



Programme to enhance the Establishment of e-Commerce Regimes and the Adoption of e-Commerce by Small and Medium Enterprises (SMES) in CARIFORUM

RPTF-ECOM/10/09

# E-COMMERCE STRATEGY PAPER FOR CARIFORUM

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# LIST OF ABBREVIATIONS

3G	Third Generation	IPP	Internet Presence Provider
ACH	Automated Clearing House	IPTV	Internet Protocol Television
ACORN	Anguilla Commercial Online	IRU	Indefeasible Right of User
	Registration Network	ISP	Internet Service Provider
ACT	Antigua Computing Technology	IT	Information Technology
ADSL	Asymmetric Digital Subscriber Line	ITU	International Telecommunications
APUA	Antigua Public Utilities Authority		Union
ASYCUDA	Automated System for Customs Data	IXP	Internet Exchange Point
ATM	Automated Teller Machine	LTE	Long Term Evolution
B2B	Business to Business	MSME	Micro, Small and Medium-sized
B2C	Business to Consumer		Enterprise
BTC	Bahamas Telecommunications	NCS	National Competitiveness Strategy
	Company	NGO	Non-Governmental Organisation
C&W	Cable & Wireless	OECD	Organisation for Economic
CA	Certification Authority		Cooperation and Development
CARICOM	Caribbean Community	OECS	Organisation of Eastern Caribbean
CCJ	Caribbean Court of Justice		States
ccTLD	country code Top Level Domain	OFCOM	Office of Communications (United
CDMA	Code Division Multiple Access		Kingdom)
СТО	Caribbean Telecommunications	OUR	Office of Utilities Regulation (Jamaica)
	Organisation	POS	Point of Sale
DAI	Digital Access Index	RCC	Regional Cooperation Council
DIA	Dedicated Internet Access	RTGS	Real Time Gross Settlement
DNS	Domain Name Server	SIDS	Small Island Developing States
DOI	Digital Opportunity Index	SME	Small and Medium-sized Enterprise
DSL	Digital Subscriber Line	TATT	Telecommunications Authority of
ECTEL	Eastern Caribbean		Trinidad and Tobago
	Telecommunications Authority	TSF	Telecoms Sans Frontières
EDGE	Enhanced Data rates for GSM	TSTT	Telecommunications Services of
	Evolution		Trinidad and Tobago
EFT	Electronic Funds Transfer	UDAP	Unfair and Deceptive Acts and
EVDO	Evolution-Data Optimised		Practices
GCN	Global Caribbean Network	UNCITRAL	United Nations Commission on
GDP	Gross Domestic Product		International Trade Law
GPRS	General Packet Radio Service	UNCTAD	United Nations Conference on Trade
GSM	Global System for Mobile		and Development
	Communications	UNDAC	United Nations Disaster Assessment
GT&T	Guyana Telephone and Telegraph		and Coordination
	Company	UNDP	United Nations Development
gTLD	generic Top Level Domain		Programme
HSPDA	High-Speed Downlink Packet Access	UNICEF	United Nations International
ICT	Information and Communication		Children's Fund
	Technologies	US	United States
ICT4D	Information and Communication	USA	Universality Service Areas
	Technology for Development	VAT	Value Added Tax
IGP	Integrated Global Payroll	VoIP	Voice over Internet Protocol
IHRIS	Integrated Human Resource	VSAT	Very Small Aperture Terminal
	Information System	WiMAX	Worldwide Interoperability for
IP	Internet Protocol		Microwave Access
IPLC	International Private Leased Circuit	WTO	World Trade Organisation

# **EXECUTIVE SUMMARY**

1. E-commerce and e-business hold great potential and opportunities for SMEs in the CARIFORUM region. Besides access to new and bigger markets, such electronically mediated trade can help to bring about reduced costs and faster turnaround times by streamlining and integrating processes along the entire business value chain.

2. Nevertheless, in the Caribbean an integrated strategy to assist SMEs in benefitting from e-commerce has hitherto been lacking. The present document aims at correcting this situation. In particular, the strategies proposed are hoped to help Caribbean firms not only to increase intra-regional goods and services trade through e-commerce but also to capitalise on the opportunities created by the CARIFORUM States' Economic Partnership Agreement with the European Union. In this sense, the strategy has been formulated after examining the operational and legal issues surrounding e-commerce in CARIFORUM. It recommends specific, tangible interventions to be made in the context of programmes aimed at enhancing the use of e-commerce by SMEs in CARIFORUM by addressing specific challenges they face.

3. The strategy document consists of two main parts. The first one is devoted to an analysis of the current situation of e-commerce in CARIFORUM countries, its barriers and facilitators. The second part presents the strategies which are proposed in response to the analysis.

#### Part A – Analysis

4. The issues surrounding e-commerce are complex both in technological and regulatory terms, and subject to constant and rapid change. As such, a strategy for the CARIFORUM countries aiming at supporting SMEs' use of e-commerce must be based on an up-to date assessment of the current situation of e-commerce as well as its barriers and facilitators.

