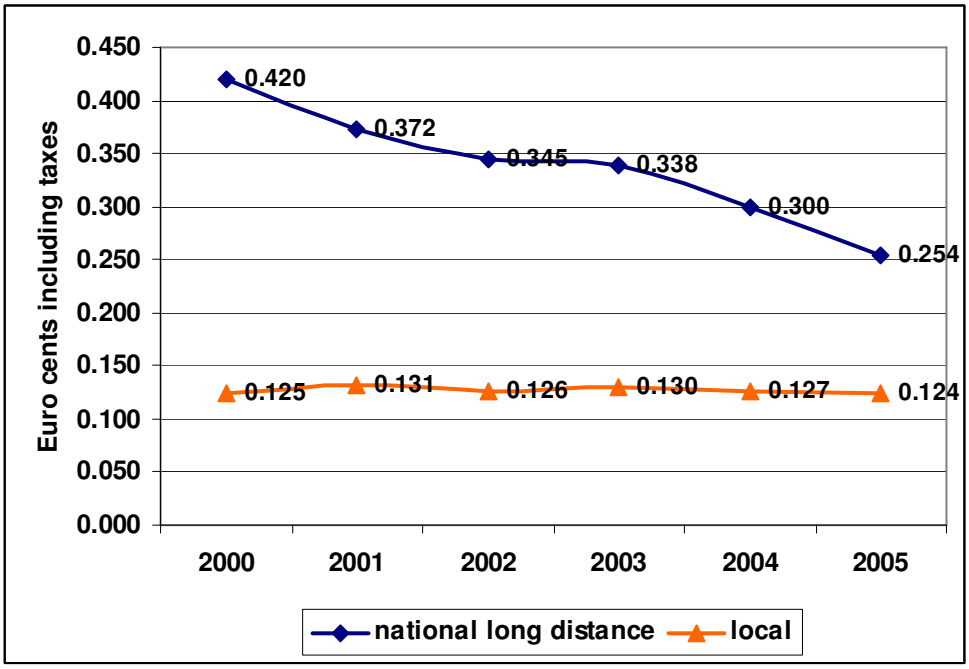
These and other similar practices are especially challenging for the newly established and under resourced regulators in the Caribbean who must confront incumbents such as C&W and large new entrants such as Digicel who have resources and can draw upon experts from across the world. On the other hand most small local or even regional investors have neither the substantial resources required nor the expertise to wage such regulatory and administrative battles.

[40] Commission of the European Communities, Technical Annexes of the Report on European Electronic Communications Regulation and Markets 2005 (11th Report), Brussels, 20.02.2006, COM (2006) 68 final

One way to address this problem is through the establishment of regional mechanisms for sharing of specialised resources; the building, maintenance and using of bases of information and data for benchmarking and precedents in decision making, and a comprehensive programme of training and information exchange for the Caribbean region.

The European Commission has used benchmarking very effectively in comparing performance in the 25 member states in prices, degree of competition (number of players) in each market segment, level of broadband access, etc. These are published every year in a report whose main purpose is to review how well member states are doing in implementing the EU's regulatory framework. Performance is compared among the 25 Member States and also with other regions of the world. Data is obtained from the telecommunications regulators in each country. For example, Figure 9 taken from the 11th Implementation Report published in February 2006 and which shows how the average prices for 3 min. local and national long distance calls has been falling, allows national regulators to measure how national operators and service providers are performing by comparison[41].

Figure 9: European Union: Weighted average of local and national long distance charges for a 3 minute call in the 25 member countries



Source: European Commission

b. Scope for political interference in the regulatory process

In addition to the financial and operational risks of a project an investor places much importance on having stable legal and regulatory structures in a given country the

[41] Commission of the European Communities, Technical Annexes of the Report on European Electronic Communications Regulation and Markets 2005 (11th Report), Brussels, 20.02.2006, COM (2006) 68 final

transparency of the regulatory process and the degree of independence and impartiality of the regulator[42].

With respect to the latter the GATS regulatory principles Reference Paper, which has so far been adopted in part or in whole by 84 of 91 countries (9 out of 11 in the Caribbean) that have scheduled market opening commitments in the sector, only requires that "the regulatory body (be) separate from, and not accountable to, any supplier of basic telecommunications services and that "the decisions of and the procedures used by the regulators … be impartial with respect to all market participants"[43]. There is no requirement that it be independent and impartial with respect to the government whose policy it has to implement and to which it has to report. The possibility of political interference (real or perceived) therefore remains[44]. Transparency in the regulatory decision making process therefore becomes all the more crucial.

In addition CARICOM governments should ensure that regulators have the tools and means to act independently and impartially including: facilitating access to the technical, economic, legal and other staff resources needed to research issues and develop well documented and well prepared decisions; establishing well structured and transparent decision-making procedures in which public participation is encouraged; developing models for decisions which can be understood by the experts as well as the general public and making such decisions available on the government's and regulators' web sites[45], encouraging cooperation among regulators and policymakers in the region for sharing experiences and facilitating wider dissemination of important decisions.

The recommendations in Chapter IV of this Report and the Green Paper suggest ways in which the regulators in the region can be provided with such tools.

c. Insufficient specialised resources

In a remarkably short time some of the newly established regulators in the CARICOM Member States have developed an excellent capacity to deal promptly and efficiently with current regulatory issues. A good example is the FTC in Barbados which has been able to respond in an exemplary manner to difficult issues related to interconnection, numbering and retail prices resulting from the introduction of competition in Barbados.

[42] So that the regulator can supervise the proper functioning of the market with impartiality and avoid being pressured by interested parties, arbitrate and resolve conflicts with the full confidence of all interested parties and protect consumers' rights with impartiality.

[43] See GATS Reference Paper, 4th Protocol. Independence of the regulator is equally important in the legislation of the European Union where the national regulatory authorities in each of the member states have to be "legally distinct and functionally independent of the telecommunications organisations"[43]. In this region the Inter-American Telecommunication Commission (CITEL) underlines in its Guidelines and Practices for Interconnection Regulation the need for the regulator to be independent of all operators and "free from inappropriate political influence", CITEL, Guidelines and Practices for Interconnection Regulation, PCC.I/Res 77 (XI-99), June 1999.

[44] After the unexpected resignation in Barbados of the Chairman of the Fair Trading Commission on 3 December 2003 the Leader of the Opposition was reported as saying that "it was not unreasonable to assume that there was an invisible hand manipulating the affairs of the FTC with Justice King's (The FTC Chairman) resignation following on the heels of Ronald Toppin's" (the former Minister responsible for the FTC), The Barbados Advocate, December 4, 2003

[45] The web site of the FTC in Barbados is a good example of how this should be done. See: http://www.ftc.gov.bb/

The fact remains, however, that the Barbados FTC has suffered from a number of resignations of well-qualified staff during its short existence, many linked to political interference in one form or another. This means that the FTC does not now have, and its counterparts on the other islands are unlikely to have, the required number of the highly specialised staff to regulate a complex, rapidly evolving sector such as telecommunications. The challenge is to find qualified people or young professionals who can be trained if necessary and inserted into the regulatory process, and whose independence of thought and action can be protected where necessary and appropriate in the interest of the continued effectiveness of regulatory systems and processes.

While the telecommunications markets in CARICOM are considerably smaller than those in North and South America and Europe, the difficulties and complexities of the issues are often no less daunting. A basic minimum of specialised resources is required in every regulatory body to function properly and efficiently. This minimum is difficult to achieve in countries with large populations and practically impossible in places with very small populations and very few or no people with the required qualifications. Here again, the problem of insufficient qualified resources can be addressed by jointly developing and implementing a comprehensive programme of resource sharing, information exchange and training. The fact that there are commonalities in language, culture, political systems, legal structures and the way in which the telecommunications sector has evolved in CARICOM should favour such regional approaches.

d. Lack of experience in dispute resolution

New entrants invariably find themselves involved in lengthy and sometimes acrimonious disputes with the incumbent fixed line operator about the terms and conditions of interconnection. Without agreement, these new entrants are unable to offer a service. The incumbent, who has an incentive to delay competition, is often better prepared in dealing with such disputes than either the new entrant or the regulator, who may be asked to mediate or otherwise resolve the dispute. In several cases, new entrants have complained that the regulator was abdicating its responsibility because of its stated preference to have the disputing parties come to an agreement without the regulator's intervention rather than taking a more proactive role in the process as the new entrant would have preferred. The consequences with respect to investment, growth and development of the sector of failure to quickly and effectively resolve disputes can be serious because they result in: delays in the introduction of new services and infrastructure; reductions or stoppages in the flow of capital from investors in the telecom sector; continuing higher pricing and lower quality of service for consumers due to the absence of competition; and delays in sectoral liberalisation and with it general economic and technical development[46].

While a negotiated approach to dispute resolution has several advantages (i.e. less adversarial, less dependent on the resources of the regulator) there are disadvantages especially in the Caribbean where the difference in the market power and available resources between the parties to disputes can be significant and the dominant player has no incentive to resolve a dispute when it is not in its interest to

[46] Bruce, Robert R. Rory Macmillan, et al, Dispute Resolution in the Telecommunications Sector: Current Practices and Future Directions, International Telecommunication Union and World Bank, December 2003

do so. Other forms of dispute resolution such as regulatory adjudication, mediation, and arbitration or a combination of negotiation and these other techniques are probably more appropriate for the Caribbean.

The same sort of regional mechanisms that are suggested for overcoming some of the other barriers could also be used to help CARICOM regulators develop an effective dispute resolution capability. They might, inter alia, include: a database with a special portal to give regulators access to previous decisions and procedures in resolving disputes in the telecommunications sector; a comprehensive CARICOM programme of training and resource sharing; and the creation of a regional panel or bank of arbitrators and mediators from which regulators could draw in cases where alternate dispute resolution (mediation and arbitration) options have been selected.

I.5.4 Unpredictable and sometimes unstable regulatory frameworks

Unpredictable and sometime unstable legal and regulatory environments and the absence of harmonised regulations and policies are other types of barriers to investment, growth and market generation.

Private investors and lending institutions attach high-risk premiums to investments in countries where the legal and regulatory frameworks are unpredictable and unstable[47]. Cases have been reported in some CARICOM member states where investors have delayed decisions to invest or have decided not to invest at all after failing to be convinced that there was a certain degree of predictability in the country's legal and regulatory framework and institutions.

Following are factors which contribute to making regulatory frameworks in the Caribbean unpredictable and unstable:

- Absence of a well-defined and publicly known timetable and conditions for the transition from a monopoly to a fully liberalised market including information about the number of licences to be awarded, conditions for awarding of licences, and timeframe for decisions to be rendered. The process was particularly drawn out and subject to much uncertainty in Trinidad & Tobago. In Suriname the process to open the market has been characterized by much uncertainty and especially a high degree of informality[48];

- Licensing procedures where not all conditions and obligations have been clearly described. An investor who obtained a licence to construct and land a new submarine cable in Barbados had to wait another six months to get a licence which would allow him to operate it;

[47] There are two important characteristics which distinguish such investments from many others. First, the decision to invest is usually based on a calculation of the expected return on investment over a 7-10-year period and the predicted value of that investment at the end of this period (terminal value) and, secondly, the installed assets are fixed and are not movable.

[48] Call for bids for the awarding of two or three mobile and one or two fixed telephone licences was made at a press conference in August 2002. There was no formal public announcement in the Official Journal or other government document. Criteria by which the Ministry was to evaluate the bids were issued only after some 25 expressions of interests had been received. There was no formal process for receiving and responding to questions. These were done more on an individual than a collective basis and there was no formal process of acknowledging receipt. No decision has yet been taken.

- Fragmentation and inconsistencies among the various legal and regulatory instruments as, for example, they may relate to interconnection, licensing, universal services, and pricing. In Guyana, for example, there are inconsistencies among the basic legal instruments governing the sector. This results in confusion and regulatory gridlock[49];

- Overlapping and sometimes conflicting responsibilities among the various organs that regulate as for example the sector specific regulator, the fair trading commission and one or several government departments. Operators and service providers in Jamaica, Barbados and the ECTEL member countries have complained that their licence applications or regulatory decisions had been delayed because of the lack of coordination between or among the various bodies responsible for regulating and issuing authorisations;

- Deficiencies in the legal structure and organisation of the regulatory body whereby it may be difficult to avoid conflicts of interest, to ensure transparency of the regulatory process, and to appeal decisions of the regulator;

- Absence of a clearly defined, well structured, and transparent process for defining policy for the sector in which there is a prominent place for public consultation. Often government policies are drafted without participation or knowledge of the public and most stakeholders. In Guyana, where the incumbent has a 40 year monopoly for all national and international fixed telephone services, the government recently drafted a new telecommunications policy and law without ever submitting it to the public for comment. Neither has so far been made public.

The important recommendation which can be made in this respect is to implement programmes to raise awareness among government officials and regulators in CARICOM, who are keen to attract private investment in telecommunications and the ICT sector, about the implications for investors of having unpredictable and unstable regulatory environments and the financial risks associated with them.

I.5.5 Absence of harmonised policies and regulations in the region

Digicel, the Irish cellular mobile operator, fibre optic cable operators, Antilles Crossing and Columbus Communications[50] and others have important regional investment plans. If laws, regulations, procedures, and conditions were harmonized in the region and if

[49] The Telecommunications Act, 1990 and GT&T's Licence were based respectively on the British Telecommunications Act of 1984 and the British Telecommunications PLC Licence also of 1984 whereas the Purchase Agreement (for GT&T) and the Public Utilities Commission Act are based on US and North American jurisprudence. The provisions in the Telecommunications Act do not deal adequately with new types of services such as Internet

[50] Barbados-based Columbus Communications Inc. has controlling interests in a number of telecommunication and cable TV operators in the Caribbean. including: (i) 100% of New World Networks, which in turn owns 88.2 % of the 8,200 km Americas Region Caribbean Optical-ring System (ARCOS), the other owners being operators such as MCI Worldcom, AT&T, Cable & Wireless, Avantel, CANTV and Verizon.; (ii) 30% of Cable Bahamas Ltd., which currently is the only cable television TV operator in The Bahamas and which in addition to television provides high speed Internet access; (iii) 30% of Caribbean Crossings, a Cable Bahamas subsidiary, which operates a 1,000-kilometer submarine fibre optic cable system linking the Bahamas and the United States; (iv) Merit Communications Ltd., a facilities-based broadband data communications provider in Jamaica; and (v) FibraLink Jamaica, also a subsidiary of Cable Bahamas, which is currently constructing a submarine cable connecting Jamaica to the Arcos cable system in the Dominican Republic.

there were good coordination among authorities in the different countries and territories to grant authorisation for such a Caribbean wide system, their business decisions would be greatly simplified, their transaction costs reduced and the chances of their projects being successful would be increased[51]. Harmonising and simplifying the licensing conditions for value-added, closed user group, and some other non-basic services so that only registration, notification or nothing is required in all CARICOM Member States would attract more local entrepreneurs and capital. In the area of spectrum management, harmonisation of frequencies for unlicensed use such as WiFi, WiMAX and other broadband wireless access (BWA) standards would promote the development of these new technologies while regional policies on type approval would lead to reduced costs of terminal equipment. Common measures to determine dominance and a common set of requirements imposed on dominant carriers, such as the need to produce standard Reference Interconnection Offers, would be of great benefit to dominant operators as it would be also to new entrants. Also, investors would save in administration costs if application forms for licences, authorisations and permissions were common across the region. Harmonisation should extend to rules, regulations, and procedures for interconnection, treatment of dominant operators and service providers, universal service policies, conditions for leasing capacity and spectrum management. It might also extend to harmonization in universal access and universal service definitions, policies and programs.

Harmonisation would also benefit policymakers and regulators through a simplification of their day-to-day functions and enhance the scope for regional cooperation including the development of common positions for the region in free trade negotiations and in international technical fora such as those dealing with the allocation of frequencies and numbers. Harmonisation would help in preventing competitive distortions across the Caribbean and would make training of regulators' and policy makers' staff more efficient, effective and economical[52]. Users ultimately benefit because the services they buy would be provided more economically. Having common standards would also make it easier for them to use their devices across the Caribbean seamlessly.

A specific example where harmonization has been very effective is the European Commission, which in 1992 identified a lack of choice and high prices of leased circuit capacity as an important barrier to investment and development of the telecommunications sector in Europe and by extension to region integration, issued a directive to harmonise conditions including tariffs (which must be cost-oriented and transparent), technical characteristics, supply and usage conditions, and licensing requirement for the provisions of leased lines in the then 12 member states of the European Union[53]. Harmonisation and liberalization directives were part of a wider policy of establishing a European single market for goods and services. The were a top priority of the architects of integration. The objective was to encourage regional investments by

[51] Today an investor who wants to build a submarine cable system connecting several points in the Caribbean has to deal with different rules and conditions in getting authorizations to construct and operate the cable in each country. For example, one investor in a submarine cable network figured he could have saved about US$ 2 million in marine costs if he would have received construction licences for all potential landing points in time. There was the additional cost of sending the cable-laying ship back to pick up the extra cable required to connect the country where the granting of the licence was delayed.

[52] See: Michele Thomas, "The Benefits of regional harmonisation in Spectrum Management ", presented at the 10th CTU Policy Seminar, Port of Spain 18-19 October 2005.

[53] Council Directive 92/44/EEC of 5 June 1992 on the application of open network provision to leased lines.

having member states adopt and implement harmonised laws, regulations and procedures which these directives prescribed.

Whether such harmonisation measures are applied to promoting economic integration or simply to promote regional cooperation there are lessons to be learned from the European experience. By mutually agreeing to apply harmonisation measures to conditions for leasing circuit capacity, procedures and conditions of licensing, use of frequencies, regulation of dominant suppliers and other measures, regulators, policymakers and citizens of CARICOM can benefit through their impact on the development of ICT in the region.

Initiatives to promote harmonisation such as establishing a regional forum of policymakers and regulators to harmonise policies, laws, regulations, procedures and standards are discussed in Chapter IV.

I.5.6 Barriers to cross-border financial services and e-commerce

Barriers to financial services include:

- Restrictions on foreign banks' access to local payment systems. Often there is a requirement for some form of local establishment in order to qualify for access to local payment systems. In addition, there may be a prerequisite to post collateral. Another limitation is where governments enforce selective customary rules, such as mandatory membership in local trade or payments association that, in turn, have rules discriminating against foreign participants. In some cases there may be different capital requirements or collateral requirements for foreign institutions.

- Additional costs placed on direct access to Automated Clearing House (ACH) systems at prohibitive levels. Consequently, local financial institutions, acting as payment intermediaries have considerable pricing latitude that results in significantly higher transactions costs for cross-border payments.

- The lack of access for small and medium enterprises (SMEs) in particular, certainly in Barbados, to merchant accounts, which is a very real drag on their ability to deliver e-commerce service.

- Limits on the number of Automated Teller Machines (ATM) that foreign banks may operate, whereas there may be no such limits on local banks.

- Limits to cross-border issuance of credit cards to businesses for purchasing (as well as travel and entertainment business) which limits the ability of multinational corporations to efficiently participate in business-to-business (B2B) platforms and interact with the global universe of suppliers and business customers.

- Limits and/or restrictions on the provision, transfer or processing of financial information.

- Prohibitions on reinsurance unless locally established or, alternatively, insurance underwriters are required to cede their risks through a local reinsurance monopoly. Brokers who provide risk managers of companies with the best

choices for reinsurance and transportation insurance are not allowed to do so unless they are established in the country.

These barriers seriously affect investment in ICTs especially of SMEs. They need therefore to be addressed in both regional integration initiatives and free trade negotiations.

II. THE ROLE AND STATUS OF TELECOMMUNICATIONS AND ICTs IN CARICOM

II.1 Introduction

Even though it is recognised by some at least that the anticipated scale economies which are a major part of the rationale for the CSME have direct relevance for the telecommunications industry, the role of telecommunications in the development of CARICOM has been articulated only very generally. There has been a failure to define actions that would support a genuine understanding of the critical nature of telecommunications/ICT development to Caribbean integration and economic growth. There continues to be a view that this sector has been an important money earner for governments and should be treated accordingly. For many governments the sector is so central to their control of the national development process that they have been slow in allowing liberalization to proceed. Even when they do liberalise, they continue to try to maintain a measure of control. To complicate things most CARICOM states have opened, and continue to open their telecommunications markets to foreign suppliers in a unilateral manner without reference to any common and harmonized policy or strategy.

In recent years, CARICOM has accelerated its efforts to create enabling environments at the regional and national levels for the growth and diffusion of ICTs and the emergence of knowledge-based models of economic development. Annex 4 of this report is a synopsis of the efforts at the regional and national levels to harness the power of ICTs in the interest of regional integration, national competitiveness, economic growth and social development. This section seeks simply to highlight some of the issues and the challenges associated with efforts in this regard. It also looks at the role of ICTs in the economic development of CARICOM, and the approaches governments have taken, both individually and collectively, to create enabling environments for ICTs and ICT-related services to flourish and to contribute to the regional integration process. What is clear in principle, although it might not yet be fully appreciated in practice, is that ICTs and their related services and sectors cannot be successfully developed nor deployed in national and regional environments where telecommunications has not yet been liberalised and introduced to the competitive pressures of the marketplace. As such, the section also examines the role of a regional cooperative organisation quite similar to the Caribbean Telecommunications Union and its role in advancing the telecommunications liberalisation process.

II.2 Current Structure for Telecommunications and ICTs in CARICOM

II.2.1 Introduction

It must be said that the overall structure governing telecommunications and ICTs in the CARICOM region is, at best, dysfunctional. At worse, it seems to have been deliberately designed to frustrate any effort to create a genuine regional telecommunications and ICT sector from its many disparate national and regional elements. In reality, there is a mix of national and regional departments, organs, bodies, groupings, committees, policies, agendas, strategies, laws and regulations that do little to help the cause of regional integration in these sectors so critical to economic growth and social development. This means that particularly in the area of new and evolving ICTs and related services, the CARICOM private sector has had to function on its own, finding spaces to innovate and

to grow despite the unsupportive environment in which companies have been forced to operate. Nevertheless, during the last five years, in response to global transformations and the evolution of ICTs as key enablers of economic growth and socio-political development, CARICOM has stepped up its efforts to examine the role of the telecommunications and ICT sectors in supporting the region's advancement.

In 2003, under instructions from regional Heads of Government, the CARICOM Secretariat embraced the CARICOM Connectivity Agenda (see below) which provides a framework for individual member states to assess, plan and execute national strategies for connectivity that bring cohesion and a regional perspective to efforts in this regard. In addition, CARICOM Heads of Government have mandated their Ministers responsible for ICTs and telecommunications to meet on a regular basis to cement a regional approach to ICT-related policies. In mid-October 2004, Barbados hosted the Third Meeting of CARICOM Ministers responsible for ICTs at which Ministers and senior officers responsible for ICT policymaking committed their countries to "an aggressive and focussed strategy to accelerate the adoption of information and communication technologies for development (ICTD) within the Community."

In addition to the to Conference of Heads of Government and the CARICOM Secretariat there are several other regional organs and policy frameworks involved in various aspects of telecommunications and ICT development including: the Caribbean Association of National Telecommunication Organisations (CANTO); the CARICOM Centre for Development Administration (CARICAD); the Caribbean Learning and Knowledge Network (CKLN); the Caribbean Telecommunications Union (CTU); the CARICOM Sub-Group on Telecommunications, the Caribbean Regional Negotiating Machinery (CRNM); and the Eastern Caribbean Telecommunications Authority (ECTEL). Also individual countries have embarked on their own ICT policymaking efforts and/or begun the process of telecommunications liberalisation with a view to harnessing the power of the digital revolution to fuel economic growth and sustainable development.

What this means is that there is a significant amount of dispersion at the regional level when it comes to policymaking and general oversight of the telecommunications and ICT sectors. This has specific implications for the development of these sectors, particularly with regard to managing a dynamic process of change in which the opportunities and threats of evolving ICT frameworks must be effectively understood and coherently addressed if the region is to reap the long-term socio-economic benefits associated with significant investments in ICTs.

Following is an outline of key organs, recent policies and/or programmes relating to telecommunications/ICT development approved by CARICOM as a regional body, and/or being undertaken by individual member states.

II.2.2 Conference of Heads of Government of CARICOM

The Conference of Heads of Government of CARICOM is the ultimate decision-making authority for telecommunications and ICT policy at the regional level, which, given the current state of the sectors in the region, is clearly not the most effective organ to hold such a mandate. Nevertheless, at the end of its 23rd meeting in Georgetown, Guyana, in July 2002, the Conference recognised the power of ICTs to integrate and improve the performance of member states in areas related to education, healthcare, poverty reduction, delivery of public information, and governance. Heads also recognised the

importance of "functional connectivity" to enriching and transforming the region's economic environment, developing the CSME, and furthering the regional trade agenda. The Heads further acknowledged the evolving challenges presented by the revolution in digital ICTs, including the so-called digital divide, and the threats these challenges pose to the small economies of the Caribbean region. They concluded that a regional agenda aimed at creating unified approaches to ICT policymaking might diminish these threats and channel the power of the new technologies in the interest of regional development and national sustained growth.

The Conference has authorised the creation of several institutions and frameworks at the regional level that each has a mandate for some aspect of ICT and telecommunications development. Some of these mandates actually intersect, and serve to create far too complex a structure for administration of the sectors in the region, thus paying only lip service to the pronouncements of unification espoused by the Conference. Indeed, many of these organs have served to fragment the sectors, creating a competitive approach to ICT/telecommunications policymaking, and further complicating the efforts of member states looking to develop their own ICT/telecommunications sectors. Ironically, several of these regional organs and/or structures were formed to bring about cohesion but their very existence produces a more fragmented approach to sectoral oversight that in turn creates complexity for Governments already burdened by the intricacies of functioning in the present global environment. If governments themselves are so challenged, it can only be imagined how difficult this incoherent framework has proven to be for CARICOM companies looking to compete on the national, regional and international stages.

II.2.3 Meetings of Ministers with Responsibility for ICTs

In any event, the Heads of Government mandated their Ministers responsible for ICTs to meet on a regular basis to cement a regional approach to ICT-related policies. There is general concern among some regional experts and those involved in ICT development that these meetings have not been effective in bringing order to CARICOM's fragmented policy environment due to the fact that many Ministers do not actually attend the meetings. For example, at the last meeting in Barbados in October 2004, only two regional Ministers were present, including the host. Rather, it is usual for Ministers to send senior bureaucrats responsible for information policy at the national level.