5. The analysis undertaken during the strategy formulation is based on three pillars. First, a diagnostic of the infrastructure determines the quality of the infrastructural basis upon which SMEs in the CARIFORUM countries engage in e-commerce. In most developing countries – and this includes at least some of the CARIFORUM countries –, lack of adequate infrastructure remains the major obstacle to the uptake of information and communication technologies (ICT). E-commerce cannot be addressed in isolation from other ICT development efforts. Adequate network infrastructure, affordable infrastructure services, and reliable local & international communication are all key factors for the success of any e-commerce initiative. E-commerce will have very little impact for SMEs until it can be accessed and use by everyone regardless of their location. Assessing the current state of the infrastructure in the region therefore provides important findings for the e-commerce strategy to be developed.

6. A second core requirement for SMEs' use of e-commerce is that appropriate laws and regulations are in place. Hence, a legal and regulatory diagnostic identifies the current status, especially the weaknesses of existing laws and regulations on e-commerce as well as

any laws, proposed or existing, on issues such as data protection, cyber crime, formation of contracts, and electronic payments, etc.

7. Third, the actual use of e-commerce by SMEs also crucially depends on their internal capacities (both financial and human resources) as well as their strategies and priorities. Studies in developed counties indicate that the knowledge and commitment of owner or managers of SMEs play a key role in whether SME's engage in e-commerce. SMEs tend to have concerns about return on investments that may lead owners or managers to be reluctant to make substantial investments when short-term returns are not guaranteed. Related industry experience of owners is also a key factor in their e-commerce success. Governments and SME support institutions can enhance capacities and shape strategies through a variety of measures, including training and awareness raising programmes. In this context, the purpose of the third pillar of the analysis was to identify how SMEs in CARIFORUM countries actually engage in e-commerce and to determine their views on e-commerce. This third part of the diagnosis was carried out through a survey of SMEs.

8. The findings of the analysis undertaken in this document can be summarised as follows:

- The telecommunications infrastructure in some CARIFORUM States suffers from insufficient broadband availability and/or at an affordable price and would benefit from a more liberalised telecommunications environment.
- The legal and business environment in many CARIFORUM States lack clarity in the predictability of the application of the rule of law, the investment or incentive environment toward research and development, as well as the level of accomplishment and interconnectivity of the banking sector (including the availability or lack of access to electronic payment facilities).
- Privacy and trust are insufficiently guaranteed in CARIFORUM, due to an only partial existence of data protection and other security legislation within the region, the lack of awareness of consumers about their rights, options and alternatives, the lack of mechanisms to indicate the level of risk associated with transactions, as well as the lack of infrastructure to deal swiftly with any occurrences of cyber-crimes.
- Human resource capacities for e-commerce are highly constrained. Most SMEs are currently incapable of accessing the strategic, managerial and technical talent required to properly assess and effectively implement e-business alternatives/solutions.
- There is a lack of full ability to create indigenous high-quality content which can be shared across different platforms as well as the availability to public e-content for private sector re-use. The availability of such content and services would be a key requirement for many national and regional-level e-commerce policy initiatives.
- Regarding e-government, there is a lack of overarching policies, legislation and planning, lack of e-payments systems to and from the public, lack of existence of policies to encourage interoperability, problems with co-ordination between governmental departments.

#### Part B – Strategy

9. The vision which the CARIFORUM e-commerce strategy pursues is that SMEs in the CARIFORUM actively engage, without being restrained by legal or technical bottlenecks, e-

commerce in their domestic, regional and international business. The use of e-commerce has created a virtuous circle through the strengthening of CARFORUM SMEs' international competitiveness.

10. Specifically, the target situation which the CARIFORUM e-commerce strategy aims to help achieve has the following characteristics:

- The Legal and Business Environment a predictable and transparent legislative framework, harmonised with best international practices, allowing for the ease of doing business electronically while providing the required protections. Access to quality electronic payment facilities and information security services.
- The Telecommunications Market and Infrastructure A de facto liberalised telecommunications environment and the wide availability of high quality, high speed and affordable broadband access.
- Privacy and Trust The existence of relevant data protection and other security legislation, the awareness of consumers about their rights, options and alternatives, mechanisms to indicate the level of risk associated with a transaction as well as capacity and infrastructure to deal swiftly with any occurrences of cyber-crimes.
- Human Resource Capacity the availability of strategic, managerial and technical talent required to effectively implement e-business alternatives/solutions. The promotion of relevant training programmes to address this skills gap.
- Content and Services the ability to create indigenous high-quality content which can be shared across different platforms as well as the availability to public e-content for private sector re-use.
- E-Government Government to use its size and status as the largest single provider of services to the economy to act as model user, leading by example through its own use of e-commerce/e-business techniques in the delivery of its services.

11. A multidimensional strategy is required to enhance SMEs' use of e-commerce in the CARIFORUM countries. This means that both technological upgrading, drafting of appropriate legislation and regulations, and capacity building and awareness raising of both the public sector and SMEs will be necessary elements of the regional e-commerce strategy.

12. The e-commerce maturity framework introduced in this document suggests that the starting point is at the physical and technical infrastructural level. Building on this, if the commensurate regulations and policies for e-commerce are not in place, e-commerce cannot strive. Therefore, an appropriate legal and regulatory framework must be laid down. But 'softer' infrastructure such as citizen awareness is also a requirement from an early stage.

13. Once this fundamental platform has been achieved, application and content services begin to proliferate. The availability of relevant services serves as a catalyst to widespread ICT/e-commerce adoption, and a formal ICT industry/sector begins to develop. Eventually, if appropriate policy actions continue to be pursued, the economy will become a net exporter of both knowledge and physical products, enabled by the advanced use of the tools and methods of e-commerce/e-business. The e-commerce maturity framework thus presents a logical approach to tackle e-commerce issues in a strategic way. Logically the bottom level (infrastructure) is needed before implementation of the level above this (service) and so on.

14. Because CARIFORUM countries are at different stages of development the framework is designed such that individual territories can determine their current state and move to implement the appropriate strategies. Additionally, depending upon the level of development of a nation with regard to the framework certain issues can be tackled horizontally across the CARIFORUM region. Thus there is no fixed sequencing for the region or even individual countries but a general guideline may be taken from the maturity framework.

15. Given the findings of the analysis in this document and the breadth of issues that need to be addressed, eight major interventions are proposed. Most of these relate to the bottom three levels, infrastructure, services, and industry formation. The proposed strategies are:

- Strategy Axis A: Improving the technical and legal infrastructure for e-commerce
  - 1. Strategy for telecommunications infrastructure/broadband
  - 2. Strategy for regional mobile broadband and m-payments
  - 3. Regional IXPs/interconnection strategy
  - 4. Strategy for common approach to e-commerce legislation in CARIFORUM
- Strategy Axis B: Supporting CARIFORUM SMEs to engage in e-commerce
  - 1. Strategy for an e-business regional support agenda
  - 2. A regional support programme for the services layer
  - 3. Strategy for regional ecommerce capacity building and e-commerce solutions project
  - 4. Strategy for software development training and universities

16. Critical success factors in developing a vibrant e-commerce environment are as follows:

- Ensuring government leadership through the implementation of e-government services to the public. This is especially the case where services for the payment of services and taxes are done electronically.
- Private sector involvement and pressure, especially in the liberalisation of telecommunications, the development of competitive telecommunications sectors and provision of services.
- The modernisation of commercial law as a whole, and not just e-commerce legislation that would validate electronic transactions and electronic signatures.
- Deep and ongoing commitment on the part of governments in carrying out the aims and recommendations of policy and strategy frameworks.

17. At present there is no governance structure for e-commerce strategies and implementation in the region. Such a governance structure would provide a better framework and environment that would benefit SMEs in adopting e-commerce, as there would be leadership, vision, national impetus, and national focus on e-commerce. The rising tide of e-services within both the private and public sectors would ultimately benefit SMEs in adopting e-commerce and e-business activities.

18. The institutional challenge for the CARIFORUM e-commerce strategy stems from the fact that at the CARICOM level an institutional entity already exists, i.e. the CARICOM E-Commerce Unit, but does not cover the Dominican Republic. Therefore, it will need to be

discussed to what extent a modus operandi could be found for an "extended" unit which would also cover the Dominican Republic.

# INTRODUCTION

Micro, Small and Medium Sized Enterprises (MSMEs) contribute significantly to the nonenergy segment of the regional gross domestic product (GDP) and provide the lion's share of employment in the Caribbean, outside of the public sector. Yet these firms have traditionally faced many, sometimes crippling, challenges due to their restricted size and reach. These challenges include, among others:

- Limited access to capital (particularly for start-ups);
- Inadequate access to market information;
- An inability to attract the highest quality human resources;
- Difficulty in servicing large contracts; and
- Small promotional/advertising budgets.

These factors have traditionally militated against the success and growth of smaller firms causing many of them to fail in the marketplace.

At the same time however, the phenomenon of Information and Communications Technologies (ICTs) has been accelerating throughout the world as well as right here in the Caribbean. Increasing numbers of people are now interconnected via high-speed (or broadband) links to the internet and are able to interact with the world right from their homes, offices and communities.

E-commerce and e-business hold great potential and opportunities for SMEs in the CARIFORUM region.<sup>1</sup> Besides access to new and bigger markets, such electronically mediated trade can help to bring about reduced costs and faster turnaround times by streamlining and integrating processes along the entire business value chain.

E-commerce involves a lot more than simply buying and selling goods and services over the internet. Ultimately it can encompass the total reorganisation of business processes to enable effective operation in a networked electronic environment. For an SME it can mean a shift from being a producer relying on wholesalers to gain access to markets, to dealing directly with the end-user and suppliers, and everyone else along the value chain. This in turn demands a revolution in how information is used by the firm, both internally and

<sup>&</sup>lt;sup>1</sup> **E-commerce** in its purest sense is defined as "all electronically mediated information exchanges between an organization and its external stakeholders." Thus a company which posts information on a brochure website is not engaging in e-commerce. However a company which accepts requests for additional information about specific products and provides that information interactively via their website is engaging in e-commerce. Financial information of course is included in this definition but the concept is broader than the realm of strictly finance.

**E-business**, in contrast, may be defined as "all electronically mediated information exchanges, both within an organization and with external stakeholders supporting the range of business processes." E-Business is said to occur when a business has fully integrated ICTs into its operations, both internally and with external stakeholders; potentially redesigning its business processes or even reinventing its business model. Thus, an organisation can be engaging in e-commerce, through its ability to electronically interact with its customers on-line, but it may not be an e-business because it has not implemented the back-office functions and business processes which electronically and organisationally support that interaction.

externally, as well as the development of new relationships with partners such as financial institutions and transportation companies. Aspects of that revolution can include:

- Hugely reducing order-to-output times for a rapid response to orders, deploying ecommerce internally
- Implementing or encouraging e-commerce with suppliers
- Implementing an electronic payment system
- Ensuring compliance with consumer protection and data privacy, and supporting warranty and liability issues
- Implementing guaranteed delivery systems
- Developing an effective front-end customer Web interface
- Developing new and innovative means to market products

A fully e-commerce enabled business (or an e-business) is often barely recognisable as the company that began the process. And the process – even assuming an enabling legal, regulatory, infrastructural, and financial environment - requires an intensive level of capacity and skills development and significant investment in ICTs.