Many countries are therefore represented by Chief Information Officers or other such individuals whose speciality is management of public information and communications entities and who are not necessarily versed in the challenges of technological convergence and the regulatory and policy implications such convergence presents. Many also are not knowledgeable regarding the intricacies of telecommunications liberalisation and its critical importance to the development of the regional ICT sector.

Indeed, the issue in some cases might be that some countries do not actually have Ministers who have portfolio responsibility for an area called "ICTs", and those that have this particular designation have subsumed it under the notion of "information policy" and in many cases made it separate from the Minister or ministry with responsibility for telecommunications policy and regulation. Again, the challenge is one of policy fragmentation at the national levels being mirrored by policy fragmentation at the regional level, which does little to move the region closer to the creation and successful

implementation of ICT/telecommunications policies geared to national advancement and regional development.

Nonetheless, at the Barbados meeting in mid-October 2004, Ministers agreed to the creation of “an aggressive and focussed” ICT strategy for the region. This strategy urges the Community to adopt new approaches to ICT policymaking and regulation, capacity building, and research and innovation. In addition, it encourages member states to develop publicly-funded ICT programmes that address the need for “disenfranchised and under-served” communities to reap the benefits associated with investments in ICTs. Special mention was made, in this regard, to programmes and policies linked to e-literacy, e-government, and skills training for cultural organisations/entrepreneurs to enable them to effectively market Caribbean cultural products. Particular attention was paid to the need for member states to provide low-cost high-bandwidth connectivity to the region’s citizens. Finally, the strategy urges national and regional organisations to prepare "with the utmost emergency" action-oriented ICT projects in key areas such as ICC Cricket World Cup 2007, disaster management and mitigation, and trade facilitation through the CARICOM Single Market and Economy (CSME).

The Georgetown Declaration on ICT Development: In February 2003, regional Ministers responsible for ICTs, supported by their Heads of Government, signed the Georgetown Declaration, which directs CARICOM States to adopt a coordinated approach to the design and implementation of ICT policies, as well as to the creation of “structural, legal and regulatory frameworks” likely to support wider access to and utilisation of ICTs in the Region. The Declaration also called for the establishment of a specialised group to be responsible for ICTs within the CARICOM Working Group on Services, itself set up under the auspices of the Council for Trade and Economic Development (COTED) of the Community. This Specialised ICT Group reports to and advises COTED and the Heads on issues related to training, research and technological transfer within the Community. The Group also collaborates with various regional, sub-regional and/or international bodies to ensure the creation and management of programmes to support the CARICOM ICT/Connectivity Agenda 2003.

II.2.4 CARICOM Sub-Group on Telecommunications

From March 14 to 15, 2005, the first meeting of the CARICOM Sub-Group on Telecommunications was held in Antigua following a recommendation from the CARICOM Working Group on Services Negotiations that the Sub-Group be formed. It is made up of experts from the region's telecommunications sector and is intended to advise the Community on the most effective means to liberalise telecommunications at the national and regional levels. This is in spite of the existence of the Caribbean Telecommunications Union and CANTO, which together are key institutions for the administration of telecommunications sectors in the region, and both of which were represented at the meeting.

The Sub-Group’s first meeting attracted telecommunications/ICT services providers, including incumbent telecommunications operators, cable operators and Internet Service Providers (ISPs), regional consumers and other relevant officials from regional organisations and member states, and some policymakers and regulators from around the region. However, of the 60 delegates attending, more than half were from institutions or companies based in Antigua and Barbuda. Indeed, it was noted that the level of participation of the regulators, including from (ECTEL), was low, and that individuals representing the regional policymaking sector also did not attend in large numbers.

Among the areas discussed were the legal framework for and scope of telecommunications services in the CSME. Participants further analysed existing telecommunications frameworks and services through the lens of provisions regarding Telecommunications Services under the Revised Treaty of Chaguaramas. Finally, the meeting examined the linkages between the liberalisation of telecommunications services and the development of the ICT sector at the national and regional levels. One of the primary mandates was to outline the nature of existing restrictions affecting the provision of telecommunications/ICT services within the CSME and make recommendations on how to most effectively liberalise the sector to support the wider objectives of the CARICOM Single Market and Economy.

The Final Meeting Report does not make clear to whom the meeting's decisions are to be reported and what authority the Sub-Group has to enact final decisions on behalf of the entire Community. Yet, in terms of regional policymaking efforts, this Sub-Group adds yet another layer of complexity to an already elaborate system of management of ICT and telecommunications frameworks in the region.

II.2.5 CARICOM Secretariat

While the CARICOM Secretariat has been empowered to take specific action in various areas on behalf of the Community as a whole, its efforts have not been as effective as they need to be in order to properly support the regional integration movement. There are a myriad reasons put forward as to why this might be so. It is sufficient for the purposes of this Report to note that it appears as if the various committees, sub-committees, institutions and annual meetings empowered by the Conference of Heads of Government to oversee regional integration efforts in the area of ICTs and telecommunications are at variance with some of the mandates given to the Secretariat itself. The authors note, in this regard, that efforts at institutional reform often require difficult decisions to be made that while they might be unpopular and/or create challenges to achieving the required consensus for action, are likely to accord greater benefits over the long term than the creation of new or parallel institutions with the same or similar mandates to carry out the functions of more established organs that might be failing in achieving their mandated objectives.

CARICOM Connectivity Agenda and Platform for Action: The first attempt to define a common strategy and policy for the ICT sector in CARICOM occurred in July 2002 when the Heads of Governments of CARICOM at their 23rd Meeting adopted a Connectivity Agenda and Platform for Action. This document recognises the potential benefit of telecommunications and information and communications technologies (ICTs) in (i) helping to promote regional and hemispheric integration and trade and export (traditional and newer sectors), (ii) increasing the competitiveness especially of small and medium-sized enterprises (SMEs), (iii) developing information and broadcast services at the regional, sub regional and national levels, and (iv) generally building a knowledge-based society in the Caribbean. The underlying objective of the policy and action plan was to increase citizens' access to the global information infrastructure, promote the development of government online (e-government), business (e-commerce), education (e-learning) and health (e-health). The objectives of the Connectivity Agenda are to:

1. Provide broad guidelines that facilitate national connectivity assessments, as well as the design, implementation, evaluation, and integration of national connectivity agendas;

2. Make linkages between national ICT strategic policy design, national state policy and regional ICT development;

3. Recommend mechanisms for the sustainability of each country's connectivity agenda, including the active, ongoing participation of representatives from civil society, the private and public sectors, regional, sub-regional and international organisations in the ongoing implementation and evaluation of the said agendas;

4. Emphasise the need to launch independent, autonomous or semi-autonomous working groups at the highest national level to include key stakeholder representatives, under the guidance of individual governments;

5. Facilitate a genuinely regional approach to and structure for ICT development and connectivity in CARICOM, with the necessary interoperability to support integration within the CSME as well as preserve and pursue the principles enshrined in the CARICOM Charter of Civil Society.

The Agenda provides a conceptual framework and general guidelines for member states to develop their own connectivity plans and defines a three-step process consisting of (1) countries' defining appropriate strategies, policies, plans and procedures to provide connectivity; (2) execution involving the putting in place or facilitating the development (through the establishment of an appropriate legal and regulatory framework) of the necessary infrastructure to provide universal access, promoting the utilisation of the infrastructure and applications (e.g. e-government and e-commerce), promoting the development of content, and developing strategies for public and private financing of ICT projects; and (3) performance measurements. The 10 principles for a "modern national regulatory framework" which must guide the design and implementation of a Connectivity Agenda in CARICOM Member States are shown in Box 5 below:

Box 5: The 10 principles for a modern national regulatory framework for the ICT sector

1. Equitable, universal and affordable access to information
2. Transparency
3. Technological neutrality
4. A competitive ICT industry
5. Effective civil society participation in the development of the regulatory framework
6. Information protection mechanisms
7. Training in the use of ICT services
8. Protection of the new information society's intellectual property
9. Coordination of legislation governing the information and communications sectors
10. Regional objectives as defined in the revised Treaty of Chaguaramas[54]

[54] See Towards CARICOM Connectivity Agenda 2003 and Platform for Action, http://www.caricom.org/

In meeting the objectives set by the Heads of Government, the Agenda is supported by three main policymaking pillars critical to enhancing regional connectivity. These are infrastructure, utilisation and content where infrastructure represents hardware, software, human resources, and telecommunications frameworks that support access to digital information and services. Utilisation is the "value added" that comes from exploiting digital information and services in ways that produce knowledge and improve the quality of life of the Caribbean people. Content is the availability of quality digital information and services generated by and available to regional people and communities.
The Agenda also calls on member states to design national ICT vision statements, as well as establish practical ICT objectives, goals and deadlines. It further recommends that any national ICT frameworks encompass three important components in order to facilitate success. These are assessment and planning; implementation, including in the areas of infrastructure, utilisation, content, design of legal and regulatory frameworks, and financing; and evaluation.

Other CARICOM Secretariat Initiatives: In June/July 2002, the Secretariat commissioned a Country Framework Analysis for CARICOM States on Their E-Readiness for E-business. It is available at http://www.caricom.org/jsp/projects/e-commerce_member_state_readiness.jsp

II.4.6 Caribbean Regional Negotiating Machinery (CRNM)

The CRNM was formally established on April 1, 1997, and mandated by Heads to develop an organised, efficient framework for the coordination and management of the region's resources in international trade negotiation, particularly in the context of the Free Trade Area of the Americas (FTAA) and the World Trade Organisation's (WTO) General Agreement on Trade in Services (GATS). Its mission is to assist member states to capitalise on global trade by effectively participating in international negotiations in areas of specific importance to the region's economic development. In the context of this Report, the CRNM is empowered by the Heads to make recommendations regarding developments related to the international trade in telecommunications and ICT services, and the region's negotiating position in this regard.

It is clear that to date member states have approached international trade negotiations in the area of services in a fragmented and often uninformed manner. The creation of the RNM was an attempt to alleviate the difficulties such an approach has created for the region. However, this mechanism has, itself, been subject to serious challenges as it has attempted to drawn on and unite the various resources in the region in the interest of a more focussed and unified regional negotiating position within the FTAA and the WTO with respect to the ICT and telecommunications sectors.

The fact that management of ICTs and telecommunications is so fragmented at the regional level has not made it easy for the RNM to assess these sectors and their export potential in order to identify areas that retain the greatest potential for services sector exports and develop negotiating positions that support the ongoing development of such sectors. If for no other reason, this is why it is essential that the region create a more coordinated strategic approach to the development of its ICT and telecommunications sectors and the services that are a growing and critical consequence of the convergence of information and communications technologies. It must design and implement cohesive ICT and telecommunications related trade and other policy frameworks that complement

each other in order that a regional vision for the effective development of these innovative services sectors might be realised in as short a time frame as possible.

II.2.7 Caribbean Telecommunications Union CTU

The Caribbean Telecommunications Union (CTU) was established by treaty in 1989 in Nassau, The Bahamas. For a few years, the organisation was in abeyance as it sought to address certain internal issues that inhibited its ability to function effectively and to fulfil the mandate set out by Heads. The Union is again operating at a regional level with objectives that include facilitation and coordination of intra-regional and international communications networks; raising awareness of the telecommunications needs of CARICOM and the potential of the sector to support the socio-economic development of the region; coordinating regional technical standards and routing plans for intraregional and international telecommunications traffic; harmonising where feasible the positions of member states at relevant regional conferences and other international meetings; promoting and nurturing national and regional telecommunications industries; encouraging the transfer of telecommunications technology among member states; and functioning as an information gateway to other sectoral organisations.

In this regard, one of the critical areas in regional ICT and telecommunications management needing special attention is spectrum management. As the sector evolves and the novel services it enables continue to emerge, particularly in the broadcast and media space, it is going to become more and more vital that spectrum is effectively organized and regulated at the regional level.

On January 1, 2006, for example, two leading Caribbean media companies merged to become One Caribbean Media Limited (OCM). The merger is between The Nation Corporation of Barbados, which owns the NATION newspapers and Starcom Network's radio stations, and Caribbean Communications Network (CCN) of Trinidad and Tobago, which owns TV6, the Trinidad Express, and a majority interest in the Grenada Broadcasting Network (GBN). The Nation Corporation has long been interested in obtaining a free-to-air television licence in Barbados. With the merger, there is the potential for a regional media entity with interests that span the entire sector and the region as well. The absence of regional regulatory frameworks governing spectrum allocation, broadcast media operation, and provision of services using new digital networks like the Internet might well emerge as an inhibitor to the development of a truly sustainable Caribbean media concern with a genuine global reach. What is more, the existing potential of this particular sub-sector of ICT-related services is likely to be enhanced or diminished by the region's approach to trade negotiations within both the FTAA and the WTO processes.

II.3 Other Regional Telecommunications and ICT Organizations

II.3.1 Caribbean Association of National Telecommunication Organisations (CANTO)

The Caribbean Association of National Telecommunication Organisations (CANTO) was established in 1985 as a non-profit trade association of telephone operating companies in the Caribbean. Its strategic mission is "to influence the development of policies and programmes that affect members' interests, and to acquire a pro-active position in strategic and policy issues, working together with regulators and telecommunication companies." Following the changes in the sector introduced by digital convergence,

CANTO has broadened its membership to include service providers, equipment suppliers, consultants, government ministries and departments, educational institutions, other telecommunications organisations, and major users of telecommunications services. According to the organisation's website, it now has 67 members in 33 countries.

II.3.2 CARICOM Centre for Development Administration (CARICAD)

The CARICOM Centre for Development Administration (CARICAD) has been mandated to set up a facility to guide CARICOM member states in the design and implementation of strategies for the development of e-government services. The organisation recently established the Technical and Advisory Support Facility (TASF) on e-government, and also has plans to set up a regional steering committee and regional advisory committee for this area. Jamaica, the Bahamas and Trinidad are said to have prepared effective e-government strategies which are likely to be good benchmarks for other countries in the region, and Barbados has drafted its own approach that follows many of the best practices in the region and the world.

In addition, according to the 2004 "Note on the Compendium of Existing ICT and E-Government related Documents in the Caribbean Region", prepared by CARICAD, over the course of the last several years, at the regional level, several reports have been prepared on ICT readiness, including an ICT Needs Assessment Report for the OECS, and an E-Business Capacity Development Report for the CARICOM Secretariat, a section of which is available on the Secretariat's website and which is referred to in the section above on the Secretariat.

There are also several e-government readiness reports that include an ICT Pilot Project Proposal for the OECS. In addition, there is a study on the Caribbean Policy Response to the Information Age, which includes a summary of some of the key activities being pursued by individual member states and regional organisations with a view to harnessing the power of the digital information age. Countries reviewed are Guyana, Barbados, St. Lucia, Grenada, St. Vincent, and Trinidad and Tobago. Finally, there is the Final Report on an ICT Policy and Strategic Plan for the OECS.

II.3.3 Caribbean Learning and Knowledge Network (CKLN)

In 2002, several CARICOM prime ministers met with the World Bank president to discuss economic diversification through innovation, application of new technologies, and regional cooperation via creation and nurturing of a regional Centre of Excellence. The parties agreed to develop a special CARICOM/World Bank initiative whose objectives are to:

1. Improve the relevance of tertiary education and training by increasing the number of accredited programmes recognised internationally for their excellence;
2. Establish a Caribbean Knowledge and Learning Network (CKLN) enabled by the power of ICTs and aimed at strengthening tertiary institutions, fostering specialisation and increasing the region's capacity for knowledge sharing;
3. Ensure the convergence of fragmented regional and international initiatives to maximise results in the area of tertiary and distance education.

The CKLN is charged by Heads of Government with delivering distance education services via the use of evolving ICT frameworks and generally integrating the region's

dispersed knowledge and learning resources to support increased competitiveness and regional development.

This initiative is focused on upgrading the human resource capacities of CARICOM member states through higher education and training. Yet, it is also geared toward linking this educational thrust to the needs of the regional private sector. Launched in 2004 at the CARICOM Heads of Government Meeting in Grenada, CKLN in particular is expected to engage the regional private sector by:

1. Collaborating with employers to better understand their current and potential labour needs;
2. Partnering with designated companies to provide training and incubator facilities to emergent commercial ventures;
3. Identifying investment opportunities in the region, particularly those that might benefit from low-cost connectivity and ties to regional educational institutions.

The University of the West Indies (UWI) is expected to play a major role in the CKLN, with its 27 distance-learning centres to be upgraded and integrated with existing higher education colleges in the region. CARICOM leaders expect the CKLN to enhance the region's global competitiveness by providing nationals with viable, affordable ways of upgrading their skills through distance education courses and programmes. Perhaps most importantly, the project is intended to streamline the various distance education projects in the Caribbean, as well as provide the institutional framework and technological infrastructure to enable regional integration through open distributed learning.

The CKLN is critical in the context of this Report's recommendations concerning the work of the Arthur Lok Jack Graduate School of Business at the St. Augustine Campus of the UWI, the Master's Programme in Telecommunications Regulation and Policy, also based at the St. Augustine Campus, the Master's in International Trade Policy at the Cave Hill Campus of the UWI, and the work of UWI Cave Hill's Centre for International Services, which is focussed on developing regional capacities in ICT and telecommunications services through research and professional training.

II.3.4 Eastern Caribbean Telecommunications Authority (ECTEL)

The Eastern Caribbean Telecommunications Authority (ECTEL) was established by treaty in 2000 among five of the nine member states of the Organisation of Eastern Caribbean States (OECS): Dominica, Grenada, Saint Kitts and Nevis, Saint Lucia, and St. Vincent & The Grenadines. Its purpose is to promote the liberalisation of telecommunications, harmonise policies and regulations and promote the development of telecommunications in its OECS member states, and develop a regional spectrum plan, including co-management of the radio frequency spectrum.

Though ECTEL exists, there still are individual National Telecommunications Regulatory Commissions (NTRCs) in each of the five states, bodies that retain ultimate authority for final decision making on matters related to telecommunications administration.

II.4 National initiatives

II.4.1 Antigua & Barbuda

In 2003, Antigua and Barbuda's Ministry of Education, Culture & Technology unveiled an ICT policy to govern the introduction of digital technologies into the country's schools with a stated mission to "improve the teaching, learning and administrative processes in the education system with the use of ICT and to provide all students with the basic ICT skills that are necessary for the information age". The national policy was developed using a model ICT policy for educational sectors developed by the OECS sub-region of CARICOM.

In addition, the country recently unveiled a draft ICT policy meant to be a "blue print" for the transformation of Antigua and Barbuda into a knowledge-based society. The policy addresses issues related to legal and regulatory frameworks for ICTs, financial and social incentives, affordable access to ICT services for every citizen and resident, and the promotion of Antigua and Barbuda as a Regional Centre of Information Technology Excellence that facilitates the nurturing of e-commerce, Internet marketing, internet gaming, software development, and e-education. The policy also seeks to support the growth of small and medium-sized enterprises (SMEs) through the effective application of ICT services and technologies.

Antigua and Barbuda gained international attention back in 2003 when it filed a case at the WTO arguing that United States federal and state prohibitions on Internet gambling violated the international trade organisation's rules on trade in services. Earlier in 2005, a WTO tribunal ruling made it possible for the US to impose regulations and restrictions by setting certain limits on Web gambling sites located in offshore jurisdictions. This is a partial reversal of a November 2004 ruling against the US in this regard. However, experts argue that the most recent ruling is so broad that both the US and Antigua can claim partial victory.

This case is seen as one with potentially far-ranging implications for Internet governance and the development of the region's ICT services sector. It highlights the importance of designing responsive regional e-commerce and ICT policies linked to countries' national needs and competitive advantages. There is at present no regional approach to these issues, meaning that if and when challenges of this nature arise, countries will be forced to respond individually and in the absence of wider strategic considerations.

II.4.2 The Bahamas

In 2003, the Ministry of Finance of the Commonwealth of the Bahamas released a policy statement on Electronic Commerce and the Bahamian Digital Agenda which outlined a vision of transforming the country into a centre of hemispheric excellence in e-commerce. The strategy is informed by the following key principles:

1. Universal access to the Internet for all Bahamians at affordable rates;
2. Development of a universal service policy that guarantees free Internet access to all public and church-operated schools, public libraries, all public hospitals, clinics, senior citizens' homes and orphanages;
3. Creation of an internationally acceptable legal and regulatory framework for commercial web-based transactions;

4. An effective system for the protection of intellectual property rights;
5. Security, interoperability and interconnection of information systems;
6. The right to privacy, including protection of personal information and confidentiality for consumers; and
7. Development of technologically competent human resources.

According to the Compendium prepared by CARICAD, the Commonwealth of the Bahamas has on the books a Computer Misuse Bill 2003, a Data Protection Bill 2003, and an Electronic Communications and Transaction Bill 2003.

II.4.3 Barbados

For the last several years, Barbados has been systematically implementing the Education Sector Enhancement Programme (ESEP) more popularly known as Edutech. It is a comprehensive education reform programme that uses the new digital ICTs to develop well rounded, retrainable students who are able to think creatively and critically, and problem solve effectively. There are four related parts to Edutech: curriculum reform, development of human resources, physical renovations to schools, and the development of the technological infrastructure. A recent assessment of Barbados ICT landscape conducted by a local consulting company, ACB Knowledge Consultants Inc., found that there is need for stronger policy formulation in the educational sector to manage the challenges of the transition to digital teaching and learning tools.

In various other sectors, Barbados has made significant strides in applying ICTs to improve operational functions, particularly within the public sector. What is more, the Cabinet is considering a draft e-government policy and the country has either enacted or is in the process of enacting legislation dealing with electronic transactions, computer misuse, and data protection. The Government also has begun the process of developing a Freedom of Information/Access-style Act. However, many ICT-related activities and policies have been somewhat uncoordinated and therefore not as strategically effective as they might be given the rigours of convergence.

Thus, the Government commissioned the design of a National ICT Strategic Plan which was completed in 2005. It seeks to bring some order to a fragmented sector as well as chart the country's path towards realisation of the knowledge-based society. In particular, the National ICT Strategic Plan, still in draft form, seeks to strengthen and nurture the country's ICT sector while also diffusing the new digital technologies more effectively throughout the economy and society. It was created with a full understanding of the various regional ICT imperatives and proposed policy directions intended to introduce greater cohesiveness to regional strategies in ICT and telecommunications management. Finally, Barbados has plans to rewrite its 2000 Telecommunications Act to more effectively address issues related to digital convergence.

II.4.4 Belize

While Belize does not appear to possess a national ICT strategic plan, the governing People's United Party of Belize has promised the creation of "a high tech Belize" that will make the computer an integral part of the economic, social and political life of the country. Furthermore, a Public Sector Reform document, Charting the Way Forward: 2000 and Beyond, outlines a strategy for the development of information technology which states, in part, "If the Belize Public Sector is to keep pace with developments in

the global sphere, its modernisation must embrace advancements in information technology (IT). The Government will therefore seek to modernise the Belize Public Sector through information technology to facilitate efficient decision-making, public administration and policy implementation. It will also seek to provide an information policy framework for Government institutions." A new Telecommunications Act was enacted in August 2002. It liberalises the telecommunications market in Belize and gives responsibility for regulating it to the Public Utilities Commission which was established in 2000.

II.4.5 ECTEL Treaty States

ECTEL recently embarked on an extensive telecommunications and ICT development project on behalf of its five member states using World Bank funding. Among the first projects to be undertaken are the design and implementation of a broadband deployment strategy and the development of guidelines for universal service implementation. Other projects and programmes are expected to be rolled out over the course of a few years. In addition, individual ECTEL member states have designed policy frameworks in various areas. Dominica has done an analysis of its IT sub-sector, and Grenada is in the process of implementing an ambitious Smart Schools project. Furthermore, Grenada also has developed an ICT Strategy and Action Plan 2001-2005, with quite detailed inputs for the nurturing of e-government. That country also has a relatively new Telecommunications Act (2000).

II.4.6 Guyana

Guyana's ICT and telecommunications sectors are in a relatively nascent form of development. Chapter 6 of the country's national development strategy addresses the information technology sector, but the 2005 document Enhancing National Competitiveness: Implementing the National Strategy points out that ICT implementation efforts have fallen short and certain structural issues have delayed creation of the country's National ICT Strategic Plan. In April 2006 the country prepared a National ICT for Development Strategy containing national and strategic ICT objectives, strategies for the development of e-government, ICT policies linked to support for the educational sector, and approaches to facilitating growth within the nation's information technology productive sector. The policy documents also outline a vision for the transformation of the telecommunications sector. The government of Guyana has promised full liberalisation of the telecommunications sector.

II.4.7 Jamaica

Jamaica is seen as a regional test case for the design and implementation of ICT policies and telecommunications liberalisation. The country led the region in restructuring its telecommunications market beginning in September 1999, when the Government concluded an historic agreement with Cable and Wireless (Jamaica) Limited for the phased liberalisation of the sector, with March 1, 2003, as the date for full liberalisation. In addition, Jamaica has developed a Five-Year Strategic Information Technology Plan which refers to the importance of designing networks "to allow access to government services from libraries, post offices, banks, hospitals and other public locations. The key focus is to have citizens throughout the country, even in rural areas, be able to find and receive information and services from different government organizations consistently and easily." Jamaica also has an e-readiness report, a section

of which addresses e-government, and a detailed vision and policy for the development of the country's telecommunications sector.

In 2002 the IADB approved a project intended to contribute to Jamaica's e-readiness and support the development of the ICT sector, in order to increase competitiveness, diversify exports and expand productive employment. The project has four components (i) strengthening the Ministry of Industry, Commerce and Technology; (ii) supporting the introduction of e-government in key agencies in order to increase transparency, efficiency in the public and private sectors and effectiveness, (iii) supporting the expansion of Internet access in low income communities, and (iv) training for all project components.

II.4.8 Trinidad & Tobago

Trinidad & Tobago joins Jamaica in leading the way in respect of designing strategic ICT frameworks for development. Still in the process of liberalising its telecommunications sector, which experts indicate has been a continued drag on other aspects of national innovation and business competitiveness, the Twin Island Republic is seen as being way ahead of many CARICOM countries in terms of the development of key components of the information or knowledge-based society, such as for instance transformation of the national library system to meet digital development standards, and creation of metrics to assess the country readiness for e-commerce and e-government.

In this regard, NIHERST, one of the leading science and technology institutes in the region, has completed a survey on the utilisation of IT by households. There also is a National E-Commerce Policy Committee Report, and the Government created a unit in 2001 to oversee the transition to e-government. The country also has a revamped Telecommunications Act 2001, a Computer Misuse Act 2001, and a comprehensive National Information and Communication Technology Strategy, ***fastforward***, which is ambitious in both its scale and its scope, drawing in stakeholders from every key constituency who were involved not only in national planning, but are expected to be involved in implementation. The Strategy is available at http://www.fastforward.tt The Government of Trinidad and Tobago and the IADB signed a US$28 million E-Government and Knowledge Brokering Loan Programme.

II.5 Summary Points

In analysing ECTEL's decision-making processes and those of the OECS sub-region's NTRCs, as well as the NTRCs of the wider CARICOM region, and also with the approaches of the CTU, the CARICOM Secretariat, the newly formed CARICOM Sub-Committee on Telecommunications, and all of the other bodies referred to in the preceding sections, the challenges facing the region with respect to effective administration of telecommunications and ICTs become obvious.

Clearly, there is a considerable amount of fragmentation at the regional level in relation to policymaking and general oversight of the telecommunications and ICT sectors, and this fragmentation seems unlikely to be mitigated in the near future. This has specific implications for the development of these sectors, particularly with regard to managing a dynamic process of change in which the opportunities and threats of evolving ICT frameworks must be effectively understood and coherently addressed if the region is to reap the long-term socio-economic benefits associated with significant investments in

ICTs. Aside from this, the threat to the region's negotiating positions and the competitive development of its ICT and telecommunications sectors within the FTAA and the WTO will increase as this fragmentation continues unaddressed.

Due to the nature of convergence and the continuing evolution of the telecommunications and ICT sectors, issues often are interconnected and policymaking and/or regulation must, of necessity, overlap in areas that once might have been distinct. It is possible that several of the institutions created and mandates formulated by the Heads of Government in response to what they have recognised as the critical failures and needs of the region in terms of telecommunications and ICT capacity building could have been served by one or two organisations empowered by them to act reasonably in the interest of effective regional development of the sectors.

The existing fragmented ICT and telecommunications policy framework becomes a challenge when so many actors are authorised to act in areas that often intersect. In theory, regional policymaking in these critical areas might be more effectively executed under the auspices of one or two regional organisations who might then collaborate more efficiently in the design, transmission, implementation and oversight of key ICT and telecommunications related policies and programmes, reporting directly to the Conference of Heads and receiving further mandates directly from that body.

Thus, while it is clear that the region has been making some progress in seeking to address the challenges being created by digital convergence and seize the many opportunities the information revolution is making possible, and while many governments are analysing the possibilities with respect to both e-government and e-commerce, there is at least one critical area in addition to spectrum management that might benefit from a regional solution but which has not yet been addressed, and that is the creation of a Public Key Infrastructure (PKI) to support secure transactions in an online environment.

A PKI framework allows users of an unsecured public network such as the Internet to safely exchange payment and information using public and private keys. This allows individuals to be authenticated over the network while their messages are encrypted and decrypted. While it is true that e-commerce has grown in many countries without the existence of national PKIs, an effective national PKI can increase consumer confidence and strengthen e-commerce and e-government security in ways that are likely to support even more robust growth trends. Since this technological solution can tend to be extremely expensive, however, it is possible that a regional approach in which Governments establish a central clearing facility at the regional level mandated to be responsible for functioning as the region's PKI might be most efficacious.

III. ICTs IN REGIONAL INTEGRATION

III.1 Introduction

This chapter reviews how two quite different types of organizations have integrated telecommunications and ICTs as part of a broader economic integration process. Integration of ICTs and telecommunications has been an essential part of the creation of a single market for goods, services, capital and labour in Europe. It has also been in the Asia Pacific Community (APT) an organisation of governments, telecommunications service providers, manufactures of communication equipment, research & development organisations and other stake holders active in the field of communication and information technology, whose purpose is not to create a common market but to promote growth of telecommunications and ICT services in the Asia Pacific region.

III.2 The European Union's Framework for Electronic Communications Networks and Services

Probably the best example of a successful program for regional integration is the European Union's well designed, planned and executed strategy to create a common market initially for telecommunications services and eventually for electronic communications networks and services. It began in 1987 with the adoption of the Green Paper on the Common Market for Telecommunications Services and Equipment[55] and was followed according to the plan set out in the Green Paper by the establishment of the European Telecommunications Standards Institute (ETSI)[56] in April 1988, the opening of the terminal equipment market a month later[57], the adoption in June 1990 of a harmonized Framework Directive which introduced the notion of Open Network Provision (ONP)[58] and the liberalization of the telecommunications services market (except voice telephony)[59], the adoption of a Green Paper on a common approach in the field of satellite communications in the European Community in November 1990[60], the Council Directive on the application of open network provision to leased lines in June 1992[61], Commission measures to liberalize the provision of satellite services and satellite network services before the end of 1994, Council resolutions on universal service and the introduction of satellite personal communication services in the Community[62], adoption in April 1994 of the Green Paper on a common approach in the field of mobile and personal communications in the European Union[63], the issuance of the Green Paper on the liberalization of telecommunications infrastructure and cable television networks in 1994 and 1995[64] and the adoption of the principles contained in

[55] Green Paper on the development of a Common Market for Telecommunications Services and Equipment, COM(87) 290 of 11.06.1987
[56] To help in introducing a European standardization policy.
[57] Commission directive on competition in the markets in telecommunications terminal equipment (88/301/EEC of 16.05.1988
[58] Framework Council Directive on open network provision (90/387/EEC of 28.06.1990) introduced the notion of open network provision (ONP) designed to ensure provider of liberalized services have fair and non-discriminatory access to public infrastructures such as networks which at the time were still under monopolies like those used for voice telephony or leased circuit capacity.
[59] Commission Directive on competition in the markets for telecommunications services (90/388/EEC of 28.06.1990)
[60] COM(90) 490 of 28.11.1990
[61] 94/44/EEC of 05.06.1992
[62] COM(93) 543 of 15.11.1993 and 93/C 339/01 of 07.12.1993
[63] COM(94) 145 of 27.04.1994
[64] COM(94 440 and COM(94) 682 of 25.10.1994 and 25.01.1995, respectively.

this Green Paper leading to the liberalization of public voice telephony and telecommunications infrastructure markets on 1 January 1998, and culminating in 2002 with the establishment of a fully liberalized market for electronic communications networks and services.

The 1998 Framework required that all EU members fully open their telecommunications markets by eliminating all exclusive rights and establishing a common framework for general and individual licences in the sector.

The 2002 Framework, which replaced the 1998 Framework, provides for a single regulatory framework for all transmission networks which deliver telecommunications, media and information services. The new EU Framework for electronic communication networks and services which came into effect on 25 July 2003 consists of a set of directives, decisions and a regulation (See Box 6).

According to the EU, "The framework is designed to be future proof, and to take account of the convergence of digital technologies that allow everything from phone calls to entertainment to be delivered over all sorts of networks to all sorts of devices - PCs, televisions, mobile phones and more. Its aim is to move towards truly competitive markets with enhanced cross-border competition."

The new framework separates the regulation of transmission from the regulation of content delivered over electronic communications networks using electronic communications services and does not cover the latter, such as broadcasting content, financial services and certain information society services. The Framework is subject to regular reviews by the European Commission with the first one taking place in 2006. The content of television programs is covered by a separate 1989 Directive related to television broadcasting activities. These initiatives can serve as models for countries and regions considering adopting similar market opening policies.

The process which started with the 1987 Green Paper was part of a broader strategy of regional integration and the establishment of a common market among the then 12 members of the EU[65]. The event which initiated this planned and deliberate process of regional integration of telecommunications and ICT was the adoption in December 1984 by the Council of Telecommunications Ministers of a detailed action plan which has guided European policy in the sector since then. The plan stressed the six points shown in Box 7 These developments underscore not only the rationale for establishing a common integrated policy together with full implementation of such policies by each of the National Regulatory Authorities (NRAs), but also to important to the vital economic development and trade role of communications.

[65] Austria, Finland and Sweden joined the EU in 2005; 10 countries joined in 2004 making the current total 25.

Box 6: The European Union's Harmonized Framework for Electronic Communications Networks and Services (2002)

The EU's 2002 regulatory framework provides for a harmonized framework for regulation of electronic communications networks and services and consists of the following basic instruments

The Framework Directive which sets out the main principles, objectives and procedures for an EU regulatory policy regarding the provision of electronic communications services and networks.[Directive (2002/21/EC)]

The Access and Interconnection Directive which stipulates procedures and principles for imposing pro-competitive obligations regarding access to and interconnection of networks of operators with significant market power. [Directive (2002/19/EC) on access and interconnection]

The Authorisation Directive which introduces a system of general authorization, instead of individual or class licences, to facilitate entry in the market and reduce administrative burdens on operators. [Directive (2002/20/EC) on the authorization of electronic communications networks and services]

The Universal Service Directive which requires a minimum level of availability and affordability of basic electronic communications services and guarantees a set of basic rights for users and consumers of electronic communications services. [Directive (2002/22/EC) on universal service and users' rights relating to electronic communications networks and services]

The Privacy and Electronic Communications Directive which sets out rules for the protection of privacy and of personal data processed in relation to communications over public communication networks. [Directive (97/66/EC) on the processing of personal data and protection of privacy (up to 30/10/2003)]

The Radio Spectrum Decision which establishes principles and procedures for the development and implementation of an internal and external EU radio spectrum policy. [Decision (676/2002/EC) on a regulatory framework for radio spectrum policy in the European Community (Radio Spectrum Decision)]

The Competition Directive which consolidates the legal measures based on Article 86 of the EU Treaty that have liberalized the telecommunications sector over the years. [Directive (2002/77/EC) on competition in the markets for electronic communications services]

Decision (2003/548/EC) on the minimum set of leased lines with harmonized characteristics and associated standards referred to in Article 18 of the Universal Service Directive

Regulation (2887/2000/EC) on unbundled access to the local loop

The framework does not cover broadcast content, electronic commerce services and terminal equipment.

The process of liberalization which in Europe went hand in hand with the process of harmonization was seen as essential in the creation of pan-European networks and a vital element of economic and social cohesion.

Box 7: The 1984 Action Plan of the European Council of Telecommunications Ministers[66]

1. Cooperation between network operators in creating new generations of networks and services in a European rather than a national context.
2. Creation of a European terminals market.
3. R&D cooperation between IT industries and network operators with a view to setting up broadband integrated services networks.
4. Common Community positions in negotiations with third countries and international organizations.
5. Specific action to provide modern infrastructure and services in less develop regions of the EU.
6. Concertation with the two sides of industry on telecommunication policy measures.

The new EU framework is designed to ensure that ICT and telecommunications rules and regulations are pro-actively implemented only where defined market regulations are not considered to have been implemented according to EU standards[67]. This new framework, designed to support the continued growth of the electronic communications sector and in particular of broadband services, is intended to boost competition at the level not only services but also networks and platforms, while giving NRAs the tools to mandate access to networks where justified by a lack of competitive pressure on dominant operators.

The results of the EU program on the electronic communications market is impressive. The market experienced growth of nearly 4.7% in 2003 and estimates are for continued expansion. The mobile telephony market continues to expand rapidly. In 2003 there were 305.6 million mobile users. Some EU members have more than 100% saturation. As well, there was a significant increase in the number of broadband lines in 2003, and have been increasing at 10 million per year. There has been a continuous expansion of competition and progressive liberalization in the former telephone monopoly sector. The result of these advances, the Commission has concluded, is that consumers have benefited significantly from the increased number of operators in the fixed market. This reflects the power of the European Commission to develop common policies and rules for telecommunication and ICT, which must subsequently be transposed into national laws by each member state. While there is no similar structure under CARICOM the EU model which has constructed an effective common framework for electronic communications services implemented or being implemented in the now 25 member states should provide some ideas and guidance to CARICOM as it formulates common policies for regional integration which will include ICT.

As part of the 2006 review of the current regulatory framework the European Commission will be proposing measures to: promote greater take up of fixed and mobile broadband across Europe mainly by encouraging more effective competition in countries where there is insufficient level of competition in this area; promote the development of

[66] Council recommendations concerning the implementation of harmonization in the field of telecommunications ((84/549/EEC)

[67] The European Commission emphasized that new and emerging markets also should, in principle, be free from regulation. See COM (2003) 715 Final.

audiovisual content services market; provide incentives to research in ICTs and the use of ICTs especially by small and medium enterprises (SME) to help make them more efficient; and advance the application of ICTs to government (e-government), health care (e-health) and education. With respect to the latter Europe will be investing more in education for the knowledge economy and skills development[68].

III.3 The Asia-Pacific Telecommunity (APT)

In the Asia-Pacific region for many years there has been recognition that telecommunications is central to economic development. Despite the wide disparities in levels of economic advancement and differences in political and government structure, a regional organisation was established in July 1979 to serve as the focal organisation in the region for communication and information technology. The Asia-Pacific Telecommunity (APT), a joint venture of the UN Economic and Social Commission for Asia and the Pacific (ESCAP) and the International Telecommunication Union (ITU), is a unique organisation of governments, telecommunication service providers, manufacturers of communications equipment, research and development organisations and other ICT stakeholders active in the field of communications and information technology. (www.aptsec.org). It has 33 member economies, four associate members and 101 affiliate members. They range from Japan and Korea, China and India, Singapore and Thailand, to Iran, Mongolia and the Pacific Island countries. Over the years it has made a significant contribution to the growth of the ICT sector especially the telecommunications sector in the Asia-Pacific region. An overriding objective of APT is supporting and facilitating its members in bringing about quantitative and sustainable growth in telecommunications and ICT services in the Asia-Pacific region.

Unlike the European Union which is a treaty-based body with a mission to establish a legally binding common economic market for its member countries, the APT is a collaborative organization bringing together almost every political jurisdiction in the region, to collaborate in establishing common policies and regulatory frameworks to promote the build-up of telecommunications capabilities, trade and economic development. In view of the highly divergent membership, from small Pacific Islands, the reclusive North Korea to vibrant Australia and Japan. APT has been credited with making significant contributions to the advancement of telecommunications over the last 26 year period.

The APT Management Board adopts biannually a strategic plan whose vision is focused on accelerating the qualitative and sustainable growth of telecom and ICT services in the region. Another important dimension of its work is based on the rise of ICT applications that has greatly enhanced the user demand for telecommunications infrastructure for mobile and broadband delivery of Internet based services for business applications, social communication and entertainment. A particular focus of APT is that the application of these developments across the region has been very uneven with many communities having limited or in some cases no access. Thus, despite the best attempts by governments in the region the digital divide is increasing and not decreasing, causing disenfranchisement within many communities. The strategic direction of APT continues to be to:

[68] Viviane Reding, The role of ICT in innovation and growth, Forum de la Nouvelle Economie, Madrid, 8 May 2006

a. foster the development of ICT infrastructure, applications and services throughout the region;

b. develop cooperation in areas of common interest including policy and regulation, infrastructure development, ICT applications, technological standardisation in the telecommunications and radio-communications sector, human resource development and technology transfer, telecommunications operators, services and business issues, user interests, and intra-and inter-regional cooperation.

A number of governments in the Asia-Pacific are liberalising their telecommunications operations and are encouraging private entrepreneurship. Because the APT has 100 private sector operators as associate members, it is able to contribute to bridging gaps in conditions private enterprises require to engage in and operate telecommunications services. This underscores the organisation's approach to policy and regulation that involves: (i) assisting members to develop their own policy and regulatory frameworks that will encourage competition and innovation; (ii) providing strategic advice to the Members on policy and regulatory issue when requested; (iii) organising national, and sub-regional meetings on policy and regulation and promoting regional cooperation; (iv) facilitating regional views presented at the ITU and other bodies; (v) organising meetings to encourage participation in the work of the WTO; and (vi) encouraging harmonised implementation of solutions, especially where regional needs are identified.

By way of example the Box 7 summarizes APT's priority programme for 2004-05.

In many ways the APT is a cross between the Caribbean Association of National Telecommunication Organisations (CANTO) the non-profit trade association of telephone operating companies in the Caribbean and the Caribbean Telecommunications Union (CTU), an intergovernmental organization established by treaty whose main purpose is the coordination and harmonization of telecommunications and raising awareness of this sector in CARICOM.

Box 8: Additional Priority Programs of the Asia-Pacific Telecommunity

Infrastructure Development – facilitate development of fully interconnected and interoperable networks and services within the region with global connectivity; and conduct studies on the relevant topics for promoting infrastructure development and issues associated with network development.

ICT Applications and Establishment of Information Society –assist Members to prepare and implement: projects for the development of ICT services; e-enabled services such as e-Government, e-Commerce, e-Health and e-Education; undertake appropriate studies on ICT policy, technology and applications; facilitate development of domestic and regional strategies in critical information and communications infrastructure protection, leveraging public-private sector partnerships for the protection of these connected infrastructures; and promotion of positive and responsible use of the Internet.

Technology development in the Standardization and Radiocommunications Sectors – promoting cooperation in: standardization activities in the region and interaction with the global standardization process; national spectrum management; identify key products for research and development.

Human Research Development Capacity Building and Technology Transfer: Plan and implement HRD programs on topics such as new technologies, management practices, policy and regulatory issues, provision of services and operational matters; organizing study visits on areas of interest to Members; foster HRD program for exchange of ICT engineers and researchers; and provide assistance in capacity building through expert missions and other programs.

Telecom Operations, Services and Business Issues: Facilitate exchange of views on key issues concerning introduction and efficient operation of telecom services in the region; promote partnership programs; strengthen cooperation for enhancing efficiency of services and cost reduction; promote regional cooperation on global operational issues such as cost of services, charging arrangements and traffic flows.

Intra-Regional and Inter-Regional Cooperation: Establish closer relationship with funding agencies for resource mobilization and for developing joint programs.

IV. CARICOM AND TRADE IN TELECOMMUNICATIONS

IV.1 Current trade negotiations involving the CARICOM Member States

IV.1.1 Introduction

Currently CARICOM is engaged in several multilateral trade negotiations at various levels.

- At the multilateral level, the WTO Doha Development Agenda negotiations that were launched in 2001 was scheduled for conclusion in 2006, according to the Ministerial Declaration adopted in Hong Kong on 18 December 2005; however, unless the mini-Ministerial conference scheduled for late June 2006 focusing on agricultural issues achieves some progress, there is a real prospect the Doha Development Round will fail.

- At the multilateral level within the framework of the World Trade Organization (WTO) Doha Agenda negotiations initially targeted for conclusion on 1 January, 2005 is now uncertain;

- At the inter-regional level the CARIFORUM-European Union (EU) negotiations for an Economic Partnership Agreement (EPA), officially launched in April 2004 and scheduled to be completed by December 2007;

- At the hemispheric level within the framework of the Free Trade Area of the Americas (FTAA) initially planned to be concluded by January 2005 but is now uncertain; and ((now also uncertain;))

These are briefly described in the following section.

III.1.2 WTO Commitments and the Doha Development Agenda

The WTO's Council for Trade in Services restarted negotiations on services early in 2000 and the Ministerial Meeting in Doha in November, 2001 officially launched the Doha Development Round (Doha Round) with an ambitious timetable to complete negotiations by 1 January 2005[69]. Following the failure of the Cancun Ministerial Conference in September, 2003, it became evident that this was no longer possible. The enthusiasm of many countries had waned and the revised schedule for completing the Round was set back to 2006.

During the course of Doha negotiations, issues relating to agriculture have dominated deliberations. Despite the principal focus on agriculture, the Hong Kong Ministerial declaration recognized that "much remains to be done in order to establish modalities and to conclude the negotiations." Trade in services has been accorded a low priority during the Doha Round, but may receive greater attention in 2006 because the focus of expansion of services trade is on "promoting the economic growth of all trading partners and the developing and leased-developed countries."

[69] Article 45 of the Doha Development Agenda states that "the negotiations to be pursued under the terms of this declaration shall be concluded not later than 1 January 2005".
See http://www.wto.org/english/thewto_e/minist_e/min01_e/mindecl_e.htm

The Ministerial Declaration[70] (Annex 2 – Services) expresses agreement that Members should be guided by a number of market opening objectives, including greater liberalization of Modes 1-4, reduction of MFN exemptions, and calls for a second round of revised offers to be submitted by July 31, 2006. A rather new approach is taken to request–offer negotiations which is "collective requests" for "pluralistic negotiations" that are organized by a group of Members. This has been introduced "to facilitate the participation of all Members, taking account of limited capacity of developing countries. Due consideration shall be given to proposals on trade-related concerns of small economies." Such a pluralistic approach may be applied to all service sectors and a number may be relevant for Caribbean countries. As CARICOM moves forward to a more regional approach to telecom development and trade dimensions, the WTO might offer a stronger option using a pluralistic rather than via bilateral approaches.

Following are some reasons why the Doha Development Round (Doha Round)) negotiations are important for the development of the telecommunications and ICT sectors in CARICOM and by extension to the creation of the CSME:

- First, the Doha Development Round is providing trade negotiators, telecommunications policy makers, and regulators the same opportunity to reflect on today's "leading edge" issues for the sector as their counterparts that participated in the Negotiating Group on Basic Telecommunications (NGBT) had between 1994 and 1997. The issues then included, inter alia, the classification of services, accounting rates, and satellite based systems. These were to have a bearing on telecommunications in the late 1990s and the early part of this decade. It remains uncertain whether these issues actually will be subject of direct negotiations before the close of the Doha Development round. At this time this appears unlikely so Members must rely on expertise of intergovernmental organizations such as ITU, and sub-regional bodies as CTU and CARICOM. The issues being dealt with in the Doha Round today will undoubtedly impact the ICT sector in the years to come. These are discussed below.

- Secondly, countries will find that these same issues and indeed the structure of negotiations and potential agreement have a bearing on negotiations for a Free Trade Area in the Americas (FTAA) and the process of achieving the CARICOM Single Market and Economy (CSME). By familiarizing themselves with the Doha Round issues trade negotiators, telecommunications policy makers and regulators will gain a better understanding of the issues and be able to participate in the debates relating to them.

- Thirdly, while it may not be necessary that CARICOM Member states that have already removed most of the limitations to fully liberalized markets improve on these or make new commitments, they may nevertheless find it worthwhile to confirm in an international treaty the significant progress they have made in reforming their telecommunications and ICT sectors. This would give additional proof to potential investors that these countries now have the stable, predictable, and transparent regulatory frameworks which investors seek. Furthermore, trade

[70] World Trade Organization, Ministerial Conference, Hong Kong, December 13-18, 2005, Ministerial Declaration (WT/MIN (05)/W/3/Rev2), December 18, 2005.

negotiators may find that they can leverage such improved commitments to obtain concessions in other areas in the current process of requests and offers.

The issues that are of concern to telecommunications policy makers, regulators and to trade negotiators in the Doha Round include those which (i) have resulted from the significant changes that have taken place in the sector since 1997 and (ii) were left over from the 1997 negotiations[71].

As everyone knows the most remarkable changes that have taken place since 1997 are in the mobile, broadband and Internet sub sectors. The growth in mobile communications has been phenomenal. No one could have predicted that the world total of about 200 million subscribers in 1997 would multiply by nearly 10 times to close to 2 billion today. There are today more mobile than fixed subscribers in nearly 100 countries including about a dozen in the Caribbean. The number of mobile subscribers exceeded that of fixed lines by 2002 (See Figure 1). The implication is that mobile has become a substitute (rather than a complement) for fixed and it is therefore no longer be appropriate to distinguish between them in trade negotiations or in any other classification especially in a region like the Caribbean where the overall fixed penetration is still at a relatively low level of 16 %[72]. The real competition for the incumbent fixed line operator in all CARICOM countries that have liberalized their telecommunications markets is from mobile and not other fixed operators. This is true in Jamaica, the OECS, Barbados, Belize and will be so in Trinidad & Tobago, Haiti, and other countries as soon as they allow new operators into the mobile market. Limitations in countries' WTO commitments pertaining to mobile but not fixed telephone services are therefore no longer sustainable.

If Doha Round services negotiations are focused on in 2006, then a number of technology/applications issues may be raised. For example issues which may be raised in the Doha Round with respect to mobile communications services include the high interconnection charges between mobile and fixed operators (fixed termination) and between mobile operators, which are being treated as trade issues and are considered to be impediments to investment[73]; the obligation to adopt certain standards when obtaining frequencies for mobile services as is the case in Europe, where contrary to practices in this hemisphere, the GSM air interface standard is imposed; high charges for international roaming and the implications of different charging arrangements such as Calling Party Pays (CPP) and Receiving Party Pays (RPP), which may also be imposed in certain cases on operators when they obtain their licenses. Also the advent of fixed broadband wireless (BWA) and, in particular, WiFi and future WiMAX and other wireless

[71] A comprehensive discussion of these issues can be found in the excellent paper prepared for the Asia-Pacific Telecommunity by G. Russell Pipe, *Guide to Telecommunications Trade Principles, WTO Commitments and DOHA Round Negotiations*, October 2003. See also Asia Pacific Telecommunity, Sub-Regional Seminar on Trade and Telecommunications for East Asia, Ulaanbaatar, Mongolia, 5-6 April, 2004, http://www.aptsec.org/meetings/2004/infodev/MNG/default.htm

[72] In many countries where it was impossible get a fixed telephone or where waiting times were measured in years a mobile telephone can be obtained in less than an hour. In Cameroon for example the number of fixed lines has stagnated at about 80,000 for years. In contrast the number of mobile subscribers has grown from a few thousand in 2000 to close to 1 million today.