There are a multiplicity of factors that affect the ability of smaller firms to benefit from the advent of ICTs and other network technologies. Many countries and regions around the world have attempted to put in place policies and initiatives intended to advance cause of the SME. Some of the key aspects that many of these initiatives consider are as follows:

- The Legal and Business Environment factors here include the predictability and transparency of the application of the rule of law, the treatment of intellectual property, the tone of labour relations, the ease of setting up of dissolving businesses, the investment or incentive environment toward research and development, as well as the level of accomplishment and interconnectivity of the banking sector (including the availability or lack of access to electronic payment facilities).
- The Telecommunications Market and Infrastructure referred to here are issues such as the existence or lack of a liberalised telecommunications environment and the level of competition between provider firms, the quality, speed and affordability of broadband access, and the existence of policies to encourage universality, technology neutrality and interoperability.
- Privacy and Trust one of the key determinants of the widespread adoption of e-Commerce within the public and private sectors as well as the general population is the implicit trust that users place in the system. Factors here include the existence of relevant data protection and other security legislation, the awareness of consumers about their rights, options and alternatives, mechanisms to indicate the level of risk associated with a transaction as well as infrastructure to deal swiftly with any occurrences of cyber-malfeasance.
- Human Resource Capacity a main challenge, particularly to smaller firms in the uptake of e-Commerce and e-Business is the inability to access the strategic, managerial and technical talent required to properly assess and effectively implement e-business alternatives/solutions. Many national and regional policies attempt to promote training programmes of various kinds to address this skills gap.
- Content and Services the ability to efficiently access important/relevant information and services provides the critical reason or "platform of purpose" for the use of the internet. Hence the ability to create indigenous high-quality content which can be shared

across different platforms as well as the availability to public e-content for private sector re-use, are key to many national and regional-level e-commerce policy initiatives.

 E-Government – Government has the opportunity to use its size and status as the largest single provider of services to the economy to act as a Model User, leading by example through its own use of e-commerce/e-business techniques in the delivery of its services. This prepares the business environment for SMEs and provides a direct incentive for uptake. Government can also implement a number of other very specific initiatives to directly support and advise SMEs

These factors are by no means an exhaustive list of considerations. However, they do capture the main themes and trends found in many national and regional e-commerce policies and policy frameworks.

In the Caribbean, an integrated strategy to assist SMEs in benefitting from e-commerce has hitherto been lacking. The present document aims at correcting this situation. In particular, the strategies proposed in here are hoped to help Caribbean firms not only to increase intraregional goods and services trade through e-commerce but also to capitalise on the opportunities created by the CARIFORUM States' Economic Partnership Agreement (EPA) with the European Union. In this sense, the strategy has been formulated after examining the operational and legal issues surrounding e-commerce in CARIFORUM. It recommends specific, tangible interventions to be made in the context of programmes aimed at enhancing the use of e-commerce by SMEs in CARIFORUM by addressing specific challenges they face.

The strategy must also be placed in context of the other trade agreements existing in CARIFORUM. The majority of CARIFORUM States are also parties to the Revised Treaty of Chaguaramas which established the CARICOM Single Market and Economy (CSME) and requires that CARICOM Member States to elaborate a Protocol relating to free circulation of goods in the CSME. Many of the OECS States also recently signed the Revised Treaty of Basseterre establishing the OECS Economic Union, which allows for the free movement of goods, capital and labour between Member States and provides a foundation for closer co-operation on certain governance related matters and deepening economic integration.

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This strategy document consists of two main parts. The first one is devoted to an analysis of the current situation of e-commerce in CARIFORUM countries, its barriers and facilitators. The second part presents the strategies which are proposed in response to the analysis. The strategy part very briefly summarises the main findings of the analysis before describing the vision and elements of the strategy. Thus, a reader with sever time constraints might skip the analytical part. However, given the complex technical and legal nature of many of the proposed actions it is recommended that the reader goes through the complete document or at least consults the relevant sections in part A when looking at a particular strategy or key action.

# PART A: ANALYSIS

# **1** INTRODUCTION AND ANALYTICAL FRAMEWORK

The issues surrounding e-commerce are complex both in technological and regulatory terms, and subject to constant and rapid change. As such, a strategy for the CARIFORUM countries aiming at supporting SMEs' use of e-commerce must be based on an up-to date assessment of the current situation of e-commerce as well as its barriers and facilitators.

Such an analysis is presented in this part of the strategy. It is based on three pillars. First, a **diagnostic of the infrastructure** (chapter 2) determines the quality of the infrastructural basis upon which SMEs in the CARIFORUM countries engage in e-commerce. In most developing countries – and this includes at least some of the CARIFORUM countries –, lack of adequate infrastructure remains the major obstacle to the uptake of ICT. E-commerce cannot be addressed in isolation from other ICT development efforts. Adequate network infrastructure, affordable infrastructure services, and reliable local & international communication are all key factors for the success of any e-commerce initiative. E-commerce will have very little impact for SMEs until it can be accessed and use by everyone regardless of their location. Assessing the current state of the infrastructure in the region will therefore provide important findings for the e-commerce strategy to be developed.