[73] In January 2003 it was reported that USTR and the FCC had launched an investigation to determine whether US telecommunications carriers were being overcharged by European wireless operators in trans Atlantic calls that terminated on these operators networks. The article in the January 20 issue of RCR Wireless News states that "the only reason mobile termination fees are a flash point in regulatory circles is because mobile phones are becoming a substitute for landline communications around the world."

access solutions and the pressure to make more spectrum available on an unlicenced basis will no doubt become important topics of the Doha Round negotiations. (In WiFi, for example, dominance of supply and current high charges for WiFi roaming are issues of concern to policy makers and regulators[74])

The just as impressive growth in the Internet since 1997 is also raising the number of trade related issues. In the existing WTO classification of services Internet is a value added service, which in many countries is either not regulated at all or subject only to minimal regulation and/or limitations; however, with rapidly improving technology Voice over the Internet (VoIP) is fast becoming a viable alternative for the basic circuit switched telephone service. The decrease in international calling prices can in part be attributed to competition from VoIP. The question then is, whether Internet should be treated as a basic telecommunications service (a view supported by the European Union and Australia) or whether it should continue to be treated as a minimally regulated value added service (as suggested by the USA), the implications being that if the Internet is treated as a basic service it would be subject to many of the disciplines in the General Agreement on Trade in Services (GATS) such as those contained in the regulatory principles Reference Paper and the Telecommunications Annex. The latter, for example, requires that "each member shall ensure that service suppliers of any other member have access to and use of public telecommunications transport networks or services (including private leased circuits) on reasonable and non discriminatory terms and conditions, for the supply of a service included in its schedule."[75] If the Internet is a basic service, then it might indeed fall within the scope of a public telecommunications transport service which is defined in the Annex as "any telecommunications transport service required, explicitly or in effect, by a member to be offered to the public generally" and might then have to be regulated to ensure that any supplier of a scheduled service (for example, financial services, air transport and tourism) has access to and use of the Internet under non-discriminatory and reasonable conditions. This also means that in Barbados and Jamaica, which scheduled no limitations on market access (or national treatment) for Internet and Internet access, Internet Service Providers must be given access to leased circuit capacity on reasonable and non-discriminatory terms and conditions, namely, under the same terms and conditions which Cable & Wireless offers its ISP affiliate[76].

A related issue concerns the international Internet charging arrangements which require ISPs in the Caribbean and other regions to pay high prices for backbone capacity in submarine cables and satellite systems and transit charges to connect into the Internet mainly in the USA[77]. These high prices are reflected in the prices these ISPs charge their customers. Australia has argued that Internet delivery services are basic telecommunications services to which the principles of the Reference Paper should apply and, therefore; competitive safeguards and other provisions should apply to dominant or monopoly suppliers of backbone which are essential for ISPs to access the Internet. A study commissioned by Regulatel, the Forum of Latin American Regulators

[74] See Trends In Telecommunications Reform, 2003, Promoting Universal Access to ICTs: Practical Tools for Regulators, International Telecommunication Union, Geneva, 2003

[75] Telecommunications Annex in The General Agreement on Trade in Services and Related Instruments, WTO, April 1994

[76] Contrary to Barbados, Trinidad & Tobago did not remove limitations on market access in its 1997 Commitment for Internet and Internet Access.

[77] Ovum, CybeRegulacion, Los flujos de tráfico de Internet y otros servicios de Telecomunicaciones en América Latina y dinámica de sus mercados, Un informe para Regulatel-AHCIET, Julio de 2001

and AHCIET (Asociación Hispanoamericana de Centros de Investigación y Empresas de Telecomunicaciones) in 2001 showed that Latin American ISPs were paying nearly US$ 300 million/year in providing connectivity between Latin America and North America and estimated that this would increase to over US$ 1.7 billion/year by 2006[78]. The study did not break out figures for the Caribbean; however, given the very high leased circuit prices the implications for Caribbean ISPs are the same. Billing for Internet use, quality of service and number portability for Internet are other related Doha Round issues[79].

Issues left over from the Negotiating Group on Basic Telecommunications (NGBT) include proposals to:

- strengthen the Reference Paper especially with respect to interconnection and independence of the regulator, the latter being considered by some to be inadequate to ensure that the regulator not only is independent of major suppliers but also free of political interference;

- get countries that have made commitments to improve on them and countries that have not made any commitments (Haiti, Saint Lucia, and Saint Vincent and The Grenadines in the Caribbean) to table them. Improvements that have been suggested by Canada, Switzerland, European Union, USA, Australia and others include: 1) scheduling services, which were previously not scheduled and lifting the numerous limitations which are currently found in many countries' commitments including: limitations on the number of operators; limitations on the type of legal entity; limitations on the level of direct and indirect foreign ownership; limitations regarding national treatment such as residency and ownership requirements, and limitations on nationality of certain categories of personnel. Also it is being suggested that the long phase-in periods for achieving full liberalization, that are found in some current schedules and that have come under criticism, should be revised. The latter is not an issue for CARICOM Member States except perhaps Guyana.

- related to postal and courier services, audiovisual and broadcasting services, cable television and Direct-to-Home (DTH) satellite services, motion picture and mobile entertainment services, and radio and television production services[80].

Renewed attention may also be paid to the concept of structurally separating the infrastructure or pipeline over which a service is delivered from the service itself. The European Commission has recently reflected on this in the context of unbundling incumbent operators' local loops and the question of who should own and operate the basic infrastructure over which competitive services are provided.

Finally it has been suggested that countries among whom may be some CARICOM Member States, must implement measures to ensure greater transparency in domestic regulation, including the availability and general access to information on regulations, procedures, and other measures that affect interests of potential investors including

[78] See the Communication from Australia, Negotiating Proposal for Telecommunications Services, S/CSS/W/17, 5 December 2000 World Trade Organization, Counsel For Trade In Services, Special Session

[79] Pipe, G. Russell, *Guide to Telecommunications Trade Principles, WTO Commitments and DOHA Round Negotiations, prepared for the Asia-Pacific Telecommunity*, October 2003

[80] See various Communications of Switzerland, Canada, Australia, United States, Mexico, European Union and others in the WTO Council for Trade in Services S/CSS/W, 2000 - present

procedurally fair and open treatment and potential investors' ability to comment on new and modified proposals.

IV.1.3 Plurilateral requests to expedite services negotiations and liberalize market access

The Hong Kong Ministerial Declaration in its Annex C provided for establishing a procedure for members to participate in a new plurilateral (collective) request procedure. This new procedure is intended to complement and not supersede the bilateral request-offer negotiations and the specificity of bilateral requests. On 28 February 2006, WTO members began circulating plurilateral requests for twenty services sectors, including telecommunications. The specific demandeurs in telecommunications reflect a number of 7 industrialized countries, together with the European Community and the regions Hong Kong and Taiwan. The demandeurs addressed their request to a total of 23 target countries. Singapore is the lead country for the telecommunications plurilateral process.

The demandeurs are: Australia, Canada, European Commission, Hong Kong, Japan, Korea, Norway, Singapore, Taiwan and the United States.

The target countries are: Argentina, Brazil, Brunei, Bulgaria, China, Chile, Colombia, Egypt, India, Indonesia, Israel, Malaysia, Mexico, Morocco, New Zealand, Nigeria, Pakistan, Philippines, Romania, South Africa, Switzerland, Thailand, Turkey and UAE.

The target countries were presented the collective request (Box 9) and invited to participate in a meeting with the demandeurs in Geneva during April 2006. The target members have the right to modify the content of the request. Additional WTO Members may also be identified in the future. No report of the meeting has been released. Because this is the beginning point of the plurilateral process, they key issue may not be for Caribbean countries to be added to the target list, rather whether Caribbean countries are prepared to accept the terms of the demandeurs' request.

This Plurilateral Request expects removal of essentially all national controls and limitations on market access, national treatment and MFN for all subscribing Members. While this may be an unreasonably high expectation for many countries, including for those in the Caribbean, the demandeurs participating in this market access process comprise the largest market for Caribbean telecommunications as well as other services and goods exports. Consequently because the Doha Development Round is edging toward collapse, this new avenue to undertake formal agreements within the ambit of the WTO rules and procedures, should be considered prudently.

Box 9: Telecommunications services collective request

Telecommunications services are not only important economic drivers in their own right but are also key enablers of trade and development with the potential to improve quality of life for developed and developing countries alike. For these reasons, we recognize telecommunications as a vital infrastructural service and request strong and commercially meaningful commitments for all telecommunications services. When scheduling commitments in this sector, Members' attention are drawn to the agreed objectives of paragraph 1f(i) of Annex C to the Hong Kong Ministerial Declaration that Members should ensure, to the maximum extent possible, clarity, certainty, comparability and coherence of commitments through adherence to scheduling decisions of the Council for Trade in Services. Specifically, we request that your government make commitments on telecommunications services in accordance with the following:

(a) Sectoral Coverage. Commitments should have commercially meaningful coverage…in particular voice and data transmission services and leased circuits (through any means of technology) and services listed as value-added services.
(b) Mode 1: No national treatment limitations and no substantial market access limitations, specifically:

(i) No unbound;
(ii) No requirement to use networks of specific suppliers;
(iii) No requirement of commercial presence; and
(iv) No requirement of commercial arrangements.

(c) Mode 2: No market access or national treatment limitations.
(d) Mode 3: No national treatment limitations and no substantial market access limitations, specifically:

a. No limitations on the establishment or number of service suppliers (e.g. quotas, exclusive service suppliers, or geographic restrictions within a Member state's territory);
b. No economic needs tests;
c. No restrictions on the types of legal entities permitted;
d. No limitations on nationality or residency; and
e. Majority foreign capital participation and effective control to be allowed.

f.

(e) Subsectors 2.C.h to 2.C.n in MTN.GNS/W/120: No limitations to Modes 1 to 3.
(f) All telecommunications services provided on a non-facilities or resale basic: No limitations to Modes 1 to 3.
(g) Mode 4:

(i) Make commitments in accordance with para 1(d) of Annex C of the Hong Kong Ministerial Declaration, in particular new or improved commitments on the categories of Intra-Corporate Transferees and Business Visitors.

(ii) No additional limitations beyond horizontal limitations; and

(iii) No exclusion of telecommunications services from horizontal Mode 4 commitments.

(h) Reference Paper: Commitments to all provisions of the Reference Paper developed by the Negotiating Group on Basic Telecommunications.
(i) MFN Exemptions: Removal of all MFN exemptions.

IV.1.4 CARIFORUM-European Union (EU) negotiations for an Economic Partnership Agreement (EPA)

The Caribbean Forum of ACP (Asia, Caribbean and Pacific) States (CARIFORUM) represents the regional configuration of all CARICOM Member States except Montserrat together with the Dominican Republic, which is not a member of CARICOM. Current relations between the European Union and ACP and therefor CARIFORUM are governed by the 2000 Cotonou Partnership Agreement (CPA), which, inter alia, allows for Economic Partnership Agreements (EPAs) between the European Union and the ACP countries to be extended to services and provides for the application of so-called Special and Differential Treatment (S&D)[81] in services negotiations to benefit the ACP countries[82]. With respect to ICTs and especially telecommunications the European Commission has been keen in the current negotiations to liberalize the sector because of its infrastructure nature. The EC also wants CARICOM to bind in the EPA the market access which they have de facto granted at the national level.

IV.1.5 Free Trade Area of the Americas (FTAA)

The FTAA negotiations aim to achieve a Free Trade Area for goods and services comprising 34 countries in North and South America and the Caribbean by 2005 but this deadline has passed and informal meetings between USTR and the Brazilian Co-Chair are reported as not making any significant progress. The basis for negotiations is a set of principles and a plan of action resulting from the 1994 Summit of the Americas (Miami). As a regional agreement the FTAA will be consistent with rules and disciplines of the WTO which permit the establishment of customs unions and free trade areas (Article XXIV of the GATT; Article V of the GATS). The negotiations were to have been completed in January 2005; however, following the October 2005 Summit of Americas in Argentina the future of these negotiations is quite uncertain.

Under the structure and organization established for the negotiations in 1998 the Ministers of Trade of the 34 countries[83] were responsible for oversight and management of the process. Negotiations were carried out within nine negotiating groups (investment, services, government procurement, dispute settlement, agriculture, intellectual property rights, subsidies and countervailing duties, and competition policy) under the supervision of the Trade Negotiations Committee (TNC) comprising the Vice Ministers of each country. In addition there were four committees dealing with issues relevant to the nine negotiating areas, namely: the concerns of the smaller economies; electronic commerce; involvement of civil society; and the institutional aspects of the Agreement.

Even prior to the 2005 Summit of the Americas negotiations had been stalled due mainly to an impasse between the USA and Brazil on market access for agricultural products.

[81] S&D provisions in the GATS include: provisions aimed at increasing participation of developing countries; provisions under which WTO members should safeguard the interests of developing countries; provisions giving flexibility of commitments of developing countries; and provisions allowing for technical assistance to developing countries.

[82] Article 41.5 of the Cotonou Partnership Agreement

[83] The 34 FTAA countries are: Antigua and Barbuda, Argentina, Bahamas, Barbados, Belize, Bolivia, Brazil, Canada, Chile, Colombia, Costa Rica, Dominica, Dominican Republic, Ecuador, El Salvador, Grenada, Guatemala, Guyana, Haiti, Honduras, Jamaica, Mexico, Nicaragua, Panama, Paraguay, Peru, St. Vincent and the Grenadines, St. Lucia, St. Kitts and Nevis, Suriname, Trinidad and Tobago, the United States, Uruguay, and Venezuela.

This did not prevent the USA from negotiating bilateral free trade arrangements with the Dominican Republic and some countries of the Andean Pact and in Central America.

The current (public) version of the draft FTAA Agreement dates back to 21 November 2003[84], which in Chapter XVI on Services contains text on telecommunications reflecting largely text proposed in March 2003 by the USA. This text is important with respect to some of the regional pricing and other issues which are discussed elsewhere in this report because it introduces competitive safeguard and other provisions which, for example, require dominant operators and service providers ("major suppliers of public telecommunications services") to make available to enterprises and other operators and service providers leased circuits, interconnection, access to rights of way, co-location facilities and unbundled network elements on reasonable and non discriminatory conditions and at cost oriented (and flat rate for leased lines) prices. It requires that interconnection offers and agreements and procedures for interconnection negotiations with major suppliers be transparent, that access to any supplier's submarine cable system (including landing station) be made available at reasonable and non discriminatory conditions and that all suppliers be obliged to allow resale of their public telecommunication services and to provide number portability and dialling parity. This text, furthermore, contains provisions relating to the independence of the regulator (from any supplier of public telecommunications services), technology neutrality, transparency of the regulatory process and licencing procedures and the need to ensure that procedures and obligations related to universal service and allocation of scarce resources are non discriminatory and transparent.

IV.2 Conclusions and recommendations

CARICOM is currently engaged in the WTO Doha Development Agenda trade negotiations as well as those with CARIFORUM-European Union and the FTAA. Considerable expectations had been placed on the WTO round in all sectors, but for the Caribbean advancing services market liberalization is especially vital. However, due to the increase in WTO membership to 150 the key trade interests of a majority of members have now shifted to agriculture and manufacturing, The Doha Development Agenda is essentially at an impasse and may fail. A mini-ministerial to focus on agricultural issues has been scheduled for late June 2006 and this may signal the Round's demise or possibly a revival of optimism.

Because services were introduced in the Uruguay Round for the first time, it was not possible to fully address all dimensions of each sector. Although in telecommunications, basic as well as value-added services were addressed and a Reference Paper prepared, since 1997 new services have been introduced, particularly the Internet, broadband and convergence of communications technologies. Without a working group on telecom under the WTO Secretariat is befalls CARICOM to exert the leadership proposed in this report to advance Caribbean telecom interests. National regulations need to be revised and updated to fully meet today's needs and make telecom a driver of economic growth and trade in the region.

A new dimension to the request-offer process introduced at the Hong Kong Ministerial that has been described in this report, that is "collective requests" for "plurilateral negotiations" is a negotiating device that could benefit CARICOM if members could

[84] Third Draft Agreement. See http://www.ftaa-alca.org/FTAADraft03/Index_e.asp

agree on a common position and propose to open negotiations with one or more of the "demandeur" WTO members. The EU is a special case, of course, because of ongoing Economic Partnership Agreement (EPA) negotiations. However, because the collective request mechanism is likened to the Doha Development Round, it likely would have to be re-constituted outside the ambit of WTO should the Round fail.

The negotiations to achieve an Economic Partnership Agreement (EPA) with the European Union should be actively pursued as Europe offers many market opportunities for the Caribbean. The FTAA also should be supported but at seems that the larger economic players as the US and Brazil are having a pivotal role in its eventual outcome.

V RECOMMENDATIONS ON ACTIONS TO PROMOTE REGIONAL INTEGRATION IN ICT AND TELECOMMUNICATIONS

V.1 Introduction

As the commercial and trade dimensions of telecommunications have evolved around the world, so too new and stronger relationships are needed between government and the private sector. Business involvement with government policy-makers and regulators is required on a far more integrated and ongoing basis than has been the case in the Caribbean until now. While there is little doubt about the desirability and usefulness of inputs of business to officials responsible for external trade negotiations understood, the role of business in the public policy process has become far more pervasive.

As has been pointed out earlier in this report, creating favourable market access to Caribbean economies through communications services affects many sectors of national economies with service industries being most prominent but not unique. At the national level, communications and ICT issues increasingly bear on the responsibilities of several ministries, commissions and other government authorities – ranging from Ministries of Communications, Trade, Development, and Foreign Affairs to Telecommunications Regulatory Authorities (TRAs), Anti-Monopoly Commissions and Consumer Affairs bodies and telecommunications regulators. Absent from Councils of Ministers in almost every country is a minister solely responsible for services, with a remit that encompasses a larger percentages of GNPs than manufacturing and agriculture.

The reasons for the lack of private sector participation in international trade policy where bilateral or multilateral negotiations are involved, is because these are often closed to anyone outside of government. At the same time the wide array of services impacted by access to modern cost-effective communications services are far more diverse than trade authorities can be expected to become knowledgeable about. The challenge to institutions such as CRNM, is instil in these government officials the absolute need to reverse the present situation and create public-private partnerships for trade and development in the Caribbean. An important first step, it seems, would be awareness-building programs involving both business and government entities.

The implementation of such awareness-building measures might include sector/industry assessments and consultations aimed at providing relevant information and effective discussion creating “national services development and trade policies.” For example, it would be important to document the strengths and weaknesses of services sectors in the Caribbean, their competitiveness and growth potential, before designing positions for bilateral or multilateral negotiations. In addition, useful comparisons could be made with other countries and regions on the implementation of their studies should be conducted of the policies and practices of other countries and regions where “information societies” (digital economies) are advancing rapidly.

Such initiatives can be expected to identify requirements for new and improved infrastructures, strengthening of certain service sectors, and revision of several laws and policies affecting market structure, access and regulation. As well, capacity building along several lines is likely to be needed. The full implications of “digital trade” which involves only data products with little localization, business presence or employment, can be expected to impact the Caribbean. The rapid growth of new forms of off-shore business services, replacing earlier call centers, also should be pursued.

Indeed, it would seem that a new Caribbean program to advance private sector involvement in trade negotiations may take on greater urgency if and when the FTAA and Doha Round negotiations reopen with timetables for finalization.

Four recommendations are presented here including: harmonizing telecommunications and ICT policies, laws and regulations in CARICOM; establishing a permanent framework for regional collaboration among telecommunications regulators, policy makers and academics; empowering the private sector to take a more active role in shaping policy on free trade negotiations and regional integration; and creating a market access legal platform for local commerce and cross-border trade.

V.1 Recommendations

RECOMMENDATION Nº 1: HARMONIZE TELECOMMUNICATIONS AND ICT POLICIES, LAWS AND REGULATIONS IN CARICOM

The creation of a common market for electronic communications equipment and services in Europe (and part of the broader undertaking to create the European Union) was, as explained in Chapters I and III (above), based on a well planned, deliberate two pronged strategy of liberalization and harmonization. It was first presented in the 1997 Green Paper on the Development of a Common Market for Telecommunications Equipment and Services[85]. Harmonization measures which were to accompany the liberalization process defined in the Green Paper were meant to ensure that there was a harmonized, transparent and non-discriminatory regulatory framework to create an environment conducive to healthy competition in the single market. In 1990 the Council of European Telecommunications Ministers adopted such a harmonized framework designed to ensure that Member States all implemented the agreed liberalization measures within an agreed timeframe, that there was unified interpretation of the provisions in the liberalization directives and that there would be a simplification of contentious regulations on the provision of infrastructure and public services. Other more specific harmonization measures which have been adopted in the European Union include the harmonization of conditions for access to, and use of, the underlying public switched networks and leased lines, harmonization of certification procedures in the supply of equipment for satellite communications equipment, mutual recognition of licences to provide satellite services, and mutual recognition of terminal equipment.

Harmonization is essential for the creation of a single Caribbean market for telecommunications and ICTs. Harmonization in the sector will, inter alia, enhance regulatory certainty for the sector across the Caribbean as laws and regulations are harmonized; reduce market distortions, help promote economies of scale for equipment and services and thereby contribute to the reduction in prices that consumers will have to pay for telecommunications services and ICTs; reduce costs of market entry by simplifying licencing requirements; reduce the cost of compliance; help create of economies in policy development and formulation; ensure better and more efficient implementation of best practices for the sector; reduce the cost of regulation and

[85] Green Paper on the Development of a Common Market for Telecommunications Equipment and Services, COM (87) 290

facilitate training and development[86]. It will also promote the development of Caribbean-wide telecommunications and ICT service providers who will benefit from certain economies that serving a population base of 15 million instead of many diverse small island states will bring. This should promote the creation of a seamless Caribbean ICT and telecommunications space. In this respect CARICOM can and should learn from the European experience.

The Caribbean Telecommunications Union (CTU) has already taken an important initiative in this respect. In 2006 the CTU will be implementing a Spectrum Management Policy Reform Project which will establish a Spectrum Management Task Force whose initial functions are to harmonize approaches to frequency allocations across the Caribbean, assess and recommend the adoption of common spectrum management models and the formulation of regional positions with respect to frequency allocations. The project is structured around a programme of training, fieldwork (audits and monitoring exercises), face to face consultations and the development of a policy framework for regional harmonisation. In addition the project will establish of a common data base for spectrum and frequency allocations for the region. The long term goal will be to harmonize procedures and to cooperate on spectrum monitoring whereby it would be possible to share equipment, staff, and data. The CTU proposes to deal comprehensively with one significant policy area each year through training programs, fieldwork and consultations.

It is accordingly <u>recommended</u> that these and other harmonization initiatives be strongly supported and systematically expanded beyond spectrum management to cover all areas of policy formulation and the development and implementation of common legal and regulatory frameworks for telecommunications and ICTs in CARICOM. In particular it is important that in addition to spectrum use harmonized regulations be developed and implemented for all CARICOM Member States for licencing, access and interconnection, universal service, facilities sharing and local loop unbundling.

RECOMMENDATION Nº 2 ESTABLISH A PERMANENT FRAMEWORK FOR REGIONAL COLLABORATION AMONG TELECOMMUNICATIONS REGULATORS, POLICY MAKERS AND ACADEMICS

For CARICOM member states to sharply increase investment in the telecommunications and ICT sector, action must be taken to eliminate reform or otherwise significantly reduce a number of barriers to investment discussed in Chapter I. To help reduce and/or eliminate these different barriers to investment a comprehensive and on-going program of resource sharing, training, and information exchange among CARICOM regulators and policy makers should be implemented. Such a program, elaborated and discussed in greater detail in another report prepared for the IADB[87], could be developed, organised and administered by either the Caribbean Telecommunications Union (CTU) or the newly established Organisation of Caribbean Utility Regulators (OOCUR) or both

[86] See also: Thomas, Michele, The Benefits of Regional Harmonization in Spectrum Management, and De Freitas, Donnie, The Case for Regional Harmonization, both presented at the 10th CTU Policy Seminar, Port of Spain, 18 – 19 October 2005.

[87] Peter A. Stern, Promoting Investment in Information and Communication Technologies in the Caribbean, Economic and Sector Studies, RE3-06-001, Inter-American Development Bank, Washington, May 2006, http://www.iadb.org/publications/index.cfm?language=English

together and would (i) facilitate interaction among the region's regulators to review, improve, revise, and harmonise policies, legal and regulatory frameworks, procedures and standards to diminish uncertainty and simplify procedures for investors; (ii) support the newly established regulatory institutions in the region to become more effective and to assert their independence of political and other influences; (iii) familiarise telecommunications regulators and government officials with the principles and best practices in dispute resolution and help develop a regional capacity to jointly deal with disputes; (iv) familiarise regulators and government officials with business planning and finance practices by enhancing their understanding of the implications of their decisions on the flow of investment into the telecommunications sector; and (v) familiarise telecommunications policy makers, regulators, trade negotiators, other government officials and the private sector with the WTO Doha Round, FTAA, CARIFORUM and other trade negotiation issues, and to provide technical support they may require.

It is recommended that a program for regional collaboration be implemented among CARICOM regulators and policy makers consisting of: (i) a pool of experts in telecommunications law, economic and technical regulation and spectrum management who could be on the staff of individual regulators and/or could be centrally located and who would be available to assist any regulator in the region, if and when required, according to predetermined arrangements; (ii) a comprehensive on-going regional programme of training for staff of regulators and government officials consisting of ad-hoc, focused courses in specific, current areas of telecommunications regulation; short term, on-the-job training and longer term, planned courses and program[88] (iii) ad hoc consultations and information exchange between staff of regulators on specific issues; and (iv) establishing and maintaining of a comprehensive database and information sources. This might include prices and other information which might be used by regulators and government officials as benchmarks; studies, precedents and other documents which regulators and government officials might use in disputes or drafting decisions on various regulatory issues; and key indicators to facilitate monitoring developments and preparing positions in the various free trade negotiations in which the region is involved. The latter would come with on-going resources to analyse and organise the data and information to keep it relevant and suit the evolving needs of those who use it.

The University of the West Indies (UWI) might have a key roles to play in the development of the telecommunications and ICT services sectors in the CARICOM region and in helping to bridge the gaps between existing educational and awareness raising initiatives given the significant overlap between many of the policy and subject areas covered by these entities and the challenges they seek to address.

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It is important, for example, that there be cohesion among the diverse activities in CARICOM be it training, awareness building, research and the like. For example, trade in services negotiations should not be taking place in the absence of knowledge about actual business models and strategies at the national and regional levels. Business classes and regulatory frameworks for business should not be written in the absence of an understanding of how convergence is changing the landscape even as regional policies are being written. Telecommunications regulatory and policy structures should

[88] Such as Dr. Kim Mallalieu's (Department of Electrical & Computer Engineering at the University of the West Indies in Trinidad & Tobago) Master's Degree in Telecommunications Regulation and Policy (MRP).

not be being developed without a clear understanding of what is happening in the global trade in services and how the Caribbean must strategically position itself to become competitive and to create sustainable change in an era of globalisation.

It is <u>recommended</u> that the formalization of a regional structure whereby UWI departments on various campuses and entities might carry out functions in their own areas of specialisation that support a regional trade and services development policy and the sort of private sector awareness raising and policy advocacy that is being recommended in the accompanying Green Paper and that take advantage of the natural synergies developing in and among the various areas. It is <u>further recommended</u> that these departments work to develop a common strategic approach where resources, findings, activities and programmes can be shared and enhanced in the interest of regional integration and support to CARICOM's bilateral and multilateral trade negotiations. The respective roles of three such departments are shown in Box 10. (The Mona Campus in Jamaica and the Caribbean Knowledge and Learning Network (CKLN) would need also to be included in such an initiative.) It is also <u>recommended</u> that the feasibility of designing and implementing a degree program that combines areas of specialisation from these three departments and others and possibly also in collaboration with similar type of programs in universities in Canada, the USA and/or Britain.

Box 10: Respective Roles of Some UWI Departments in Leverage Synergies in ICTs, Telecommunications, Trade in Services, and Entrepreneurship[89]

i. The Arthur Lok Jack Graduate School of Business at the St. Augustine campus in Trinidad & Tobago and which is geared towards business-related degree & other programmes, training, consulting, and research in business might focus on:

- Research on failed/slowed national/regional implementation of various ICT Strategies/Plans as a basis for learning from experience;
- Design of measurement methodologies to track ICT Strategy implementation as well as diffusion of ICTs through national economies & societies;
- Research on national/regional competition policies and their impacts on ICT/telecoms diffusion/efficiency, for example in the area of interconnection policies;
- Help raise awareness within the regional private sector of the telecommunications, ICT and trade related issues vital to them and the development of their businesses, inciting them to become more proactive, developing and organising special conferences, seminars and workshops jointly with the other UWI entities and with private sector associations and the region's governments.

ii. The Centre for International Services (CIS) located at the Cave Hill campus in Barbados which is involved in awareness raising, training, research, policy inputs, and consulting on the international trade in services, with some emphasis on ICT-related activities with its associated Masters in International Trade Policy program should focus on

- Regional short-term training in ICT policy linked to its relevance to the international trade policy agenda, including case study research & application in conjunction with the Arthur Lok Jack School;
- Expansion of existing competition policy modules within the MITP with input from the Arthur Lok Jack School and the MRP programme.

iii. The Department of Electrical and Computer Engineering at the St. augustine campus in Trinidad & Tobago with its excellent advanced Masters Degree Program in Telecommunications Regulation & Policy would focus on

- Delivery of relevant new online courses, for example derived from CIS/MITP and ALJ programmes, via the MRP e-learning framework;
- Collaboration in face-to-face seminars on regional integration across the ICT sector.

[89] Other departments on these and other campuses of the UWI with interests and specializations in ICTs might also want to join such an initiative.

RECOMMENDATION N^{O} 3 EMPOWERING THE PRIVATE SECTOR TO TAKE A MORE ACTIVE ROLE IN SHAPING POLICY ON FREE TRADE NEGOTIATIONS AND REGIONAL INTEGRATION

In North America, Europe and some countries in Asia the private sector has been able to influence policy on trade negotiations and regional integration. Large and small enterprises have been successful in doing this because they have been able to speak with one voice through associations of its members. These associations, have the resources to: (i) research the relevant issues, (ii) poll their members and raise awareness among them and the public at large; (iii) prepare position papers; (iv) represent their associations' views at conferences, before government officials and during special hearings and public consultations (v) organise special conferences; (vi) hold press briefings; and (vii) publish documents supporting their positions for governments and the general public.

Examples of private sector associations which have effectively lobbied governments include: the G7 Business Roundtable (Membership incl. BBC, Daimler Benz, BT, Pearson, Canal+, Olivetti, Texas Instruments, Siemens, Société générale de Belgique, etc.) which the 1990's was influential in shaping government policy in the G7 in areas such as global trade, investment, competition in telecommunications, interoperability, standards, and the protection of intellectual property rights, and data; the Geneva based Services World Forum, which was established to facilitate exchange of ideas among those interested in the world services economy; and the Washington-based Global Information Infrastructure Commission (Membership incl. C&W, Nynex, Teleglobe, Jamaica Digiport, NTT, Siemens, the World Bank, Mitsubishi Corp.), an independent non-governmental initiative involving leaders from developing as well as industrialized countries whose mission was to foster private sector leadership and public-private sector cooperation in the development of information networks and service to advance global economic growth, education and quality of life. While none of these three examples would serve as exact models for the Caribbean mainly because of the size and resources of their members, there is much that can be learned form their organization and methods used to achieve their objectives.

The situation in the Caribbean today is different. With a few exceptions industry associations, if they exist at all, are organised at a national (as opposed to regional) level and are made up of a few firms which provide the same or similar services and/or goods[90]. While they may have common concerns they are usually under resourced and not well enough organised to articulate their views and positions with government officials. It is particularly difficult for smaller firms such as Internet Service Providers (ISPs) to find the time and resources to dedicate to such policy related and lobbying activities. The problem is exacerbated by the fact that some of the countries in the region are small and do not support many firms in any one industry.

Barbados does, however, have what it calls a Private Sector Agency with a Private Sector Trade Team which feed into Barbados' global trade negotiation efforts and also work closely with the CRNM to support development of Barbados' strategic positions on issues related to global trade. These structures are funded by the private sector, an

[90] One exception is the Caribbean Association of National Telecommunications Organizations (CANTO), which is well organised with a proactive secretariat, research capacity and which holds annual conferences.

approach which might be replicated in those Caribbean Community member states that might not already have done so.

It is <u>recommended</u> to implement a program at the CARICOM level to empower the smaller industry groups who have an interest in influencing policy direction in CARICOM as it relates to the ICTs and telecommunications, the free trade negotiations and regional integration by:

a. ***inciting and supporting the establishment of smaller national associations and encouraging them to join forces to create Caribbean-wide and more specifically CARICOM associations with similar interests;***

b. ***providing technical assistance to help get these regional organisations established with a centralised physical and/or virtual structure, to develop an internal organisation including a strong and effective administration, funding, operational procedures, research capability, annual programmes and budgets, etc.***

It is <u>further recommended</u> that this be launched by identifying a few such national groups and together with them develop a programme to achieve the objective of creating effective Caribbean-wide industry groups. This might be done jointly with the support of NovaTech, which is funded by PRO€INVEST, the EU-ACP partnership programme for the promotion of investment and technology flows in ACP countries and in conjunction with the proposal presented below on getting the University of the West Indies involved in awareness raising on these issues[91]. The regional organisation(s) created and supported through this initiative could in turn serve as the principal partner of NovaTech in the region to further support and strengthen private sector leadership.

RECOMMENDATION N^{O} 4 CREATE MARKET ACCESS LEGAL PLATFORM FOR LOCAL COMMERCE AND CROSS-BORDER TRADE

Even with a highly favourable legal and regulatory environment for telecommunications as the facilitator of trade of all types, especially services, several interdependent factors will determine access to overseas Caribbean markets and the converse. Through the increasingly formalised (rules-based) multilateral trade regime, it has become necessary for countries seeking increased services trade and investment to adopt laws and regulations in key areas. The following summarises the four main service trade requirements that facilitate or conversely signal caution by trading partners. It is recommended that these be addressed by CARICOM Member States in the various services trade negotiations along with rules and disciplines relating specifically to telecommunications and ICTs.

[91] NovaTech's function is to bring together stakeholders in the ICT sector to discuss and promote investment opportunities in the sector in ACP countries and encourage cooperation among these stakeholders. PRO€INVEST supports and strengthens the work of professional organisations (namely chambers of commerce and industry, employers' federations), investment promotion agencies, financial institutions and ACP consultants' associations whose primary objective is the improvement of the environment for investment.(www.proinvest-eu.org)

a. E-Commerce – Major service economies such as the USA, Europe and Japan expect new trade liberalising agreements to address e-commerce. A relatively new dimension of e-commerce is known as "digital trade" of digitised products and services. Due to the evolving nature of ICTs, there is opposition, especially by the USA, to precisely defining the terms "digital trade" or "digital products." However, even without a precise definition, trade policies are expected to provide binding principles and commitments to avoid creation of any unnecessary barriers to e-commerce. Products delivered electronically must receive no less favourable treatment than those for similar products delivered in physical form. As well, domestic and foreign companies should not be restricted from utilising advanced technologies (hardware, software, technical data or know-how) in the conduct of their business. Any taxes that may be applied to such cross-border trade should be applied to the "carrier medium" and not the value of the content of the digital product (as in software, films, or documents).

b. Intellectual Property Rights (IPRs) have become essential because in a digitised environment, trade in services is exposed to pirating unless strong legal protections are ensured. IPR obligations are set forth in agreements prepared by the World Intellectual Property Organisation (WIPO) applying to protection of industrial property, literary and artistic works and registration of trademarks. However, more is required today, specifically with respect to protection of copyrights, patents, trademarks, and trade secrets, extending international agreements and existing bilateral arrangements. In the various Free Trade Agreements (FTA) negotiated by the USA the parties agree to publish final judgments, decisions or administrative rulings for enforcement of IPRs, which must be in writing and state any relevant findings of fact and the reasoning or legal basis upon which the decision is based. More specific principles apply to trademarks, copyrights and encrypted programmes carrying satellite signals.

   The small countries of CARICOM, however, should be concerned about the evolving definitions and controls being applied by more advanced economies in ways that allow less and less room for the existence of what some are calling the "digital commons", where innovation is allowed to flourish without the increasingly high rents being applied by powerful media, software and other companies that produce digital content and creations. Many of them are tightening the rules of the game in this area so that only the biggest, the most influential or the ones with the most financial resources can play. If the member states of CARICOM are to develop vibrant industries that deal in digital content, there must be space left within the so called "digital commons" where small companies and countries can utilise certain defined information and certain innovative digital formulations without being forced to pay the prohibitively high fees required for use. American lawyer and author Lawrence Lessig has researched and documented the changing rules of the digital game and how the Internet itself is being slowly transformed to benefit the large and powerful. It is for these reasons that CARICOM states should explore the modalities and implications of adopting open source solutions in software and technology, as are other developing economies like Brazil and India. In doing so, they must find ways of striking a balance between preserving a "digital commons" where innovation is allowed to flourish through the free use of certain types of ideas and creations, and licensing usage of technologies, software and other content in order to allow content creators and companies with legal ownership rights to reap the economic benefits of their efforts.

- Trademarks: In particular this involves resolving disputes related to trademarks and Internet domain names, which is important in preventing "cyber-squatting" of trademarked domain names. As well, this must also apply to "first-in-line, first-in-right" trademarks and geographical indicators (place names) applied to products.

- Copyrights: Agreements must ensure that only authors, composers and other copyright holders have the right to make their works available online.

- Encrypted Programme Carrying Satellite Signals: It is to be a criminal offence to manufacture, assemble, modify, import, export, sell, lease or otherwise distribute or use a tangible or intangible device or system, knowing or having to know that the device or system is primarily of assistance in decoding an encrypted programme-carrying signal without authorisation of the lawful distributor.

c. Cross-Border Trade in Services: The scope of cross-border trade needs to be clearly defined. This is because many services have become electronically driven in recent years and it has become important for countries to liberalise cross-border trade and not insist on local establishment of branch offices of foreign companies. One of the leading "services economies" in the world, Singapore, has agreed with the USA to allow substantial market access across its entire services regime subject to very few exemptions. The United States Trade Representative (USTR) reported that USA service firms "will enjoy fair and non-discriminatory treatment through strong disciplines on both cross-border supply of services (such as those delivered electronically, or through travel services, or professionals across borders) and the right to invest and establish a local services presence." Traditional market access to services is supplemented by strong and detailed disciplines on regulatory transparency. Regulatory authorities must use open and transparent regulation, provide advance notice and comment periods for proposed rules and publish all regulations. USA firms also have the right to open equity in entities that may be created if Singapore chooses to privatise certain government-owned services[92].

   Another dimension to cross-border trade in the Singapore-USA FTA but not included in other FTAs, provides reciprocal rights for professionals to gain new access to each other's markets, subject to USA state laws and regulations. Singapore will ease restrictions on USA joint law ventures to practice in Singapore and reduce requirements on the make-up of boards of directors for architectural and engineering firms. Cooperation will be increased in developing standards and criteria for licensing and certification of patent agents. This is a limited list that in the case of CARICOM could be expanded upon to ensure that maximum benefits can be derived from such new reciprocal rights and privileges in the various trade negotiations in which CARICOM is involved.

   That being said, however, in following global trends in this area, CARICOM governments should give careful attention to the shape and character of related

[92] Singapore-US FTA, signed on May 6, 2003. Full text, explanatory material and comments available on www.ustr.gov This website contains all US FTAs agreements as well as FTAA material and WTO Doha Round documents.

policies since any approach taken is likely to seriously affect the ability of the region to grow its own services sectors and to compete on a global scale. It is relevant, in this context, to speak about the "death of distance" and the ability of the digital information revolution to level the playing field so that small companies, service providers and countries can compete with the large and powerful. However, it also is true that there are still many issues related to economies of scale and scope that continue to exist in various service industries, not to mention concerns related to the transfer of skills and knowledge, and to capacity building, all of which are closely linked to the presence of foreign firms in local territories. With respect to legal services, for example, it is accepted that in the Caribbean, this sector would likely benefit from certain competitive pressures. Yet, it also is likely that should legal services, or even educational and banking services, be opened wholesale due to new approaches to digital information without some clearly defined and thought-out steps moving forward, these sectors and the Caribbean professionals who support them would be overwhelmed by stronger competitors from more advanced economies and regions. As such, this is another area that requires deep and thoughtful analysis as the region attempts to respond to the challenges of globalisation.

In this regard, it is instructive to note that Singapore is, indeed, one of the world's leading services economies. It is also instructive to recall that even the trade union movement in Barbados has recognised there is a cycle in any company's development, during its start-up and consolidation phases when it is new and attempting to define its grow trajectory, when it does not need to open itself to the pressure which the unionisation of workers would bring. Unionisation is more appropriate for those companies that are strong enough financially and otherwise to handle the demands. In the same vein, this Action Plan recommends that CARICOM governments attempt to make a distinction between those services sectors strong enough to be fully opened and globally competitive and/or those in which Caribbean countries and the region as a whole might have a natural competitive or comparative advantage and those that have this potential but need some room to grow or to build the skills and capacity to compete with similar sectors on a global scale. Governments should be careful, in this regard, not to be seduced into propping up sectors and industries that are not likely to remain viable over time.

d. Banking, Securities and Related Financial Services: Integral to CARICOM's trade strategy to expand market access that results in increased trade and investment in the Caribbean is access and use of international financial services. Indeed this is a complex sector because financial sovereignty and control of currencies must be respected. However, in the last several years the role of banking, securities and insurance services has become central to services development and trade. Among the core issues that need to be addressed are: (i) the extent of obligations of non-discrimination; (ii) most-favoured nations treatment; (iii) foreign banks' and insurance companies' rights to establish subsidiaries or joint ventures, foreign banks providing financial information, data processing, financial advisory services, use of mutual funds, etc; (iv) in the insurance sector, access to marine, aviation, transport, insurance brokerage and re-insurance. Also incorporated in new access provisions should be the principle of expedited availability of services, making prior regulatory product approval not required.

It is <u>recommended</u> that CARICOM member states and the CARICOM Secretariat, cooperate closely with private groups, particularly those in the services sector, to ensure that laws, regulations and policies are implemented to remove barriers to international services trade but at the same time serve to provide Caribbean enterprises with commercial, competitive advantages. Services trade has become a driver of economic growth for most countries and the economies of Caribbean countries are highly dependent on tourism, finance and other services. Consequently trade programs with telecommunications as a central force, must be aggressively pursued,

V.3 Conclusions: Raising Awareness in Order to Engage All CARICOM Constituencies in Creating a Competitive Regional Information Society

Each of the preceding recommendations contains some component of awareness raising that is absolutely essential to the process as CARICOM governments attempt to build viable, competitive information societies and eventually one integrated regional information economy. Issues related to open source technology and software, the cross border trade in services, the role of the private sector in global trade negotiations, and the function of the UWI in tracking the evolution of the ICT, telecommunications and trade in services sectors in order to take advantage of useful synergies and themselves contribute to awareness raising are all critical issues that have not been adequately ventilated and therefore are not well understood. However, there remains the important first step of designing and effectively implementing awareness-building programmes involving both business and government entities and addressing the critical importance of creating a regional information economy and society, and the nature of its ultimate character. It is also important, in this regard, to extend awareness-building efforts to other communities and stakeholders at a grassroots level, including NGOs, so that Caribbean citizens as a whole are more knowledge about how issues affecting the evolving information society impact on the bottom line of their daily activities and efforts.

The implementation of such awareness-building measures should include sector/industry assessments and consultations aimed at providing relevant information and expanding effective discussion around the creation of “national services development and trade policies.” It would be important, in this regard, to document the strengths and weaknesses of services sectors in the Caribbean, their competitiveness and growth potential, before designing positions for bilateral or multilateral negotiations. In addition, studies should be conducted of the policies and practices of other countries and regions where “information societies” (digital economies) are advancing rapidly.

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ANNEXES

1. **Summary of WTO Telecommunications Commitments on Market Access, National Treatment and Regulatory and Trade Principles and Current (May 2006) Situation in the Sector**
2. **Submarine cable and cellular mobile systems in the Caribbean**
3. **Technology overview**
4. **Terms of reference of project**

Summary of WTO Telecommunications Commitments on Market Access, National Treatment and Regulatory and Trade Principles and Current (May 2006) Situation in the Sector

a. CARICOM MEMBER STATES AND THE DOMINICAN REPUBLIC

WTO Commitments and Current Situation in the Sector

Country	Summary of WTO Commitments on Market Access and National Treatment (15 February 1997 or after)	Commitments on Regulatory and Trade Disciplines and Legal Obligations; Foreign Ownership Limits	Current Situation
Antigua & Barbuda	Voice telephone services are reserved to exclusive domestic operator (APUA) indefinitely, and to the exclusive international operator (C&W) until 2012 Basic telecommunication services for public use (circuit and packet switched data, telex, telegraph, private leased circuit services) are reserved to exclusive operators until 2012 Value added services (electronic mail, on line data processing and retrieval, EDI, enhanced fax, code and protocol conversion) and Internet are opened without limitations except for the obligation to use the transmission facilities of the exclusive operators Closed User Groups (packet- and circuit-switched data services) can be provided but only on the network facilities of the exclusive network operators Terrestrial-based mobile services (voice, data, PCS, paging, trunking) opened without limitations to foreigners if capital invested is greater than US$ 500,000. CARICOM nationals are to be treated the same as nationals of Antigua & Barbuda, ie. they do not have to invest a minimum of US$ 500,000 to get a licence. Satellite-based mobile services (same) are opened but only through arrangements with exclusive international operator Fixed satellite services are opened without limitations except for the obligation to use the transmission facilities of the exclusive international operator (C&W) Telecom equipment sales, rentals, maintenance etc. are opened without limitations Teleconferencing can be provided except for the obligation to use the transmission facilities of the exclusive international operator (C&W)	Commits to all non-discrimination, transparency, regulatory, licencing interconnection, competitive safeguard, and access to and use provisions of the framework agreement, the Telecommunications Annex and the regulatory principles Reference Paper. There are no foreign ownership restrictions. Submitted an MFN Exemption List to enable the Government to extend to nationals of other Caricom-Member countries treatment equal to its own nationals with respect to joint venture requirements	Cable & Wireless has exclusivity (until 2012) for international communications and the quasi-government statutory company, Antigua Public Utilities Authority (APUA) maintains a monopoly for a local fixed line services. Competition is allowed in the domestic mobile market where there are three operators (APUA PCS, C&W, and Cingular which was acquired recently by Digicel). Competition is also allowed in the provision of Internet access, with two providers C&W and local operator Antigua Computers Technologies (ACT) currently in the market. The agency responsible for setting policy and promulgating laws and regulations for the sector is an arm in the Ministry of Information, Broadcasting and Telecommunications, which is headed by the Telecommunications Minister. There is no independent regulatory authority at present; however, since coming to power in the general elections on March 23, 2004 the new Government has openly talked about liberalizing the sector and has since then granted an operating license to another company, KaribCable Kelcom International, to provide cable television and broadband Internet services. Additionally, several ISP and WiMAX licences have been issued and there are also plans to issue additional new licences. Antigua and Barbuda is also part of the new SCF cable that is expected to be landed and lit by the end of 2007. In October 2005, the Minister of Telecommunications put forward a draft policy document which was to enable full liberalization of the telecommunications sector before the end of 2006.

WTO Commitments and Current Situation in the Sector

Country	Summary of WTO Commitments on Market Access and National Treatment (15 February 1997 or after)	Commitments on Regulatory and Trade Disciplines and Legal Obligations; Foreign Ownership Limits	Current Situation
The Bahamas	The Bahamas is not a member of the WTO. It has applied for accession.		Telecommunications service provision is dominated by one company, the 100% state owned The Bahamas Telecommunications Company Limited (BTC), which has exclusivity for mobile and is one of only two fixed voice telephone licence holders. All other services except cable TV distribution are open to competition. The Telecommunications Sector Policy of July 2001 (revised in October 2002) states the Government's intention to sell 49% of the shares of the newly corporatized BTC to a strategic investor and to introduce competition in the cellular mobile market one year after (the partial) privatization and further competition in fixed voice and leased circuit (for voice) services (currently a duopoly) two years after privatization subject to a review of the status of the sector by the PUC at the time. All other telecommunications networks and services including value added services, customer premises equipment, and Internet access (except to provide voice) were opened to full competition in July 2001 when the Policy was issued. Internet service provision requires an individual licence. In July 2004 the government decided to end the process of privatizing 49 % of the newly corporatized BTC (begun in October 2002) because none of the offers that it had received met its expectations especially with respect to the amounts being offered. The Telecommunications Act, 1999, which establishes the framework for competition in the sector, distinguishes between the roles of the Minister (responsible for the sector) whose main function is to make policy and the regulator, the Public Utilities Commission (PUC), which implements this policy and "promotes effective and sustainable competition in the sector". The latter was established in 1993 by the Public Utilities Commission Act of 1993 (Amended in 2000). Broadcasting including cable TV is regulated by the Broadcasting Commission under the responsibility of the Ministry of Tourism. There is no competition law in The Bahamas. It is, however, a condition of operators' and service providers' licences that they not engage in anti-competitive practices and that they comply with any instructions of the PUC in this respect. The Act introduces the concept of individual and class licences; however, so far no class licences have been issued except for spread spectrum and other low power radiocommunication devices. BTC is operating under a temporary (interim) licence, which is to be replaced by a permanent licence, when it is privatized. SRG, the only other fixed voice services provider is obliged to use the Bahamas II cable system for international connections and to acquire international call termination services from BTC as BTC is the only available licenced provider of transmission capacity for voice telephone services. BTC is the landing partner for the Bahamas II cable in The Bahamas. There is only one cable TV operator, Cable Bahamas, which has a 15-year

WTO Commitments and Current Situation in the Sector

Country	Summary of WTO Commitments on Market Access and National Treatment (15 February 1997 or after)	Commitments on Regulatory and Trade Disciplines and Legal Obligations; Foreign Ownership Limits	Current Situation
Barbados	Voice telephone, data transmission (circuit and packet switched), telex, telegraph, faxsimile and private leased circuit services offered to the general public are reserved to exclusive domestic and international operators (C&W) until 2012 when their exclusive licences expire. Voice telephone, data transmission (circuit and packet switched), telex, telegraph, and faxsimile services for non public use (closed user groups) can be provided until 1 January 2012 only on the network facilities of the exclusive network operators and thereafter freely. Two ended breakout is not permitted. Value added services (electronic mail, on line data processing and retrieval, EDI, enhanced fax, code and protocol conversion) and Internet are opened without limitations. Terrestrial- and satellite-based mobile services including cellular, data, PCS, and paging are permitted as of 1 January 1999. Fixed satellite and VSAT services for non-public use are permitted however without two ended breakout. Telecommunications equipment sales and rentals are not restricted. Commitment made in 1998.	Commits to all non-discrimination, transparency, regulatory, licencing interconnection, competitive safeguard, and access to and use provisions of the framework agreement, the Telecommunications Annex and the regulatory principles Reference Paper. There are no foreign ownership restrictions.	The sector was fully liberalized on 21 February 2005 (start of Phase 3 of a 3 phase transition period) when the international telecommunications market was opened. On that day C&W surrendered its exclusive international services licence and three companies, Antilles Crossing, Digicel, and Telebarbados along with C&W were awarded non exclusive licences. The start of Phase 3 was dependent on the Government's implementing a new regulatory framework (including policies, laws, regulations, guidelines) and introducing an incentive based (price cap) price controls scheme. In October 2001 the Government and C&W had signed an MOU which foresaw a three phased transition to a fully open telecommunications market in Barbados and allowed Bartel (domestic) and BET (international) along with cellular mobile and data services affiliates to amalgamate. At the start of Phase 1 on 1 December 2001 the following services were liberalized: mobile, some value added services (VAS) and the provision of customer premises equipment (CPE), resale of C&W's international voice telephone services, some private (call center) networks and inside wiring, were opened to competition. In March 2003 three new operators. Digicel, AT&T Wireless (which has been acquired by Digicel), and a local operator, Sunbeach were awarded cellular mobile licences to compete with the incumbent C&W. Domestic fixed services were liberalized at the start of Phase 2 on 10 November 2003 when C&W (Barbados) obtained a non-exclusive licence and markets for customer premises equipment (CPE) and domestic fixed wireless facilities-based services markets were liberalized. Digicel and ATT Wireless (since acquired by Digicel) began offering service in February 2004 after agreement on interconnection rates was reached between C&W and each of the new entrants (under pressure from the Government) and the necessary interconnection equipment had been installed in C&W's premises. On 13 September 2004 Antilles Crossing and Kelkom International were awarded submarine cable landing licences. A new Telecommunications Act which provides for a fully liberalized telecommunications market was proclaimed on 30 September 2002 and a set of enabling regulations (incl. interconnection, licencing, universal service, standards, data communications, spectrum management, and numbering) was issued in July 2003. These regulations are considered by some as being complicated, repetitive of provisions found in the Act and somewhat convoluted. The Act divides responsibility for regulation of the telecommunications sector between the Minister responsible for the sector, currently the Minister of Energy & Public Utilities, and the Fair Trading Commission (FTC), established under the Fair Trading Commission Act, 2000. Some observers argue that this bifurcation of responsibilities creates confusion because it gives the Ministry, which sets policy, the additional responsibility of technical (but not economic) regulation of the sector including control and the