A second core requirement for SMEs' use of e-commerce is that appropriate laws and regulations are in place. Hence, a **legal and regulatory diagnostic** (chapter 3) identifies the current status, especially the weaknesses of existing laws and regulations on e-commerce as well as any laws, proposed or existing, on issues such as data protection, cyber crime, formation of contracts, and electronic payments, etc.

Third, the actual use of e-commerce by SMEs also crucially depends on their internal capacities (both financial and human resources) as well as their strategies and priorities. Studies in developed counties indicate that the knowledge and commitment of owner or managers of SMEs play a key role in whether SME's engage in e-commerce. SMEs tend to have concerns about return on investments that may lead owners or managers to be reluctant to make substantial investments when short-term returns are not guaranteed. Related industry experience of owners is also a key factor in their e-commerce success (Mahajan, Siriniwasan & Wind, 2002).

Governments and SME support institutions can enhance capacities and shape strategies through a variety of measures, including training and awareness raising programmes. In this context, the purpose of the third pillar of the analysis was to **identify how SMEs in CARIFORUM countries actually engage in e-commerce** and to determine their views on e-

commerce. This third part of the diagnosis was carried out through a survey of SMEs (chapter 4). In addition, consultations with SME support institutions in CARIFORUM (see inventory in Appendix A) and other stakeholders have been used for all levels of the analysis.

The overarching analytical framework for the diagnosis is the e-commerce maturity framework (Figure 1) which suggests that the basis for e-commerce and, hence, the starting point for efforts to promote ICT and e-commerce, is at the infrastructure level, which has several dimensions: An appropriate legal and regulatory framework must be laid down, accompanied by the hard telecommunication and connectivity infrastructure. But 'softer' infrastructure such as citizen awareness is also a requirement from an early stage.



#### Figure 1: e-Commerce Maturity Framework<sup>2</sup>

Only if an appropriate fundamental infrastructural platform has been achieved, application and content services can proliferate. The availability of relevant services serves as a catalyst to widespread ICT/e-commerce adoption, and a formal ICT industry/sector begins to develop. Eventually, if appropriate policy actions continue to be pursued, the economy will ultimately become a net exporter of both knowledge and physical products, enabled by the advanced use of the tools and methods of e-commerce/e-business.

Applying this analytical framework the purpose of the diagnostic is to determine how "mature" the CARIFORUM countries are. It is only on this basis that strategies for the facilitation of e-commerce in the region can be formulated.

<sup>&</sup>lt;sup>2</sup> This ICT Maturity Framework (2008) copyrighted to Atiba Phillips of INFOCOMM technologies Ltd based on work done to develop various National ICT Strategies for the Government of Trinidad and Tobago.

# 2 ASSESSMENT OF THE INFRASTRUCTURE FOR E-COMMERCE IN CARIFORUM

Telecommunications infrastructures are the foundation for e-commerce. Ensuring that telecommunications and other networks support the growth of e-commerce within a convergence environment is a necessity. Broadband is being increasingly recognised as being a basic foundation for communications in modern societies. The number of devices being able to utilise broadband networks is growing exponentially, both in the wireless sphere – e.g. smart phones such as Blackberries and iPhone –, through broadband connected televisions and traditional personal computers, and through wireless connected notebooks and netbooks and the recently released iPad.

Convergence is increasingly becoming a feature of modern societies where all these devices are able to deliver similar services, including audio and video playback, recording and transmission, communication over the internet and computing. These developments represent a shift from the way traditional media, telecommunications, the industries that supplied related equipment, and the industry business models and regulatory systems operated.

This convergence is being facilitated by a host of new underlying regulatory frameworks, technical standards, business models and technologies which have been developed in mature markets in North America, Europe and Asia. Still, convergence has presented a challenge to the traditional models of regulation that were developed to govern traditional telecommunications and broadcasting industries and services. A number of models have been developed in attempting to regulate this converged environment. The fostering of convergence depends on a regulatory system designed for a converged environment.

These two issues – broadband and convergence – are major points upon which the development of e-commerce rest. Of special concern for CARIFORUM would be the proliferation of cheap broadband internet access (fixed and wireless) for businesses but also homes, schools and individuals.

The fostering of convergence depends on a regulatory system designed for a converged environment. The current regulatory framework in CARIFORUM emerged from the traditional regulatory system designed for fixed line telephony and the traditional economics of this increasingly obsolete technology. The regulatory framework for convergence requires a forward looking, technologically neutral framework. Technological neutrality denotes the principle of equivalent treatment of services regardless of their method of delivery. It is generally recognised that a technologically neutral position as far as possible should be adopted by the regulator, especially when services such as voice, data and video are now indistinguishable at the level of bits. Areas for consideration for regulatory reform include market access, convergence of broadcasting and telecommunications regulation, security of networks and related cyber security measures, standards for interoperability/ interconnectivity, and internet service providers.

# 2.1 CARIFORUM Internet Routing Infrastructure

An Internet Exchange Point (IXP) is a physical infrastructure that allows different Internet Service Providers (ISPs) to exchange internet traffic between their networks by means of mutual peering agreements, which allow traffic to be exchanged without cost or at significantly reduced costs. An IXP is a prerequisite to the development of any significant domestic content production, hosting, or co-location industry. This barrier must be surpassed before major content providers like Google, Amazon, Akamai, or UltraDNS will even consider providing local services within Caribbean national markets.<sup>3</sup>

Under the current regional internet architecture island neighbours are connected to each other primarily through the mediation of extra-regional third parties; particularly the United States' long distance telecoms carriers.

Data traffic originating in the Caribbean and destined within the region is routed through North America (Miami). Figure 2 illustrates the current scheme.



#### Figure 2: Illustration of current internet routing in Trinidad and Tobago

- Internet traffic leaves Trinidad and Tobago by two routes – fibre optic cable which lands in Miami or Puerto Rico (Route I to NAP (b)) and VSAT which can terminate in disparate loci such New York, California or Canada (Route 2 to NAP (a))
- For information hosted in the US, the server may be located anywhere: e.g. in Texas (point d), California (point c).
- 3. A domestic user accessing local information hosted at points (c) or (d) must first traverse Route I or II and then be routed across the US Internet backbone. It is unclear how many routers/ nodes may be traversed.
- 4. The greater the number of routers/ nodes associated with data transmission.
- 5. A domestic user accessing information from
  - (i) Barbados or
  - (ii) Latin America

is routed to the US via routes I or II, and then routed with the US backbone before being routed via

route III to Barbados or

route IV to Latin America point (f) from NAP (e)

<sup>&</sup>lt;sup>3</sup> See <u>http://www.connectedcaribbean.com/download/CIGF2009 Day 1 Benefits of Internet Exchange</u> Points\_IXPs in\_the\_Caribbean.pdf.

As more SMEs move to using e-Commerce business models there will be a corresponding increase in online content and a resulting increase in bandwidth use and data hosting needs. The region's current internet architecture has the following stumbling blocks:

- A single point of failure. For many CARIFORUM States the single interconnection point in North America represents a single potential point for network failure. A natural disaster or cyber attack that renders this point inoperable would essentially cut access to the internet and web services. Of particular concern would be the inability to send data from one CARIFORUM State that is destined for another CARIFORUM State. This situation has ramifications for regional e-Commerce and e-payments systems. Most if not all networks in the region have their NAPs connect in Florida. The entire North America need not be rendered inoperable by a single cyber attack, only the NAP in Florida that most regional networks connect to. Natural disasters are also of concern more so than cyber attacks. Florida is particularly vulnerable to hurricanes.
- Data Sovereignty/Security/Policy. The current IXPs and Network Access points are not within CARIFORUM's policy or legal jurisdiction. Sending sensitive data across national borders presents a privacy risk to governments and corporations. In light of the US Patriot Act Potential Implications for Electronic Privacy, Security, e-Commerce, and e-Government. These concerns can have an impact on the uptake of e-commerce and e-Government systems within CARIFORUM and the establishment of Regional e-Payment systems. In summary the implementation of a Regional routing infrastructure will go some way in dealing with trust issues that regional banks and other institutions have with e-commerce. Keeping local traffic local means that sensitive data is not subject to inspection by other governments.
- Regional Connectivity Costs. While on island investments have increased the awareness, variety and modernity of ICT services in respective Caribbean territories, the off island investments have served merely to strengthen the historical paradigm of regional connectivity where island neighbours are connected to each other primarily through the mediation of extra-regional third parties; particularly the United States' long distance telecoms carriers. In this arrangement, a percentage of every telephone/internet transaction between CARIFORUM neighbours includes a cost that is paid to US long distance carriers who act as interconnection and transit facilitators.

The current regional models and architecture results in significant cost and latency drawbacks with few (if any) associated gains to regional economies. The risk position to CARIFORUM becomes more dire when one considers this situation in the context of the continued, rapid migration to IP based networks for the carriage of both voice and data traffic – as individual countries embark on ambitious national ICT Plans and the region as a whole moves toward "connecting" itself. In fact, the prevailing model has CARIFORUM States as the net payer for both incoming and outgoing minutes and packets of traffic. Currently, due to this model, access to the internet is provided at a cumulative cost of hundreds of millions of US dollars annually, thus increasing the cost of access to individual Caribbean citizens, businesses and governments. Accordingly, it can be expected that without reform of how CARIFORUM countries are connected, both to each other and the wider world, that for every ICT-enabled communiqué, each CARIFORUM country will continue to have to pay the US intermediaries to facilitate that communication.

An alternative could be the Caribbean Internet Exchange (CAR-IX) but it has similar disadvantages as routing through the USA (Box 1).

#### Box 1: Caribbean Internet Exchange (CAR-IX)

The CAR-IX is a neutral and independent not-for-profit internet exchange modelled after the Amsterdam Internet Exchange (AMS-IX), one of the world's most successful and high quality Internet Exchanges. The CAR-IX platform has been designed and is operated by AMS-IX. The exchange provides continuous high quality full capacity peering services for Caribbean and South American networks that want to keep as much traffic local for network optimisation and financial benefits. CAR-IX presents an opportunity for CARIFORUM to leverage the model, knowledge and infrastructure of CAR-IX to establish a regional network of internet exchanges.