WTO Commitments and Current Situation in the Sector

Country	Summary of WTO Commitments on Market Access and National Treatment (15 February 1997 or after)	Commitments on Regulatory and Trade Disciplines and Legal Obligations; Foreign Ownership Limits	Current Situation
Belize	Basic telecommunication services for public and private use (voice telephone, circuit and packet switched data, telex, telegraph, private leased circuit services, facsimile) are reserved for the exclusive operator (BTL) indefinitely Some value added services (electronic mail, voice mail, and enhanced facsimile) and Internet are reserved for the exclusive operator (BTL) indefinitely Other value added services (on-line data processing and retrieval, EDI, code and protocol conversion) and Internet are reserved for the exclusive operator (BTL) until 2008 Paging is reserved for the exclusive operator (BTL) until 2003 Trunking is reserved for the exclusive operator (BTL) until 2003 Teleconferencing is reserved for the exclusive operator (BTL) until 2003	Commits to all non-discrimination, transparency, regulatory, licencing interconnection, competitive safeguard, and access to and use provisions of the framework agreement, the Telecommunications Annex and the regulatory principles Reference Paper. There is a 25% foreign ownership restriction.	The Public Utilities Commission (PUC) has so far issued three Individual License, one each to The Belize Telecommunications Limited (the Incumbent), The International Telecommunications Limited (in Receivership) both in December 2002 and Speednet Communications Limited (actively operating) in August 2003 which allows the 3 of them to provide the full telecommunication services to the country. BTL and Intelco were issued their licences in December 2002 to coincide with the entry into force of the new telecommunications act and the termination of BTL's monopoly. In addition there are about 20 ISPs that have class licences. Of these only about 10 are operating. There are also 29 local cable TV operators throughout the country. Some of these also offer cable modem high speed Internet access in competition with the incumbent telephone company's ADSL service. Telecommunications companies are subject to a 19% business tax. The Belize Telecommunications Act, 2002 foresees the implementation of a competitive telecommunications sector to provide users with reliable and affordable telecommunications services throughout Belize, meet their economic and social requirements including for the handicapped and provide them with access to emergency services, promote investment and innovation in the sector and ensure the efficient use of the radio frequency spectrum. The 2002 Act replaced the Telecommunications Act of 1987 under which the newly privatized (then 25% owned by British Telecom) Belize Telecommunications Limited (BTL) had a 15 year exclusive licence, until 29 December 2002. The main features of the new Act are the following: • The task of regulating the sector is assigned to the Public Utilities Commission (PUC) which was established in 1999 and is currently subject to the provisions of the Public Utilities Commission Act, 2000. The PUC is responsible for technical and economic regulation of the sector and for implementing policy which is set on behalf of the Government by the Minister responsible for the sector but who is not necessarily the same minister (the Minister of Public Utilities) to whom the PUC reports. • A license (granted by the PUC) is required to operate a telecommunications network, to provide a telecommunications service (including value added services) that offers real time voice or data, to operate a system that uses the radio frequency spectrum and to land and operate a submarine cable system. • All licensed public telecommunications services providers are required to provide interconnection to all other telecommunication licensee.under conditions which are consistent with the principles of the GATS Reference Paper, namely, under non discriminatory, transparent terms, in a reasonable time frame, at any technically feasible point, unbundled and at cost oriented prices. The obligation to provide collocation and infrastructure sharing is also foreseen in

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Dominica	Voice telephone services for public and private use are reserved for the exclusive operator (TOD) indefinitely Basic telecommunication services for public use (circuit and packet switched data, telex, telegraph, facsimile, private leased circuit services) reserved for exclusive operator (TOD) indefinitely Closed User Groups (packet- and circuit-switched data services, facsimile) can be provided but only on the network facilities of the exclusive network operator (TOD) Value added services (electronic mail, on line data processing and retrieval, EDI, enhanced fax, code and protocol conversion) and Internet can be provided without limitations except for the obligation to use the transmission facilities of the exclusive operator (TOD) Terrestrial-based mobile services (voice, data, PCS, paging, trunking) reserved for exclusive operator (TOD) indefinitely Satellite-based mobile services (same) can be provide but only through arrangements with the exclusive operator (TOD) Fixed satellite services can be provided without limitations except for the obligation to use the transmission facilities of the exclusive operator (TOD) Telecommunications equipment sales, rentals, maintenance etc. can be provided without limitations Teleconferencing can be provided without limitations except for the obligation to use the transmission facilities of the exclusive operator (TOD)	Commits to all non-discrimination, transparency, regulatory, licencing interconnection, competitive safeguard, and access to and use provisions of the framework agreement, the Telecommunications Annex and the regulatory principles Reference Paper. There are no foreign ownership restrictions	The five OECS states (Dominica, Grenada, Saint Kitts and Nevis, Saint Lucia, and St. Vincent & The Grenadines) established a new legal and regulatory framework based on a common model in ? This included a regional regulatory authority (ECTEL) established by treaty on 4 May 2000, National Telecommunications Regulatory Commissions (NTRCs) in each state and a joint capability to manage the radio frequency spectrum of the 5 states and a jointly negotiated agreement with Cable & Wireless terminating its monopoly in the five states. A two phase transition to a liberalized telecommunications sector began on 1 April 2001. During Phase 1 licenses were issued to ISPs and cellular mobile telephone operators. Phase 2, full liberalization, began on ? at which time C&W was issued new non-exclusive operating licenses in each of the five states. Licenses and frequency authorizations (including for mobile services) are awarded on a first-come-first serve basis. ECTEL receives applications, evaluates them against pre-established criteria and if it determines that the application is worthy of being awarded a licence makes a recommendation to the NTRCs. The NTRCs can accept or reject ECTEL's recommendations. Any rejection must however be explained to the applicant. So far in Dominica in addition to C&W's licences 2 fixed, 2 ISP and 2 mobile licences have been awarded.

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Country	Summary of WTO Commitments on Market Access and National Treatment (15 February 1997 or after)	Commitments on Regulatory and Trade Disciplines and Legal Obligations; Foreign Ownership Limits	Current Situation
Dominican Republic	Basic telecommunication services (voice telephone, telex, telegraph, facsimile, private leased circuit services), paging, and maritime mobile and aeronautical mobile services can be provided without limitations except for the need to establish a legal presence in the Dominican Republic Data transmission services can be provided without limitations Commitment made at the Group on Basic Telecommunications and at the end of the Uruguay Round.	Commits to all non-discrimination, transparency, regulatory, licencing interconnection, competitive safeguard, and access to and use provisions of the framework agreement, the Telecommunications Annex and the regulatory principles Reference Paper. There are no foreign ownership restrictions	Telecommunications services have been provided by private companies since 1930. CODETEL (Compania Dominicana de Telefonos), later GTE and now Verizon Dominicana held a monopoly until 1992 when a concession was awarded to TRICOM, which in addition to fixed telephone services provides cellular mobile, Internet (dial up, ADSL and cable modem) and cable TV services. All America Cable and Radio (AAC&R), now Centennial, was awarded a licence a short time later. Ley 153-98, promulgated in May 1998 has, inter alia, the following general objectives: (i) promote the development of the telecommunications sector based on the principle of universal access; (ii) guarantee sustained competition by implementation of provisions in the Law; (iii) defend the rights of consumers of telecommunications services as well as the interests of telecommunications operators and service providers applying appropriate sanctions to one and the other when they fail to meet their obligations; and (iv) guarantee the rational and effective use of the radio frequency spectrum. The Law also created an independent, administratively decentralized telecommunications regulator, Instituto Dominicano de las Telecomunicaciones (INDOTEL) with judicial and financial autonomy and legal personality (Art. 76). Law 153-98 is based on a classification of four types of services which may be public or private: (i) bearer services, (ii) end or teleservices; (iii) value added services; and (iv) broadcast services. Concessions are required to provide a public telecommunications services whereas licences are required to use the radio frequency spectrum. All concessions and licences are awarded by means of a public bidding process. Since Ley 153-98 was passed INDOTEL has issued a number of implementing regulations, developed a full set of technical plans and internal procedures. Of the 24 facilities-based concession holders there are only 8 which are actually operating. Four of the latter, Verizon Dominicana, Orange Dominicana, a subsidiary of France Telecom, TRICOM, and Centennial, are operating mobile networks with respective market shares of 40%, 25%, 20% and 15%. There are only two fixed line operators, Verizon Dominican and TRICOM. Two smaller companies, Economitel and Turitel, resell long distance telephone services and operate call centres using their own gateways and satellite links. Skytel and Skymax ?????

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Country	Summary of WTO Commitments on Market Access and National Treatment (15 February 1997 or after)	Commitments on Regulatory and Trade Disciplines and Legal Obligations; Foreign Ownership Limits	Current Situation
Grenada	Basic telecommunication services for public use (voice telephone, circuit and packet switched data, telex, telegraph, private leased circuit services) are reserved for exclusive operator (Grentel) until 2006 Closed User Groups (packet-and circuit-switched data services, satellite-based mobile services, fixed satellite services, and teleconferencing) can be provided but only on the network facilities of the exclusive network operator (Grentel) Some value-added services (electronic mail, voice mail) and facsimile are reserved for the exclusive operator (Grentel) until 2006 Other value added services (on line data processing and retrieval, EDI, enhanced fax, code and protocol conversion) and Internet can be provided without limitations except for the obligation to use the transmission facilities of the exclusive operator (Grentel) Terrestrial-based mobile services (voice, data, PCS, paging) are reserved for exclusive operator (Grentel) until 2006 Satellite-based mobile services and fixed satellite services for public use (same) can be provide but only through arrangements with exclusive operator (Grentel) Trunking can be provided without limitation but foreign ownership is limited to 49% Telecommunications equipment sales, rentals, maintenance etc. can be provided without limitations but only in joint venture arrangements with Grenadian nationals Teleconferencing is reserved for the exclusive operator (Grentel) until 2006	Commits to all non-discrimination, transparency, regulatory, licencing interconnection, competitive safeguard, and access to and use provisions of the framework agreement, the Telecommunications Annex and the regulatory principles Reference Paper. There is a 49% foreign ownership limitation for trunking licences	The five OECS ECTEL member states (Dominica, Grenada, Saint Kitts and Nevis, Saint Lucia, and St. Vincent & The Grenadines) established a new legal and regulatory framework based on a common model by treaty on 4 May 2000. This included the establishment a regional regulatory authority (ECTEL), National Telecommunications Regulatory Commissions (NTRCs) in each state and a joint capability to manage the radio frequency spectrum of the 5 states and a jointly negotiated agreement with Cable & Wireless terminating its monopoly in the five states. A two phase transition to a liberalized telecommunications sector began on 1 April 2001 with the passage of new telecommunications acts in each of the 5 member states. During Phase 1 licenses were issued to ISPs and cellular mobile telephone operators. Phase 2, full liberalization, began at which time C&W was issued new non-exclusive operating licenses in each of the five states. Licenses and frequency authorizations (including for mobile services) are awarded on a first-come-first serve basis. ECTEL receives applications, evaluates them against pre-established criteria and if it determines that the application is worthy of being awarded a licence makes a recommendation to the NPRCs. The NPRCs can accept or reject ECTEL's recommendations. Any rejection must however be explained to the applicant. So far in Grenada Individual licences have been granted as follows: 3 fixed Public Telecommunications Licences (C&W, Global Network Providers, Trans-World Telecoms Caribbean Ltd.), 5 Public Mobile Telecommunications Licences (C&W, Digicel, Global Network Providers Inc., Trans-World Telecoms Caribbean Ltd. and AT&T Wireless) and 2 Internet Networks/Services (C&W, Global Network Providers Inc). The following class licences have also been awarded: 3 ISP; 1 each for Land, Maritime, and Aeronautical Mobile services .

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Country	Summary of WTO Commitments on Market Access and National Treatment (15 February 1997 or after)	Commitments on Regulatory and Trade Disciplines and Legal Obligations; Foreign Ownership Limits	Current Situation
Guyana	On-line information and data base retrieval can be provided without limitation with the exception that this service has to be provided over the network facilities of the monopoly operator. Commitment made at the conclusion of the Uruguay Round. Guyana has not made any subsequent commitments	No commitment on Reference Paper nor on foreign ownership.	The legal and regulatory framework has not changed since 1990 when the Telecommunications Act was passed and when the newly privatized Guyana Telephone and Telegraph Company (GT&T), which is 80 % owned by Atlantic Tele-Networks (ATN) of the United States of America and 20 % by the Government, obtained a 20-year exclusive licence for all national and international voice and data services. The exclusivity ends in 2010 but is renewable for another 20 years at the request of the company. There is competition in the mobile (3 licenses – GT&T, U-Mobile (Cellular) Inc. and Caribbean Telecommunications Limited). Internet access (half dozen companies out of about 17 who are registered), terminal equipment sales, inside wiring, and call centre markets. U-Mobile (Cellular) Inc. and CTL must use GT&T's network to provide international services. The Telecommunications Act, 1990 and the Public Utilities Commission Act, 1999 define the legal framework for the sector. The former established the Office of the Director of Telecommunications, whose key functions include licensing and monitoring of licenses. The position of the Director of Telecommunications was vacan until November, 2006. The latter established the Public Utilities Commission (PUC). The Telecommunications Act of 1990 along with GT&T's 1990 Licence are based, respectively, on the British Telecommunications Act of 1984 and the British Telecommunications PLC License also of 1984 whereas the Public Utilities Commission Act Purchase Agreement (for GT&T) are based on USA and North American jurisprudence. Neither of these two acts provides an adequate framework to cater for the institutional and technical aspects of a modern telecommunications sector. The demarcation of responsibilities between the PUC and the Director remains not clear. The sector is characterized by excessive litigation The Government has stated its intention to liberalize the sector and drafted a sector policy and new laws.. In early 2004 the government had discussed with C&W (and separately with ATN) a possible sale of GT&T to C&W.

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Haiti	Haiti has not made any telecommunications commitments		The current legal framework for telecommunications in Haiti is based on a 1977 decree which gives the State monopoly powers with respect to the sector and by which it can award as many concessions and permits as it wants to individuals and/or legal persons. At the time the national telecommunications company Les Télécommunications d'Haïti S.A.M. (TELECO), which was established in 1968, had a monopoly on virtually all telecommunications services. Attempts to privatize TELECO have so far failed. New licences have been awarded since 1995; however on a case-by-case basis and without much transparency. The 1977 Decree also establishes the Fond National des Telecommunications to be administered by the Conseil National de Développement et de Planification (CONADEF) and intended to be used for developing systems, improving services and supporting the activities of the centre de formation Professional des telecommunications The agency responsible for regulating the sector, the Conseil National des Télécommunications (CONATEL), which was established by decree in 1969, is a decentralized unit of the Ministère des Travaux Publics, Transport et Communication (MTPTC) which also has a specialized unit, Direction des Communications, responsible for the sector. CONATEL oversees the technical aspects of the telecommunications regulation including the spectrum as described in the 1977 Decree and advises the Government on matters related to the sector. This situation has created ongoing tensions between the CONATEL and the Direction des Communications in the Ministry According to another 1969 decree which defines its technical and administrative structure. CONATEL is supposed to have a board with representatives of different sectors and an Executive Director as the head of the organization. In reality, no board has ever been appointed and the Executive Director has had full power to run the institution. Also in the opinion of industry CONATEL has never been independent of the Government and its decisions have often been influenced by the President, who normally appoints the Executive Director. Exceptionally, the current Executive Director was appointed by the Minister of Public Works, Transport and Communications with the result that the relation between the regulator and the Ministry has been better. International services have traditionally been provided by the state owned monopoly, TELECO. Some ISPs, the new cellular mobile operators, banks, and other institutions have, however, been issued licences to connect directly to their international correspondents via VSAT terminals. Other companies use land based microwave networks to connect into submarine cables landing in the Dominican Republic using their own facilities.

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Country	Summary of WTO Commitments on Market Access and National Treatment (15 February 1997 or after)	Commitments on Regulatory and Trade Disciplines and Legal Obligations; Foreign Ownership Limits	Current Situation
Jamaica	Voice telephone services for public and private use are reserved to the exclusive operator (TOJ) until September 2013 Other basic telecommunication services (telex, telegraph, facsimile, private leased circuit services) are reserved for exclusive operator (TOJ) until September 2013 Closed User Groups (voice telephone, packet-and circuit-switched data services, video) in free zones cannot be interconnected with the local public switched network until September 2013 Value added services (electronic mail, voice mail, on line data processing and retrieval, EDI, code and protocol conversion) and Internet can be provided without limitations Enhanced facsimile services are reserved for exclusive operator (TOJ) until September 2013 Terrestrial-based digital mobile telephone services are reserved to an exclusive operator for 5-10 years Other digital, terrestrial-based mobile services (data, PCS, paging, trunking) can be provided without limitations; however trunked radio networks cannot be interconnected with the local public switched network until September 2013. Domestic satellite-based mobile telephone services are reserved to exclusive operator for 5-10 years For international satellite-based mobile telephone services and international fixed satellite services the exclusive operator (TOJ) has right-of-first refusal until September 2013 Telecommunications equipment sales, rentals, maintenance etc. can be provided without limitations Teleconferencing can be provided without limitations except for the obligation to use the transmission facilities of the exclusive operator (TOJ)	Commits to all non-discrimination, transparency, regulatory, licencing interconnection, competitive safeguard, and access to and use provisions of the framework agreement, the Telecommunications Annex and the regulatory principles Reference Paper. There are no foreign ownership restrictions.	Jamaica has made probably the most significant progress of all countries in the region in liberalizing its telecommunications sector. The process of reform began in 1998 when the Government adopted a Telecommunications Policy containing the principles for a policy framework for the future including a path to reform. This opened the way to the Government's renegotiating with Cable & Wireless' (*C&WJ*) its licence, which gave it virtual exclusivity for operating all telecommunication networks and providing all telecommunications services in Jamaica until 2013. The new Telecommunications Act passed in 2000 confirmed a three phased transition to a fully liberalized telecommunications market which had been agreed with Cable & Wireless in these negotiations. Mainly because of this and in spite of the fact that it contains many of the important provisions required to manage and regulate a liberalized telecommunications sector, the Act has always been considered to be transitional in the period until full liberalization has been achieved. The Act also established the Spectrum Management Authority (SMA), the Jamaica Telecommunications Advisory Council (JTAC) and a Telecommunications Appeals Tribunal. On March 1, 2000 at the start of Phase 1 mobile and data transmission services including Internet access (using *CWJ's* facilities), the provision of single line and multi-line customer premises equipment, the wholesaling of *CWJ's* international switched voice minutes and free trade zone carrier services were opened to competition. During this phase two additional mobile licenses were awarded by way of a spectrum auction. On September 1, 2001, the start of Phase 2, WLL, the resale of CWJ's switched domestic voice minutes and Internet access over facilities of subscriber television operators were opened. The whole telecommunications market was liberalized on 1 March 2003, three years after the passage of the Act. Since then there have been nearly 400 licenses of all types issued to 137 companies. Among these there are about 60 international carrier licences, 77 Internet Service Providers (ISPs), *C&WJ's* facilities based domestic and international licences and 3 cellular mobile licences (*C&WJ*, Digicel, and Oceanic Digital). In the broadcasting sector there are 51 regional cable TV operators, 18 radio broadcasters and 3 free-to-air national television operators. These are regulated by the Broadcasting Commission. In addition to the Telecommunications Act, 2000 the following are the primary legislative instruments for telecommunications sector in Jamaica today: The Office of Utilities Regulation Act, 1995; The Broadcast and Rediffusion Act, 1949 (amended in 1986 and 2001), The Office of Utilities Regulation Act, 1995; The Radio and Telegraph Control Act, 1970; The Television and Sound Broadcasting Regulations (1996); the Fair Competition Act, the proposed Consumer Protection Act, and the Post Office Act. Institutionally policy setting responsibility for the sector rests primarily with the Minister of Commerce, Science and Technology with Energy, The Minister of

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Montserrat	Montserrat, a Crown Colony of the UK is not by itself a member of the WTO.		Cable and Wireless (West Indies), which provides both basic and value added services including cellular telephone and Internet access, has an exclusive licence to provide and operate domestic and international services in Montserrat until 18 March 2007. C&W has a right-of-first refusal for the provision of any new system and/or service. There are no restrictions in the provision of customer premises equipment (CPE). A private company provides a 35-channel cable TV service throughout the island, primarily US entertainment programming and there are several private and government owned radio stations and one TV station. Telecommunications policy is the responsibility of the Chief Minister who is also responsible for information and broadcasting. The Ministry of Communications, Works, and Public Utilities regulates the sector. It approves tariffs submitted to it by C&W as well as the price of the basic 12-channel cable TV service. The current legal framework consists of: The Telecommunications Act CAP 192 of 11 June 1951; The Telecommunications Rules dated 1 June 1951 made Under Section 18 of the Telecommunications Act (Regulations); and C&W's Operating Licence of 18 March 1987

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St. Lucia	Member of the WTO; participated I the Negotiating Group on Basic Telecommunications (NGBT) but made no commitments in 1997 at the conclusion of the negotiations on basic telecommunications nor earlier in 1995 at the conclusion of the Uruguay Round.		The five OECS ECTEL member states (Dominica, Grenada, Saint Kitts and Nevis, Saint Lucia, and St. Vincent & The Grenadines) established a new legal and regulatory framework based on a common model by treaty on 4 May 2000. This included the establishment a regional regulatory authority (ECTEL), National Telecommunications Regulatory Commissions (NTRCs) in each state and a joint capability to manage the radio frequency spectrum of the 5 states and a jointly negotiated agreement with Cable & Wireless terminating its monopoly in the five states. A two phase transition to a liberalized telecommunications sector began on 1 April 2001 with the passage of new telecommunications acts in each of the 5 member states. During Phase 1 licenses were issued to ISPs and cellular mobile telephone operators. Phase 2, full liberalization, began at which time C&W was issued new non-exclusive operating licenses in each of the five states. Up to now in St Lucia individual licences [1 fixed Public Telecommunications Licence (C&W), 3 Public Mobile Telecommunications Licences (C&W, Digicel, and AT&T Wireless) and 1 Internet Networks/Services (C&W)]; Class Licences [2 full and 1 restricted Internet Service Provider Licences, 1 Private Network/Services licence (Helen IT); and 3 International Simple Resale Licences)]. Antilles Crossing Limited has been granted an undersea cable landing license (See Section IV.2.2). An application for a cable landing licence from Island Fibre/Kelcom International is currently being evaluated. Both these companies obtained cable landing licenses in Barbados on 13 September 2004. C&W also operates a cable TV network, which covers the entire island. There is another operator, which has a small cable TV network in the south of Castries, the capital. Neither provides high-speed Internet access.

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Country	Summary of WTO Commitments on Market Access and National Treatment (15 February 1997 or after)	Commitments on Regulatory and Trade Disciplines and Legal Obligations; Foreign Ownership Limits	Current Situation
St. Vincent and the Grenadines	Member of the WTO; participated I the Negotiating Group on Basic Telecommunications (NGBT) but made no commitments in 1997 at the conclusion of the negotiations on basic telecommunications nor earlier in 1995 at the conclusion of the Uruguay Round.		The five OECS ECTEL member states (Dominica, Grenada, Saint Kitts and Nevis, Saint Lucia, and St. Vincent & The Grenadines) established a new legal and regulatory framework based on a common model by treaty on 4 May 2000. This included the establishment a regional regulatory authority (ECTEL), National Telecommunications Regulatory Commissions (NTRCs) in each state and a joint capability to manage the radio frequency spectrum of the 5 states and a jointly negotiated agreement with Cable & Wireless terminating its monopoly in the five states. A two phase transition to a liberalized telecommunications sector began on 1 April 2001 with the passage of new telecommunications acts in each of the 5 member states. During Phase 1 licenses were issued to ISPs and cellular mobile telephone operators. Phase 2, full liberalization, began at which time C&W was issued new non-exclusive operating licenses in each of the five states. So far the following licences have so far been granted: Individual licences [1 fixed Public Telecommunications Licence (C&W), 3 Public Mobile Telecommunications Licences (C&W, Digicel, and AT&T Wireless) and 2 Internet Networks/Services (C&W) and Karib Cable]; Class licences [3 Value Added Service Provider Licences; 4 Internet Service Provider; 4 Private Networks/Services Licences; and 5 International Simple Resale Licences]

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Country	Summary of WTO Commitments on Market Access and National Treatment (15 February 1997 or after)	Commitments on Regulatory and Trade Disciplines and Legal Obligations; Foreign Ownership Limits	Current Situation
St Kitts & Nevis	Electronic mail, voice mail, and on-line information and data processing can be provided without limitation Commitment made at the conclusion of the Uruguay Round. St Christopher & Nevis has not yet made any subsequent commitments	No commitment	The five OECS ECTEL member states (Dominica, Grenada, Saint Kitts and Nevis, Saint Lucia, and St. Vincent & The Grenadines) established a new legal and regulatory framework based on a common model by treaty on 4 May 2000. This included the establishment a regional regulatory authority (ECTEL), National Telecommunications Regulatory Commissions (NTRCs) in each state and a joint capability to manage the radio frequency spectrum of the 5 states and a jointly negotiated agreement with Cable & Wireless terminating its monopoly in the five states. A two phase transition to a liberalized telecommunications sector began on 1 April 2001 with the passage of new telecommunications acts in each of the 5 member states. During Phase 1 licenses were issued to ISPs and cellular mobile telephone operators. Phase 2, full liberalization, began at which time C&W was issued new non-exclusive operating licenses in each of the five states. Licenses and frequency authorizations (including for mobile services) are awarded on a first-come-first serve basis. ECTEL receives applications, evaluates them against pre-established criteria and if it determines that the application is worthy of being awarded a licence makes a recommendation to the NPRCs. The NPRCs can accept or reject ECTEL's recommendations. Any rejection must however be explained to the applicant. So far 2 fixed (C&W and The Cable), 1 ISP, and 3 mobile (CariGlobe, AT&T Wireless and C&W) licences have been awarded in St Kitts & Nevis.

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Country	Summary of WTO Commitments on Market Access and National Treatment (15 February 1997 or after)	Commitments on Regulatory and Trade Disciplines and Legal Obligations; Foreign Ownership Limits	Current Situation
Suriname	Fixed network infrastructure for local, domestic and international long distance for public use is reserved until 1 January 2003 for duopoly provision. Voice telephone services telex, facsimile, private leased circuit services and fixed satellite services for public use are reserved until 1 January 2003 for duopoly provision. Packet and circuit switched data transmission, Internet, Internet access services and teleconference services for public use are open; however, bypass of the duopoly operators is not permitted. Voice telephone services for non-public use are permitted only on the networks of the duopolies. Bypass and resale of excess capacity is not permitted. Mobile data, paging, trunking, telecommunications equipment sales and rental are unrestricted. Terrestrial and satellite based mobile services licences are to granted for 5 years until 1 January 2003. The Government will decide before this date if additional operators will be licenced thereafter.	Commits to all non-discrimination, transparency, regulatory, licencing interconnection, competitive safeguard, and access to and use provisions of the framework agreement, the Telecommunications Annex and the regulatory principles Reference Paper. There is a 40% foreign ownership limit in mobile operators	The regulatory framework for the sector is based on the new telecommunications law (Wet Telecommunicatievoorzieningen). The Act came into effect on April 16, 2007. As of that date the Telecommunication Authority Suriname (TAS) was officially legitimized as the new regulator in the telecommunication sector. The licence of a second operator, ICMS, awarded in 1998, was revoked in 2003 because of this company's failure meet its licence obligations and temporary interconnection obligations and after the company went bankrupt as a result of an interconnection dispute with Telesur. In conjunction with promulgating the new Act and enabling rules, decrees and resolutions the Government has stated its intention to license two and perhaps three new operators/service providers to compete with the stated owned incumbent monopoly, Telesur. In 2006 all organizations that had ever requested a concession were asked to update their business plans according to the "new" criteria which were published by the TAS. They had to submit their adjusted business plan within 4 weeks. In August 2006 the TAS advised the Minister responsible for telecommunication that the two companied, Intelsur-UTS and Digicel Suriname Ltd, are eligible to receive a concession to offer mobile services in Suriname next to Telesur. This advise was then submitted to the President. On the 1st November 2006, Intelsur and Digicel received a temporary license and on the 16th of April 2007 they received a concession to offer mobile services in Suriname. In the area of fixed services Suriname still has one provider, Telesur. In the area of mobile providers Suriname now has three, Telesur, Digicel Suriname Ltd. And Intelsur-UTS. These companies are in the process of launching their operations in Suriname. It is expected that this will be realized before the end of 2007. In October 2006, three entities competed with Telesuron internet services: RPBG, a private ISP Wireless ISP and VoIP provider, EDUCONS, a not-for-profit organization, which provides Internet access; and the Post Office, which provides a fixed wireless service in conjunction with EDUCONS, but whose legality in the absence of a proclaimed law has been questioned. Like Guyana and other Caribbean countries Suriname needs to rebalance its local and international calling charges before liberalization can take place. The present situation is that at least in the area of international calling charges some charges are still under consideration by the government.

WTO Commitments and Current Situation in the Sector

Country	Summary of WTO Commitments on Market Access and National Treatment (15 February 1997 or after)	Commitments on Regulatory and Trade Disciplines and Legal Obligations; Foreign Ownership Limits	Current Situation
Trinidad & Tobago	Basic telecommunication services for public use (telephone, circuit and packet switched data, telex, telegraph, private leased circuit services) reserved to monopoly until 2010 Value added services (on line data processing and retrieval, EDI,enhanced fax, code and protocol conversion) opened without limitations except the obligation to use the transmission facilities of the monopoly, TSTT Public, terrestrial-based mobile services (voice, data, PCS, paging, trunking) opened without limitations Public satellite-based mobile services (same) opened without limitations Private satellite-based mobile services (same) opened without limitations but only on satellite network of monopoly Fixed satellite services for private use opened without limitations on satellite network of monopoly Fixed satellite services for public use opened without limitations Telecom equipment sales, rental, maintenance etc. opened without limitations Teleconferencing and Closed User Groups-no commitment	Commits to all non-discrimination, transparency, regulatory, licencing interconnection, competitive safeguard, and access to and use provisions of the framework agreement, the Telecommunications Annex and the regulatory principles Reference Paper. There are no foreign ownership restrictions.	Based on a pro-competitive policy adopted in 1997 a new Telecommunications Act was passed by Parliament in July, 2001, amended by the Telecommunications (Amendment) Act, 2004 and promulgated in June 2004. Under the Telecommunications Act 2001, the Cabinet Minister responsible for Telecommunications is accountable for sector policy and the granting of licenses and concessions on recommendation of the regulator, the Telecommunications Authority of Trinidad and Tobago (TATT) which is headed by a Board and whose function is to regulate the sector including enforcing the new Telecommunications Act, determining and administering the universal services program, setting industry standards, managing the spectrum and numbers, and protecting consumers. In addition to telecommunications, the Minister of Public Administration and Information (currently responsible for telecommunications) is also responsible for broad policy formulation for e-government, e-commerce, e-learning and international relations pertaining to the ICT sector. A first set of enabling regulations (and corresponding policies) have been prepared and will be in force soon, these include: authorization framework; interconnection and access; spectrum management and fees methodology. Subsequent policies and regulations will deal with quality of service among operators, consumer rights, universal access and competition policy. Some stakeholders have criticized the process because the time given for public comment has been too short. Telecommunications Services of Trinidad & Tobago (TSTT), which is 51 % owned by Government and 49 %, by Cable & Wireless, is the only operator of a facilities-based telephone network and provider of fixed telephone service. On 23 June 2005 two companies Laqtel and Digicel were successful in obtaining frequencies for cellular mobile services by way of an auction. The process of drawing up a short list of bidders had begun almost a year earlier in August 2004. TATT subsequently recommended to the Minister that these two companies be awarded cellular mobile concessions. The Cabinet finally agreed on 27 October 2005. There are 10 ISPs including TSTT. A RFP for concessions/licences for international telecommunication services was issued by TATT in November 2004. Eleven companies submitted proposals by the cut off date of 10 January 2005. The Cabinet agreed with the recommendations of TATT to award five licences for the provision of international telecommunication services. In respect of cable television services five companies submitted applications for concessions. Existing licence holders were required to apply for concessions under the new Law. The Cabinet also agreed with the recommendation of TATT to award three licences. There is no limit on the number of cable TV concessions that can

Annex 1

Summary of WTO Telecommunications Commitments on Market Access, National Treatment and Regulatory and Trade Principles and Current (May 2006) Situation in the Sector

b. ASSOCIATE MEMBERS OF CARICOM

WTO Commitments and Current Situation in the Sector

Country	Summary of WTO Commitments on Market Access and National Treatment (15 February 1997 or after)	Commitments on Regulatory and Trade Disciplines and Legal Obligations; Foreign Ownership Limits	Current Situation

WTO Commitments and Current Situation in the Sector

Country	Summary of WTO Commitments on Market Access and National Treatment (15 February 1997 or after)	Commitments on Regulatory and Trade Disciplines and Legal Obligations; Foreign Ownership Limits	Current Situation
Anguilla	Anguilla, a Crown Colony of the UK is not by itself a member of the WTO.		On April 11, 2003 the Government of Anguilla signed an agreement with C&W (West Indies) liberalizing the telecommunications sector in Anguilla (population 13,000). Under this Agreement C&W Anguilla was to be issued a new operator licence which would allow it to provide the same telecommunications services that was providing at the time of the Agreement including a cellular mobile service, but on a non exclusive basis. The Agreement also allowed C&W Anguilla to rebalance certain of its tariffs. In conjunction with the signing of this Agreement the Government on 10 June 2003 passed the Telecommunications Act and on 17 June 2003, the Public Utilities Commission (PUC) Act. The former came into force on 10 June 2003 but The PUC Act was not proclaimed until 7 April 2004. The Agreement has attached to it Regulatory Principles (Schedule 3) and a preliminary Telecommunications Code (Schedule 7), which along with the Telecommunications and PUC Acts form the basis of the new regulatory framework. Administration of the telecommunications sector is divided between the Ministry and the PUC. The former is responsible for planning and setting policy for the sector, for managing the spectrum, and for administering the numbering plan and Internet domain names. The latter is responsible for regulating the sector including, inter alia, implementing and enforcing the provisions of the Telecommunications Act, regulating prices, implementing standards, determining licence applications, collecting fees, helping to resolve disputes, and protecting consumers' rights. The Telecommunications Act requires a licence to operate a public telecommunications network and to provide a public telecommunications service and a frequency authorization to use the radio frequency spectrum but like Trinidad and Tobago Telecommunications Act, 2001 prior to it being amended in 2004 requires no licences, concessions or authorizations to provide value added services, closed user group services, and private telecommunications services. The new regulatory framework establishes a fair, transparent, non discriminatory interconnection regime in which network elements will be disaggregated and prices will be cost based and dominant operators is required to publish a reference interconnection offer. Operators of public telecommunications networks are obliged to provide interconnection and access to their facilities. The Agreement foresaw a three phased transition to a fully liberalized telecommunications market in Anguilla. On 10 June 2003, at the start of Phase 1, domestic mobile, value added (incuding Internet access), closed user group and private telecommunications services were opened to competition. During this Phase C&W Anguilla was able to maintain its exclusivity in the operation of public telecommunications networks and the provision of public telecommunications services. C&W Anguilla obtained a new non-exclusive licence at the same time as two new mobile operator licences which were awarded by way of tender during this Phase. In March 2004 the Government completed the tender to grant two new mobile operator licences, one to Weblinks, a local operator (in September 2004) and a second, to Wireless Ventures Anguilla Limited (then majority owned by AT&T Wireless) on November 5, 2004. AT&T Wireless's share was acquired by Cingular and then in June 2005 by Digicel which launched service on 2 December 2005. During Phase 2 which began on 19 July 2004 any holder of a

WTO Commitments and Current Situation in the Sector

Country	Summary of WTO Commitments on Market Access and National Treatment (15 February 1997 or after)	Commitments on Regulatory and Trade Disciplines and Legal Obligations; Foreign Ownership Limits	Current Situation
British Virgin Islands (BVI)			In October 2005 the Government issued a policy statement and timetable for liberalizing the telecommunications sector in the BVI. In the policy it is proposed to draft a new pro-competition Telecommunications Act and regulations and establish an independent regulator (The Telecommunications Regulatory Commission or TRC) which in addition to regulating the sector will be responsible for issuing (with consent of the Minister for network licences), supervising and enforcing network and services licences, type approval of customer premises equipment, advising the Minister on telecommunications matters, managing numbers and eventually the spectrum, administering a universal services fund, protecting consumers. It is also proposed to licence four cellular mobile operators including C&W and Digicel via a beauty contest as opposed to an auction and liberalize the services and customer premises equipment markets. Under the new arrangements the Minister will remain responsible for setting policy, international relations and initially at least spectrum management.

WTO Commitments and Current Situation in the Sector

Country	Summary of WTO Commitments on Market Access and National Treatment (15 February 1997 or after)	Commitments on Regulatory and Trade Disciplines and Legal Obligations; Foreign Ownership Limits	Current Situation
Cayman Islands	The Cayman Islands, a Crown Colony of the UK is not by itself a member of the WTO.		The telecommunication market in the Cayman Islands was opened in 2003 with the establishment of the only convergent (ICT) regulator in the Caribbean, the Information and Communication Technology Authority (ICTA) whose responsibilities include the promotion of competition in ICT networks and services, determining categories of licences for ICT networks and services and granting these licences, resolving interconnection, facilities sharing and other disputes, managing the radio frequency spectrum and the Cayman Islands' .ky Internet domain name, protecting consumers and advising the Minister responsible for ICTs. The ICTA currently has a staff of 8. The awarding of licences by ICTA is based on the applicant's meeting a number of criteria laid out in the Act including: technical qualification, his/her readiness to meet licence obligations, users' and the Islands' interests, and the level of domestic and outside investment (There is no prescribed foreign investment limit). A decision to not grant, revoke, suspend or modify a licence must first be appealed to the ICTA and thereafter to the Grand Court. Provisions for interconnection and facilities sharing generally respect the principles of the GATS Reference Paper. Licences are specified for all types of telecommunications and broadcasting networks and services. There are 26 companies which have different licences ranging from fixed wireline and wireless networks, through mobile, satellite and cable networks, fixed and mobile telephony, ISP and retail sales. There are three operating fixed operators: C&W which operates a traditional wireline public switched telephone network, and TeleCayman and WestTel which both operate Broadband Wireless Access (BWA) networks in the 3.5 and 2.5 GHz band, respectively. There are three operating cellular mobile operators. Cingular which is now owned by Digicel and is operated as a separate company, Digicel and C&W. Two other companies (E Technologies and Blue Sky) plan to build and operate mobile networks. There are as of yet no cable TV networks but there is one operator (WestStar) which provides an MMDS TV access. There are 14 FM stations. There are about a dozen ISPs offering both dial up and high speed Internet access.

WTO Commitments and Current Situation in the Sector

Country	Summary of WTO Commitments on Market Access and National Treatment (15 February 1997 or after)	Commitments on Regulatory and Trade Disciplines and Legal Obligations; Foreign Ownership Limits	Current Situation
Turks & Caicos Islands	The Turks & Caicos Islands, a Crown Colony of the UK is not by itself a member of the WTO.		The Turks & Caicos Islands Telecommunications Ordinance 12 of 2004 established the 7 member Telecommunications Commission of Turcs & Caicos Is. whose main functions are to promote and regulate competition in the telecommunications sector, protect consumers, help settle disputes and especially those related to interconnection, and manage the spectrum and numbers. A Director General, who has been recently (December 2005) appointed, reports to the Commission. Telecommunications Regulations were issued in 2005. A separate regulator known as the Broadcasting Commission of Turcs & Caicos Is., established under The Broadcasting Ordinance 35 of 1994, Amended in 1998, regulates the content of the public broadcasting service. Four types of authorizations are contemplated in the 2004 Ordinance: a carrier licence to operate a telecommunications network; a service provider's licence; spectrum licences; and special licences which may be granted in an emergency for example. Licences are awarded by the Minister on advice of the Commission. The Ordinance provides for operators and/or service providers being classified as dominant and consequently being subject to a higher degree of regulation than non dominant operators and service providers. The interconnection regime satisfies the principles of the WTO Reference Paper. On 25 January 2006 C&W and the Government of Turcs & Caicos signed and agreement which gives C&W a 15-year, non exclusive licence to continue to provide the services it had been providing until now including fixed and mobile telephone and Internet services in accordance with Section 13 of the 2004 Telecommunications Ordinance. C&W began rebalancing its tariffs in 2005. At the same time three previously selected new entrants, Digicel and Island Com for mobile and Andrews Communications for Internet were also awarded licences.

Annex 2
Mobile Operators and Submarine Cable Systems in the Caribbean

Mobile Operators and Submarine Cable Systems in the Caribbean

A. Mobile Operators in the Caribbean (Status April 2006)

Country / Territory	Operator	Ownership		Technology employed	Operational
		Local	Foreign		
Anguilla (BOT)	C&W Anguilla		C&W 100%	AMPS/TDMA	✓
	Weblinks	Weblinks 100%		Not yet operational	
	Digicel		Digicel 100 %	GSM 1900	✓
Antigua & Barbuda	C&W Antigua		C&W 100%	AMPS/TDMA	✓
	APUA PCS	Govt. 100%		GSM 1900	✓
	Digicel		Digicel 100 %	GSM 900/1900	✓
Aruba	Digicel		Digicel	GSM 800/1800	✓
	SETAR	Govt 100 %		AMPS/TDMA, GSM 900	✓
The Bahamas	BTC	Govt 100 %		AMPS/TDMA, GSM 1900	✓
Barbados	C&W Barbados	Govt 20 %	C&W 80 %	AMPS/TDMA, GSM 1900	✓
	Cellular Comm. Barbados	Clico (consortium of companies) 35 %	Digicel 65 %	GSM 900/1900	✓
	Digicel	New Millenium 25 %	Digicel 75 %	GSM 900/1800/1900	✓
	Sunbeach		Telecom Holdings (T&T) 51%	GSM 900/1900	
Belize	Belize Telecoms	Carlisle 62 %; small investors 8 %	ICC (US Virgin Is.) 30 %	AMPS/TDMA, GSM 1900	✓
	Speednet	Local investors 100%		CDMA 800	✓
British Virgin Islands (BOT)	CCT Boatphone	BVI Investment Club		AMPS/TDMA	✓
Cayman Islands (BOT)	C&W Cayman		C&W 100%	AMPS/TDMA, GSM 850, 1900	✓
	Digicel		Digicel	GSM 900/1800/1900	✓
	Cingular (AT&T)		Digicel	GSM 850,/1900	✓
	E-Technologies			CDMA	
Cuba	ETECSA	Govt. 73%	Telecom Italia 23%	TDMA/GSM 900	✓
Dominica (OECS)	C&W Dominica	Govt 20 %	C&W 80 %	AMPS/TDMA	✓
	Digicel		Digicel	GSM 900/1900	
	ATT Wireless (Digicel)		Digicel		
	Orange Caribe		France Telecom	GSM 900/1800	✓
Dominican Republic	Verizon Dominicana		Verizon 100%	IS-95A/CDMA 2000 1X	✓
	Tricom	Local Investors	Foreign Investors, Motorola	AMPS/IS-95A	✓
	Orange Dominicana		France Telecom 86 %	GSM 1900	✓

Mobile Operators and Submarine Cable Systems in the Caribbean

A. Mobile Operators in the Caribbean (Status April 2006)

Country / Territory	Operator	Ownership		Technology employed	Operational
		Local	Foreign		
	Centenial Dominicana		Centennial Dominicana 100%	IS-95A, CDMA 2000 1X	✓
French Guyana	Orange Caraïbe	Orange France 86 %		GSM 900/1800	✓
	Bougyues Télécom Caraïbes	Bougyues Télécom		GSM 900/1800	✓
	Outremer Télécom			GSM 900	
Grenada (OECS)	C&W Grenada	Govt. 30 %	C&W 70 %	AMPS/TDMA	
	ATT Wireless (Digicel)		Digicel	GSM 900/1800/1900	✓
	Trans World Telecoms Ltd.		Trans World 100 %	GSM 900/1800	
	Global Network Providers				
Guadeloupe (DOM)	Orange Caraïbe	Orange France 86 %		GSM 900/1800	✓
	Bougyues Télécom Caraïbes	Bougyues Télécom		GSM 900/1800	✓
	Outremer Télécom			GSM 900	
	Digicel		Digicel	GSM 1800	
Guyana	Caribbean Telecoms	Local investors		AMPS	✓
	Caribbean Wireless Telecom	Local investors 100 %		AMPS/TDMA	no
	GT&T	Government 20 %	ATN 80 %	TDMA/GSM 900	✓
	U-Mobile (Cellular) Inc.		Digicel 100 %	GSM 900/1800/1900	✓
Haiti	Haitel	100%		CDMA	✓
	Comcel			TDMA, GSM	✓
	Digicel		Digicel	GSM	
Jamaica	CWJ	Local investors 18 %	C&W 82 %	AMPS/TDMA, GSM 1900	✓
	Oceanic Digital		Oceanic Digital 100 %	IS-95A, CDMA 2000 1 X	✓
	Digicel		Digicel 100 %	GSM 900/1800/1900	✓
Martinique (DOM)	Orange Caraïbe	Orange France 100%		GSM 900/1800	✓
	Bougyues Télécom Caraïbes	Bougyues Télécom		GSM 900/1800	✓
	Digicel		Digicel	GSM 1800	
Montserrat (BOT)	C&W Monserrat		C&W 100 %	AMPS/TDMA	✓
Netherlands Antilles (Curaçao)	Comm. Systems Curaçao		Digicel	GSM 1900	
	Curaçao Telecom			GSM 900/1900	
	UTS Wireless	PTT 100 %		GSM 900	✓

Mobile Operators and Submarine Cable Systems in the Caribbean

A. Mobile Operators in the Caribbean (Status April 2006)

Country / Territory	Operator	Ownership		Technology employed	Operational
		Local	Foreign		
	Personal Communications Services N.V.		Oceanic Digital 100 %	CDMA 2000 1 X	
Netherlands Antilles (St. Maarten)	Telcell N.V.			GSM 900	✓
	UTC	PTT 100 %		GSM 1800	✓
	Eastern Carib. Cellular (ECC)			TDMA, GSM 900	✓
	Digicel		Digicel	GSM 900/1900	
	Paradise Wireless/Cellular One		Oceanic Digital 100 %	CDMA 2000 1 X	
Puerto Rico	Verizon Wireless		PRT/Verizon 100 %	AMPS/TDMA, CDMA 2000 1X	✓
	Cingular Wireless		Cingular 100 %	AMPS/TDMA, GSM 1900	✓
	Centennial de PR		Centennial 100%	IS-95A, CDMA 2000 1X, CDMA 2000 1xEV-DO	✓
	Cingular		Cingular 100%	TDMA, GSM 1900	✓
	Telefonica		Telefonica 49.9 %	IS-95A	✓
	Sprint PCS		Sprint 100 %	IS-95A, CDMA 2000 1X	✓
	SunCom			TDMA, GSM 1900	✓
St. Kitts & Nevis (OECS)	C&W St. Kitts		C&W 65 %	AMPS/TDMA, GSM 1900	✓
	CariGlobe				
	ATT Wireless (Digicel)		Digicel	GSM	
St Lucia (OECS)	C&W St. Lucia		C&W 100 %	AMPS/TDMA	✓
	Digicel		Digicel	GSM 900/1800/1900	✓
	ATT Wireless (Digicel)		Digicel		
St. Vincent & The Grenadines (OECS)	C&W St. Vincent		C&W 100 %	AMPS/TDMA	✓
	Digicel		Digicel	GSM 900/1800/1900	✓
	ATT Wireless (Digicel)		Digicel 100 %	GSM 900/1800	✓
St. Martin (Guadeloupe)	Orange Caraïbe	Orange France 100%		GSM 900/1800	✓
	Bougyues Télécom Caraïbes	Bougyues Télécom		GSM 900/1800	✓
	Outremer Télécom			GSM 900/1800	
	Dauphin Telecom			GSM 900	✓
	Digicel		Digicel	GSM 1800	
	St. Martin St. Barthélemy TelCell			GSM 900	
	St Martin Mobiles			AMPS	
Suriname	Telesur	Govt. 100 %		GSM 900	✓

Mobile Operators and Submarine Cable Systems in the Caribbean

A. Mobile Operators in the Caribbean (Status April 2006)

Country / Territory	Operator	Ownership		Technology employed	Operational
		Local	Foreign		
	Intelsur-UTS		Partnership with entities in Suriname and the Netherland Antilles	CDMA/GSM	
	Digicel Suriname Ltd.		Digicel international and private entities in Suriname	CDMA/GSM	
Trinidad & Tobago	TSTT	Govt. 51 %	C&W 49 %	GSM 1800	✓
	Digicel		Digicel	GSM 850/1900	✓
	Laqtel	Local investors		GSM 900	
Turks & Caicos Is. (BOT)	C&W		C&W	AMPS/TDMA, GSM 1900	✓
	Digicel		Digicel		
	Island Com				
US Virgin Is.	CCPR		Cingular	AMPS/TDMA	✓
	Vitel Celular	EmCom 100 %		AMPS/TDMA	✓
	Sprint		Sprint	CDMA	✓
	Centennial		Centennial Comm.	CDMA	✓

Mobile Operators and Submarine Cable Systems in the Caribbean

B. Caribbean Fibre Optic Cable Systems (Status June 2006) – Primarily Caribbean cables are shown shaded

System	Year	Caribbean Landing Points	Interconnection with Other Cable Systems	Ownership	Capacity (Minimum – potential)
Alonso de Ojeda	1999	**Aruba** (Baby Beach), **Curacao** (Willemstad)	Amerigo Vespucci; Americas-2; Pan American	Consortium of Operators	20 GBps
Americas-1	1994	**Trinidad** (Macqueripe); **US Virgin Islands** (Magens Bay, St Thomas)	Americas-2; Eastern Caribbean Fibre System; Taino-Caribe; Atlantis-2; Pan American; Colombus-2	Consortium of Operators	1.12 – 1.68 GBps
Americas-2	1999	**US Virgin Islands** (St Croix)**; Puerto Rico; Curacao; Martinique; Trinidad** (Changuaramas); **French Guyana**; **Surinam** via French Guyana; **Guyana** via French Guyana and Suriname	Americas-1; Antillas-1; Eastern Caribbean Fibre System; Taino-Caribe; Atlantis-2; Pan American; Colombus-3; MAC; Arcos-1; Maya; TCS-1	Consortium of Operators	80 GBps
Antillas-1	1997	**Dominican Republic** (Cacique, Punto Cana); **Puerto Rico** (San Juan, Isla Verde)	Americas-2; Arcos-1; TCS-1	Consortium of Operators	622 MBps – 3.7 GBps
Antilles Crossing (Phase 1)	2006	**Barbados, St. Croix, St. Lucia** (Castries)	South America and Pan American Crossing	Private	20 GBps – 160 GBps
Amerigo Vespucci (1999)	1999	**Curacao** (Willemstad); **Netherlands Antillies (**Bonaire)	Alonso de Ojeda; Americas-2; Pan American	Antelecom	15 GBps
Arcos-1	2000	**Puerto Rico, Bahamas, Turks & Caicos, Dominican Republic, Curacao, Belize,**		Columbus Communications	15 GBps (SDH) – 2.56 TBps (WDM)
Bahamas II	1997	**Bahamas** (Eight Mile Rock, Freeport, and Nassau)	CARAC, BICS	Consortium of Operators	5 GBps
Bahamas Internet Cable System (BICS)	2001	**Bahamas** (Boca Raton Florida, Freeport, Grand Bahamas, New Providence, Abaco and Eleuthera)	CARAC, Bahamas II	Private: Cable Crossings a wholly owned subsidiary of Cable Bahamas Ltd.	
Caribbean Atlantic (CARAC)	1990	**British Virgin Islands** (Tortola, Chalwell)	Atlantica-1, BUS-1, MAC, PTAT, ECFS, Taino-Caribe	Private C & W	420 MBps
Cayman Jamaica Fibre System (CJFS)	1996	**Cayman Is.** (Grand Cayman, Cayman Brac); **Jamaica** (Montego Bay, Kingston, Ocho Rios, Port Antonio)	MAC, TCS-1, Maya-1	Private: C & W (Cayman Islands); C&W (Jamaica)	2.5 – 10 Gbps

Mobile Operators and Submarine Cable Systems in the Caribbean

B. Caribbean Fibre Optic Cable Systems (Status June 2006) – Primarily Caribbean cables are shown shaded

System	Year	Caribbean Landing Points	Interconnection with Other Cable Systems	Ownership	Capacity (Minimum – potential)
Eastern Caribbean Fibre System (ECFS)	1995	**Anguilla, St Martin, St Kitts, Montserrat, Antigua, Dominica, Guadeloupe, Martinique, St Lucia, Barbados, St Vincent, Grenada, Trinidad & Tobago**	Americas-1, Americas-2	Consortium of Operators incl. C & W	2.5 Gbps
Emergia		**Puerto Rico** (San Juan)		Consortium of Operators Telefónica 96 % Tyco 4 %	40 Gbps – 1.92 TBps
FibraLink	2006	**Kingston, Ocho Rios, Montego Bay Jamaica, Puero Plata Dominican Republic**	ARCOS	Private, Columbus Communications	160 Gbps
Maya-1	1999	**Cayman Islands** (Half Moon Bay)	CJFS, MAC	Consortium of Operators	5 GBps
Mid Atlantic Crossing (MAC)	2000	**US Virgin Is.** (St. Croix)	Pacific Crossing, Pan American	Private Global Crossing	20 – 80 Gbps
Pan American	1999	**US Virgin Islands** (St Croix, St Thomas)**; Aruba**	Alfonso de Ojeda; Americas-1; Americas-2; PAC; MAC; SAC-1; Taino Caribe	Consortium of Operators	5 Gbps
South American Crossing (SAC-1)	2000	**US Virgin Islands** (St Croix)	Pan American Crossing (PAC)	Private Global Crossing	40 GBps – 1.28 TBps
Pan American Crossing (PAC)	2000	**US Virgin Islands** (St Croix)**;**	South American Crossing (SAC-1), Mid-Atlantic Crossing (MAC), Pacific Crossing (PAC 1)	Private Global Crossing	20 GBps – 80 GBps
Taino Caribe	1992	**Puerto Rico** (Miramar, Isla Verde); **US Virgin Islands** (Magens Bay**,** St Thomas)**; British Virgin Islands** (Chadwell, Tortola)	CARAC; Americas-1; Americas-2; Pan American; PAC; MAC; SAC-1	Consortium of Operators incl C & W	565 Mbps
Trans Caribbean System (TCS-1)	1991	**Jamaica, Puerto Rico, Dominican Republic**	Americas-2, Colombus-2, Arcos-1, Antillas-2, Taino-Carib, Pan American, CJFS	Consortium of Operators	560 MBps – 840 MBps
SMITCOMS SMPR-1	2005	**Sint Maarten – Puerto Rico**	ARCOS - 1	Island Territory of Sint Maarten – Government of Sint Maarten	

Technological Overview: Wireline and Wireless Broadband Access Technologies

Following is a brief overview of the various wireline and wireless technologies that are currently available or that are being developed to allow broadband (high speed) transmission over transport and local loop access networks. While most of these technologies can be used for both the emphasis here is on the latter which basically connect subscribers[93]. The summary indicates the range of data transfer speeds which are available with each technology. There is no commonly agreed definition for broadband; however a technology which permits data transmission rates from the user to the network ("up link") of grater than 100 Kbps and from the network to the user ("down-link") of greater than 1 Mbps can be considered to be broadband.