#### **Governance Structure**

The official legal entities of the CAR-IX are the Caribbean Internet Exchange Association and the limited corporation Caribbean Internet Exchange B.V. Both are commonly referred to by the acronym CAR-IX. The exchange governance structure and technical design are both modelled after the Amsterdam Internet Exchange. The network operation is run by the AMS-IX engineering team with additional local remote smart hands. This team consists of 9 engineers who manage and monitor the exchange 24x7.

#### CAR-IX infrastructure

The current CAR-IX peering infrastructure consists of a single Brocade (former Foundry networks) RX4 switch located in the e-commerce park datacenter on Curacao. CAR-IX members can connect to peering infrastructure using Gigabit Ethernet (Copper, Multimode, Singlemode) or fast Ethernet. A cold standby switch of the same type and with identical interface blades is located in the same rack as the production switch. In case of hardware failures of the productions switch this allows for fast replacement of components and minimal downtime. The E-Commerce Park (ECP), where CAR-IX is physically hosted, is located on the island of Curacao, Netherlands Antilles, in the government appointed E-Zone. ECP provides co-location services, support and providing office space.

#### Implications/concerns for CARIFORUM

CAR-IX and the associated ECP are located in Curacao which is not part of CARIFORUM. The IXP and associated hosting facilities are managed out of the Netherlands (AMS-IX) and are therefore not under the same policy jurisdiction as CARIFORUM. Therefore, as is the situation with regional data passing over North American networks, reliance on CAR-IX and the associated data hosting facilities raises issues of security, sovereignty and data ownership for CARIFORUM States.

Sources: <a href="http://www.car-ix.net/">http://www.car-ix.net/</a>; E-Commerce Park Curacao: <a href="http://www.e-commercepark.com/">http://www.e-commercepark.com/</a>

# 2.2 CARIFORUM's Telecommunications Markets

This section is a review of CARIFORUM telecommunications markets, the particular concern being the penetration and uptake of fixed line broadband and mobile services penetration and uptake.

High speed broadband connectivity is generally regarded as a requisite for SMEs to exploit ecommerce opportunities, as commerce involves the transfer of data and information between parties involved in business transactions. With this in mind, it should be noted that there has been a worldwide increase in uptake of mobile telecommunications services (Figure 3). This phenomenon has also been observed in the Caribbean Region, and presents opportunities for businesses to leverage the mobile platform to access consumers, markets and conduct business transactions over a wireless platform.

The following sections determine to what extent the technological basis favouring the development of e-commerce in CARIFORUM exists.

Figure 3: Growth in fixed lines, mobile cellular subscribers, estimated internet users and subscribers to mobile broadband networks worldwide, in billions, 1995-2007



Source: Telecommunications Authority of Trinidad & Tobago, Annual Market Report Telecommunications and Broadcasting Sectors, January-December 2008, available from: http://www.tatt.org.tt/ddocs/Market%20Report%202008%20Rev%203 03 2010.pdf

# 2.2.1 Penetration rates

In order for e-commerce to be successful, access to ICTs should be universal. This section determines the current status in CARIFORUM, as far as data have been accessible.

Access is usually measured by the penetration rate of the service, which is defined as the total number of subscribers divided by the population.

#### 2.2.1.1 ECTEL Member States

According to data from ECTEL<sup>4</sup>, mobile penetration increased from just below 10% in 2002 to 123.6% in 2009 (Figure 4). This expansion is attributed to the competition in the market and the affordability of pre-paid phone services, noting that as of 2009, 94% of mobile users subscribe to pre-paid phone services.

Compared to the mobile penetration rates, as of 2009 Internet penetration is still relatively low in ECTEL countries. Fixed Internet services penetration reached just over 10% in 2009 more than 90% of which are broadband. Mobile Internet access is available to anyone with an Internet enabled handset. However, third generation (3G) mobile access is not yet offered by mobile operators in ECTEL States<sup>5</sup>.

 <sup>&</sup>lt;sup>4</sup> Eastern Caribbean Telecommunications Authority (ECTEL): Economic Achievements After 10 Years.
<sup>5</sup> Ibid.



Figure 4: Fixed, Mobile and Internet Penetration in ECTEL Member States (2002 - 2009)

Source: Authors' calculation based on Eastern Caribbean Telecommunications Authority (ECTEL): Economic Achievements After 10 Years.

#### 2.2.1.2 Trinidad & Tobago

For the period 2002 to 2008, the mobile penetration rate per 100 inhabitants in Trinidad and Tobago constantly increased with the exception of 2007 (Figure 5). As competitive tactics between service providers continued to persist in 2008, the mobile penetration rate stood at 138, a 19.1 per cent growth from 2007.

During the same period, as has been observed for the ECTEL countries above, fixed line penetration stagnated and internet penetration only slowly increased from 3.1% to 8.7%, thus still being significantly below universal access.

Figure 5: Fixed, Mobile and Internet Penetration in Trinidad & Tobago (2002 -2008)



Source: Annual Market Report Telecommunications and Broadcasting Sectors January-December 2009, Telecommunications Authority of Trinidad & Tobago (TATT); Available From: http://www.tatt.org.tt/ddocs/Market%20Report%202008%20Rev%203 03 2010.pdf The mobile market recorded a total of 1.8 million subscribers of which 92% were prepaid customers and 8% post paid. Prepaid packages are usually more preferred by subscribers as there are no contractual commitments and there is a level of flexibility in managing one's mobile expenditure. By contrast, postpaid subscribership has shown no growth since 2006.