Wireline

Digital subscriber line (xDSL where x stands for asymmetrical (A), very high bit rate (V) etc.) uses the copper loop of the telephone network into the home or business to provide a high speed data access and can provide speeds up to 52 Mbit per second. Basically data traffic is transmitted over the same copper pair as voice telephony but in a different frequency band. The data channel can be connected directly to a data network or to the Internet. In its more common and economic version (ADSL-Lite) it can support down link speeds of up to 1.5 Mbps and up link speeds of up to 384 Mbps;

Integrated Services Digital Network or ISDN allows voice and data to be transmitted simultaneously over the copper local loop to provide end-to-end digital connectivity. The voice and data are transmitted over bearer channels (B channels) at rates of 64 Kbps (or in some cases 56 Kbps). A data channel (D channel) handles signalling at either 16 Kbps or 64 Kbps depending on the service type. There are two basic types of ISDN service: (i) Basic Rate Interface (BRI), which consists of two 64 Kbps B channels and one 16 Kbps D channel for a total of 144 Kbps, meets the needs of most individual users; (ii) Primary Rate Interface (PRI) with a typical 23 B channel and one 64 Kbps D channel structure (for a total of 1536 Kbps) is meant for users with greater capacity requirements. In Europe, the PRI service option has 30 B channels and one 64 Kbps D channel for a total of 1984 Kbps (E1). For ISDN the customer needs to install an ISDN terminal adapter and router in his/her premises and be located not further than about 5 km. from the telephone company's central office switch. ISDN has seen limited deployment and is being largely displaced by broadband Internet service such as xDSL and cable modem which are faster, less expensive, and easier to set up and maintain than ISDN. It is used as a backup to dedicated lines and where ADSL, cable modems and wireless options are not available.

Coaxial cable systems when built with Data over Cable Service Interface Specification (DOCSIS) which, inter alia, give the usually unidirectional cable TV networks bidirectional capability, can support downstream speeds of up to 30 Mbps and upstream speeds of 3 Mbps;

[93] Transport networks connect access networks.

Fiber optic cable systems, which in addition to having superior quality when compared with coaxial cables (no crosstalk, no electromagnetic or radio interference, cheaper maintenance) can support speeds in the Tbps range; and

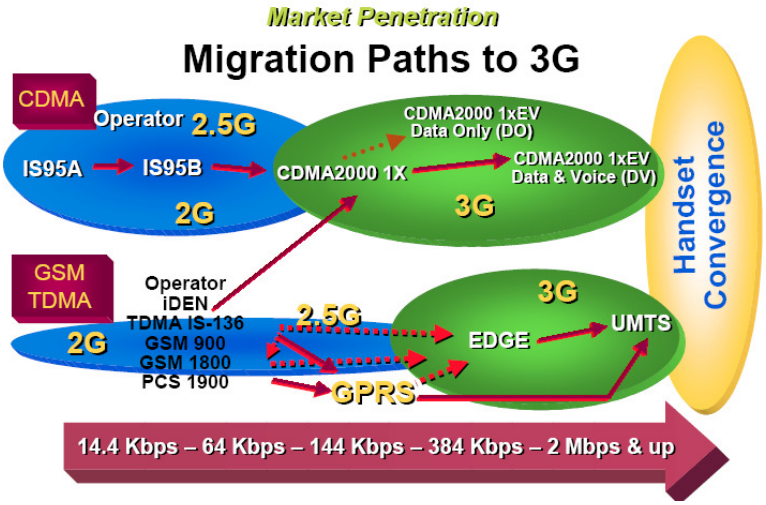
A dedicated line is a single, discrete, end-to-end wireline (copper, coax, fibre) usually symmetric (same speed in both directions) connection between the customer and telephone company dedicated for a specific application (e.g. data) with a guaranteed bandwidth availability and near-constant latency (making them more expensive than connections which use the public switched telephone network). Dedicated or leased lines are available in a variety of speeds including 64 Kbps, 128 Kbps, 256 Kbps, 512 Kbps, 2,024 Kbps

Power Line Communication (PLC) systems use low (120 – 240 volt) and medium voltage (< 69 Kvolt) electrical power transmission lines to transmit voice and data and can offer connections at speeds similar to ADSL. PLC has the advantage of using existing infrastructure.

Wireless

Radio-in-the-loop (RLL) systems based on cellular mobile technologies which in their Third Generation (3G) versions support speeds of up to 2 Mbps. These provide a wireless replacement for the fixed paired copper cable. The two dominant Second Generation standards GSM and CDMA (IS-95A) were designed primarily for voice communications[94]. Both have migration paths to wideband which can be used for both voice and data communications. (See Fig. A.1)

Figure A.1: GSM and CDMA Migration Paths to 3G



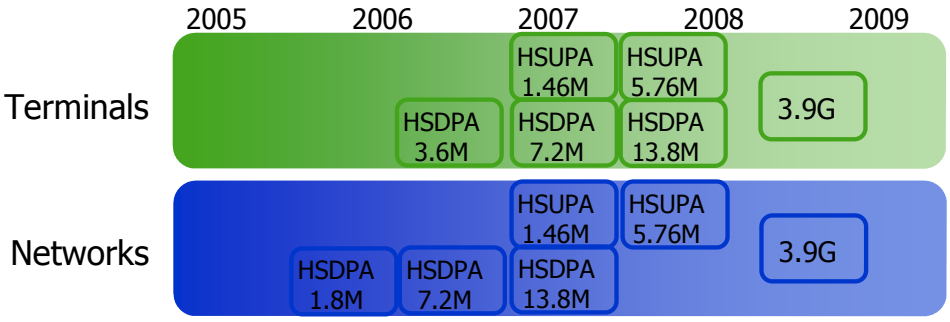
[94] The most common second generation analog standards are AMPS (for Advanced Mobile Phone System) and NMT (for Nordic Mobile Telephone System). DECT (Digitally Enhance Cordless Telecommunications which also falls into this category is a standard for cordless telephony which has a number of features which makes it attractive for providing economical access including: cheaper equipment, simpler network planning because frequency planning is not necessary, capacity is readily expanded by adding new base stations and adjusting cell sites, etc.

Through a combination of newer GSM base station designs, which do not require shelters or long cables between the antenna and transceivers, and employing speech encoding methods such as AMR[95] and bit error rate reduction techniques such as SAIC[96] it has been possible to increase cell sizes by 30%, reduce interference, reduce transmission power requirements, increase throughput capacity and improve speech quality. The overall impact has been to reduce significantly the cost of base stations for rural applications.

CDMA (IS-95A) evolves through several steps to its data only 3G version called CDMA 1x EV-DO and eventually to what was to be its data and voice version CDMA 1x EV-DV[97]. The intermediate steps (2.5G) are IS-95B which offers speeds up to 64 Kbps and CDMA 2000 1x which offers speeds up to 144 Kbps in both the down (toward the user) and uplinks. CDMA 1x Rev. A increases this speed to 307 Kbps. CDMA 1x EV-DO offers downstream and upstream speeds of 2.4 Mbps and 384 Kbps, respectively. CDMA 1x EV-DO Rev A in which circuit switched voice is replaced by VoIP offers up to 3.091 Gbps downstream and 1.86 Gbps upstream.

The GSM 3G standard, W-CDMA (Wideband Code Division Multiple Access), offers speeds up to 2 Mbps. The evolution to W-CDMA goes through GPRS (General Packet Radio Service) which has a channel rate of 115 Kbps. and EDGE (Enhanced Data rates for GSM) with rates up to 384 Kbps. Both offer Internet Protocol (IP) based packed switched services. Beyond W-CDMA the High Speed Downlink Packet Access (HSDPA) and High Speed Uplink Packet Access Uplink (HSUPA) protocols, which are currently being developed, are expected to permit maximum data transmission speeds 14 Mbps and 5.8 Mbps, respectively (if the terminal is close to the base station). HSDPA and HSUPA are sometimes referred to as 3.5G or 3.75G. The initial (network) version of HSDPA is expected to be deployed in 2006. (See Figure A.2)

Figure A.2: Evolution of High Speed Down and Uplink Packet Access Protocols for Network and Terminal Devices



[95] Adaptive Multirate Codec (AMR) is a speech codec (coder-decoder) which gives better speech quality (outside and in-doors), added network coverage and capacity. It allows individual base station cell sizes to be increased by about 30% reducing the number of base stations needed to cover a given area. AMR dynamically adapts to changing radio conditions, using the most effective mode of operation for each circumstance.

[96] Single Antenna Interference Cancellation (SAIC) is an improvement for mobile station receivers which reduces the bit-error-rate and hence the power requirement from the base stations. SAIC reduces the overall interference and results in improved quality and capacity and improved downlink performance in interference prone areas.

[97] 1x indicates that there is only one radio frequency (RF) carrier. EV stands for “evolutionary”; DO, for “data only “or “data optimized” and DV, for data and voice.

In the mean time Nokia has introduces a so-called Internet High Speed Packet Access (I-HSPA) protocol which should allow a downlink speed of 14.4 Mbps and an uplink speed of 5.8 Mbps.

The difference between GSM and CDMA in the evolution from 2G to 3G is that the former requires the addition of new infrastructure whereas the later maximizes the use of existing equipment and frequencies and simplifies upgrades to base stations in the field.

There has been growing interest in using the 450 MHz band and, in particular, CDMA 450 technology for rural, sub-urban and sparsely populated areas for both mobile and fixed applications. The main advantage of the 450 MHz band is that it permits relatively large cell sizes, which makes deployment cheaper because fewer base stations are required to cover a given area.

CDMA 450 in its current 2.5G version (CDMA2000 1x) can support about 70 voice users per base station with one carrier in each sector of a 3-sectored cell and can provide a peak data rate of up to 307.2 kbps on the downlink and 153.6 kbps on the uplink, per user. The peak data rate for the 3G version (CDMA2000 1xEV-DO) is predicted to be up to 3 Mbps on the downlink and up to 1.8 Mbps on the uplink.

Cordless Systems: were initially designed to be used indoors; however, these systems have been enhanced for outdoor applications. One of the most representative cordless telephone systems is DECT (Digital Enhanced Cordless Telecommunications), the standard developed by the European Telecommunications standards Institute (ETSI) in the late 1980s, which is able to deliver service in moderate subscriber density situations at lower cost than cellular mobile. It is a wireless local loop (WLL) system which in its enhanced versions (such as CorDECT) can support simultaneous voice and data, the latter with up to 72 kbps throughput.

Line-of-sight multi-channel, multi-point (MMDS) and local multipoint (LMDS) distribution systems and spread spectrum systems can support speeds of up to 38 Mbps, downlink, and 10 Mbps uplink speeds. MMDS (or MCS) operates in the 2.4 GHz band. LMDS, which operates in a much higher frequency band (26 GHz), is much more susceptible to attenuation as a result of rain limiting the scope for use;

Geostationary and low earth orbit satellite systems support speeds of up to 2 Mbps in the downlink and 384 Kbps in the uplink. IP based satellite networks using SCPC DAMA (Single Channel per Carrier, Demand Assigned Multiple Access) and Bandwidth-on-Demand technology allow for efficient use of satellite bandwidth and data rates of up to 2 Mbps. The central hub of the system located in the operator's premises serves as the management and control centre for a star or mesh network and as the link for the satellite based network into the PSTN and the Internet. On the user side a compact remote unit, which is connected to a VSAT terminal, integrates the satellite modem and IP router and can be connected directly to a computer, a VoIP telephone or other IP based device through and Ethernet 10Base-T interface; and

New wireless short and longer range technologies which operate in licenced and unlicenced frequency bands and use orthogonal frequency division multiplexing (OFDM). WiFi and WiMAX, the best known of these, are, respectively, short (approx. 100 meter radius) and longer (approx 6 – 10 km) range access systems.

WiFi (Wireless Fidelity) is a wireless local area network (WLAN) technology based on the IEEE's 802.11 wireless interface standard. IEEE 802.11a operates in the 5 GHz band (between 5.725 and 5.850 GHz) and can support data transmission speeds of up to 54 Mbps. IEEE 802.11b operates in the 2.4 GHz band (2.4 to 2.4835 GHz) and can support data transmission speeds up to 11 Mbps in a range of up to about 300 m. in a hotspot wireless local area network (WLAN) 360^0 radiation configuration. When deployed in a point – to point mode IEEE 802.11b can used for transmission links of up to 20 km. The power of the transmitter needs, however, to be increased and it has to be used in conjunction with high gain antennas. These frequency bands are unlicenced in many countries.

WiMAX is a wireless metropolitan network (MAN) technology that will provide broadband wireless (BWA) for fixed and mobile applications WiMAX is based on the IEEE 802.16 wireless interface standard. The original version of 802.16 adopted in 2001 was a point-to-multipoint line-of-sight technology operating in the frequency range 10 to 66 GHz. WiFi standard IEEE 802.11b can support transmission speeds of up to 11 Mbps. The more recent version, IEEE 802.16a, is designed for fixed applications, operates in the frequency range 2 - 11 GHz and does not require that there be a line-of-sight between the base station and the user (NLOS). IEEE 802.16d offers a range of up to 50 km with typical cell radii of 6 to 10 km. and will offer variable channel sizes from 1.25 to 20 MHz. IEEE 802.16e, which is currently being developed, will allow for limited mobility (20 to 100 kph) and will operate in licenced bands in the 2 – 6 GHz range and is now foreseen for deployment in 2007/8.

The 2003 World Radio Conference (WRC) agreed to allocate 455 MHz of spectrum in the bands 5.15 to 5.35 GHz and 5.47 to 5.725 GHz for wireless access systems.

A new version of broadband wireless access systems being developed is Flash OFDM which will use 1.25 MHz sized channels like CDMA and will permit down load data rates of between 700 and 800 Kbps in radii of 3 – 5 km. with full mobility.

Other technologies in this category, which are currently under development, will have the effect of increasing the amount of spectrum available for various fixed and mobile applications including broadband local access. These include: (i) Ultra Wide Band (UWB), a newer technology based on spread spectrum, designed to operate over a very large band with very low power just below the noise floor so as not to interfere with other signals which may also be using the same frequency band but with signal strengths well above the noise floor. UWB uses the spectrum very efficiently and offers good transmission qualities because it eliminates multipath signal distortion and can easily penetrate walls[98]. (ii) Smart antennas, which can determine where signals are coming from and are also good at suppressing interference and multipath signal distortion. For example, devices are being developed that can distinguish two signals depending on the angle of arrival allowing satellite and terrestrial systems to operate at the same time in the same frequency band. (iii) Agile or cognitive radios, which can identify frequencies that are not being used at a particular moment in time, use these frequencies to transmit

[98] The FCC has authorized UWB above 3.5 GHz in 2002 and in early 2005 the Canadian Government was conducting a consultation on developing an appropriate regulatory framework in Canada for UWB, See Industry Canada, Consultation Paper on introduction of Wireless Systems Using Ultra-wideband Technology, SMSE-002-05, February 2005. See also Reynolds, Taylor, Background Paper: Advanced Wireless Technologies and Spectrum Management, Workshop on Radio Spectrum Management for a Converging World, International Telecommunication Union, Geneva, 16 - 18 February, 2004.

signals for as long as they remain unused and, when they sense that another radio is trying to use this particular frequency, hop to another unused frequency; and (iv) Software defined radios (SDR) which are multimode, multi-band devices which operate using different technologies and different frequency bands. An example of a SDR is a mobile radio that operates equally in a GSM or a CDMA environment irrespective of the frequency at which each may operate. GSM/WiFi is another type of SDR device which is currently being developed and deployed[99].

[99] Motorola (MP) and Nokia (Communicator 9500) are dual mode GSM/WiFi handsets. SonyEricsson is also understood to be developing multimode devices which incorporate WiFi.

Assessment of the Telecommunication Services Sector in CARICOM: Convergence Issues at the Regional and International Level

Terms of Reference of Study

Background

At the global level the telecommunications (telecoms)[100] industry is in a process of rapid structural change and significant economic growth. Former national monopolies are now facing competition; due to the competitive environment and rapidly evolving technologies, new services are being developed. Telecommunications are a critical infrastructural service on which several other service sectors and manufacturing depend. It is also a lucrative area of economic activity with potential for continued growth as innovations in information and communication technology (ICT) and the convergence of media lead to new uses for basic telecoms services each year. The telecoms sector is key in a world of global production and increasingly globalized trading arrangements. Indeed, telecoms have revolutionized the concept of cross-border supply under the General Agreement on Trade in Services (GATS) as many more services and products can be supplied in digital form. It is clear that the telecoms sector is critical to the further growth and expansion of other services and goods production.

The WTO negotiations on basic telecommunications in 1997 set a benchmark for rules on trade in telecoms and regulatory principles.[101] The negotiations involved certain categories of service which consisted of four groups:

a) Geographic distinctions – local, domestic long distance, and international;
b) Means of technology – wire-based (or fixed infrastructure) and wireless (or radio-based);
c) Means of delivery – on a resale basis or facilities-based;
d) Clientele – for public use, for non-public use (e.g. services sold to closed user groups).

CARICOM states did not grant any tangible new market access in those negotiations but scheduled commitments that reflected the status quo in their markets at that time. Since then, several CARICOM states have liberalized elements of their telecoms sector unilaterally while some still have market access conditions identical to the situation in 1994 at the end of the Uruguay Round. But CARICOM is also currently engaged in services negotiations in different arenas.

Although services negotiations under the GATS built-in agenda in the WTO are protracted, the process to complete the Doha Round will continue. Similarly, while the FTAA negotiations have been long delayed, they are expected to enter the final stage this year. Telecoms services are important areas of these negotiations and are expected to be of interest to negotiating partners in the negotiation of a bilateral trade agreement with Canada and in an Economic Partnership Agreement (EPA) with the European

[100] Basic and value-added services.
[101] WTO Members undertook commitments on basic telecommunications by virtue of signature of the Fourth Protocol to the General Agreement on Trade in Services which includes national market access schedules. The Fourth Protocol entered into force in January 1998.

Union. Some CARICOM states have received requests for increased market access in telecoms from some other WTO Members in the current GATS negotiations. Similarly, it is expected that requests will be made for increased telecoms access in the FTAA negotiations when they resume. There are draft rules on telecoms in the FTAA chapter on Services which seek to extend key principles such as transparency, inter-connection, competition, number portability, co-location, among others, in this hemisphere. Market access negotiations will also be critical in terms of the liberalization of trade in telecoms services in the FTAA.

Regional versus External Approaches to Telecoms

The role of telecoms in the development of CARICOM has not been clearly articulated at the regional level. The anticipated scale economies that are a major part of the rationale for the CARICOM Single Market and Economy (CSME) have direct relevance for the telecommunications industry. Furthermore, in light of the ongoing process to establish a Single Market it is important to ensure adaptability and compatibility of telecoms systems across CARICOM. But unfortunately, telecoms are not yet part of the formal liberalization process under the CSME. This is of concern, especially since most CARICOM states have opened, and continue to open their markets to foreign suppliers in a unilateral manner. It is worthwhile to analyze the market opening in telecoms that has occurred in CARICOM states since the GATS came into force and the implications for negotiations at the bilateral, regional and multilateral levels.

In principle, the CSME should be the most liberal of CARICOM's trade regimes. There is no long-term basis for maintaining the segmented national telecoms markets and policy approaches at the moment in CARICOM. The critical infrastructural nature of telecoms services is only one of many compelling reasons. It is important to outline the rationale and modalities for creating a single market for telecoms in CARICOM. This is especially in light of the fact that several CARICOM states appear quite willing to bind their de facto market opening in telecoms in their GATS offers in the WTO.

The interface between the liberalization of telecoms services at the national level, the need to create a unified market in this sector under the CSME, and external negotiations on telecoms services is a complex matter. It requires a careful and methodical analysis of the issues in order to inform a holistic approach by CARICOM to this sector in all trade negotiations.

Objectives and Outputs

The study will analyze the state of play and level of competitiveness in the telecoms sector in CARICOM. It will also examine issues involved in the interaction between telecoms as an infrastructural service within CARICOM and approaches to telecoms in international trade negotiations and make recommendations relevant to industry and policymakers. The information obtained from the research will provide background to the private sector and assist them in articulating their interests in trade negotiations. It will also provide background to policymakers with respect to liberalization and development of the sector. The findings of the study will be discussed in a regional consultation on the telecoms sector and external negotiations in CARICOM and presented to Ministers of Trade and Ministers Responsible for Information and Communications Technology.

Scope of Work

The Consultants are expected to undertake the necessary research and prepare a report which covers the following tasks:

1. Briefly review the technological and other changes in the telecoms sector and their role in the provision of other services, and in the creation of new services. Also assess the relevance of this for CARICOM states in terms of generating new services exports in information and communication technologies (ICT).

2. Assess the size and nature of the telecoms industry in CARICOM at the country level and regionally, the demand for telecom services in CARICOM states and the capacity of current domestic firms to supply such services. Develop economic indicators to ascertain the size of the industry, its competitiveness and its potential for growth and exports at the regional and international level. This analysis should also include an assessment of key players in the sector at the regional level. In completing these tasks the consultants must conduct a survey of current literature on the subject.

3. Examine the challenges facing the industry and identify any domestic policy measures which constrain the further growth and development of exports.

4. Evaluate whether a regional strategy for the development of the sector might enhance its growth.

5. Discuss the role of telecoms as an infrastructural service in improving the competitiveness of other service exports in CARICOM.

6. Assess the impact of trade liberalization on the telecoms sector. Catalogue and assess the extent of current, actual market access in basic and value added telecoms services in all modes of supply in all CARICOM states (include number of and names of firms and areas of activity, etc.). Compare the current situation to the market access obligations in 1994/1997 as expressed in the GATS schedules of CARICOM states.

7. Assess the competitiveness of telecoms services in CARICOM states in terms of the prices of services compared to other countries in the hemisphere. Also evaluate the impact of the cost of telecoms on the dissemination and use of ICTs in CARICOM.

8. Examine and evaluate the extent to which the players in the telecoms sector have mobilized to confront the challenges of the external trade agenda.

9. Analyze the role of telecoms in the development of the CARICOM Single Market and Economy and make recommendations with respect to the liberalization of barriers to trade in telecoms among Member States. In doing so, it may be worthwhile to briefly review the approach to telecoms liberalization in another integration area or common market.

10. Collate and assess any available policy documents relating to telecoms and/or ICT development approved by CARICOM States. Assess the degree of compatibility of existing telecoms regimes across CARICOM.

11. Assess the ability of CARICOM firms to export telecoms or ICT services and make recommendations re any market access barriers in specific overseas markets that should be addressed in negotiations.

12. Develop recommendations regarding a trade strategy for the sector and present possible negotiating positions which the sector might put forward to advance their interests. In this regard, assess the market access and related requests by other WTO Members to CARICOM states regarding telecoms services in the current GATS negotiations and review telecoms-related aspects of the initial offers of CARICOM Member States in the current Doha Round.

13. Prepare a Green Paper with a Plan of Action for a CARICOM-wide approach to telecoms/ICT in the CARICOM Single Market and Economy (CSME) which will ensure convergence between regional and external approaches to trade and development goals for this sector.

The Consultants will also be required to prepare relevant documentation and presentations to facilitate the convening of industry workshops once field research is completed.

Methodology

The study should be conducted through both primary research (data collection, interviews) and secondary sources including a review of recent literature on the subject. The Consultants must collaborate with CRNM regarding persons to be interviewed. A list of all persons interviewed and their coordinates must be documented.

Reporting and Timelines

The work is to commence as soon as possible and be completed by September 30th. The consultants must regularly liaise with the relevant CRNM staff and indicate progress or difficulties faced in the assignment. A draft report (following the CRNM style guide) and an executive summary must be submitted to the CRNM for comments two weeks in advance of this date. The revised and properly edited final report must be submitted to the CRNM by September 30, 2005.