Figure 6: Mobile Prepaid and Postpaid Customers 2006 - 2008

Source: Annual Market Report Telecommunications and Broadcasting Sectors January-December 2009, Telecommunications Authority of Trinidad & Tobago (TATT); Available From: <u>http://www.tatt.org.tt/ddocs/Market%20Report%202008%20Rev%203\_03\_2010.pdf</u>

Of the total subscribers, broadband<sup>6</sup> Internet subscribers in 2008 accounted for 75% of total fixed Internet subscribers (Figure 7) and had virtually replaced narrowband access over a period of only two years.



Figure 7: Narrowband and Broadband Subscribers 2006 – 2008

Source: Annual Market Report Telecommunications and Broadcasting Sectors January-December 2009, Telecommunications Authority of Trinidad & Tobago (TATT); Available From: http://www.tatt.org.tt/ddocs/Market%20Report%202008%20Rev%203 03 2010.pdf

<sup>&</sup>lt;sup>6</sup> The TATT defines speeds above 256 kbits/s as broadband access.

With regard to mobile internet subscribers, TATT's statistics reveal that 6% of the mobile population can access internet using their phones. This particular category of Internet users can be divided into postpaid mobile Internet subscribers and prepaid mobile Internet subscribers (Figure 8). Postpaid customers are provided with monthly Internet airtime and are billed accordingly. These persons are considered 'true' mobile Internet subscribers. On the other hand, any prepaid mobile subscriber with an Internet compatible phone and sufficient 'top up' credit is also counted as a mobile Internet subscriber as the user has the capability of automatically accessing the Internet. These users are not billed at the end of the month but instead the charge for Internet airtime is immediately deducted from the prepaid credit. As a result mobile service providers count these prepaid subscribers as mobile Internet subscribers even though they have the option of not accessing the Internet on their phones.





Note: Breakdown between prepaid and postpaid mobile subscribers is only available for 2008. Source: Annual Market Report Telecommunications and Broadcasting Sectors January-December 2009, Telecommunications Authority of Trinidad & Tobago (TATT); Available From: http://www.tatt.org.tt/ddocs/Market%20Report%202008%20Rev%203\_03\_2010.pdf

Contributing to the rise in mobile Internet subscribers may be the availability of more affordable mobile Internet packages to customers as well as of the fact that smartphones are more easily available and affordable in the market.

#### 2.2.2 Cost of access

Figure 9 and Figure 10 illustrate that there has been a general decrease in downlink price for cable modem access while the average price for ADSL and wireless access dropped from 2007 to 2008 but then picked up again in 2009. What is more, substantial price differences between alternative access speeds within the same access technology persist. Thus, for example the average price of wireless access at downlink speed of 4 Mbps in 2009 was only half as high as for a 1 Mbps access.



Figure 9: Caribbean Downlink Speed Average Price per Mbps, per Technology, 2007-2009

Source: Authors' calculations based on Caribbean Association of Network and Telecom Operators, Caribbean Statistics & Rates Evolution, April 2010; Values refer to the following quarters: 2007: Q2; 2008: Q4; 2009: Q2.



Figure 10: Caribbean Downlink Speed Average Price, per technology and speed, 2007-2009

Source: Authors' calculations based on Caribbean Association of Network and Telecom Operators, Caribbean Statistics & Rates Evolution, April 2010; Values refer to the following quarters: 2007: Q2; 2008: Q4; 2009: Q2.

# 2.3 Telecommunication Liberalisation and its Impact on Markets in CARIFORUM

Most CARIFORUM Governments do not have an approved broadband policy. For example, in Trinidad and Tobago, the state majority owned TSTT has not been given any directive by the Government for the wide delivery of broadband service. At the same time the cost of the service is not cheap by international standards. At the other end, countries such as Guyana and Suriname have not even reached full liberalisation of basic telecommunications services, far less to consider the promotion of broadband. The concept of universality must incorporate access to broadband.

#### **International Comparisons**

While many individuals and businesses in CARIFORUM look to the United States for comparison, all data suggests that the United States lags behind a number of nations in broadband adoption. There are a number of factors that play a role in determining international ranking, including the extent of broadband network deployment. While supply is an issue (e.g. Japan and South Korea is around 99% of households, comparisons between the two countries have shown that demand factors play a more important role in determining national adoption rates.

South Korea is recognized as being the nation with the most comprehensive policies to promote broadband adoption. South Korea put in place a wide range of well-funded programs to spur broadband adoption. South Korean Government has created a number of demand-side programs to target affordability and usability, including digital literacy programs that target population groups that otherwise would be less likely to use the Internet. The South Korean government provides subsidies to around 1,000 private training institutes for the purpose of educating housewives, in order to create demand in households. The government provided subsidies for the purchase of personal computers by low-income citizens. The personal computer diffusion promotion established in 1999, aimed to provide personal computers at low-prices, partly through a personal computer purchase instalment plan using the government-run postal savings system. The following year the government purchased 50,000 personal computers and provided them to low-income families on a reasonably priced 4-year lease, with full support for broadband free for 5 years. Other nations have also established similar programs which have been proved to be successful.

A Digital Agenda for Europe, one of the flagship plans under the Europe 2020 Strategy, was issued in May 2010. The European Union's five year plan for the digital economy include measures relating to technology standards, elimination of regulatory barriers, encouraging electronic payments and simplification of digital copyright management and licensing. The European Union intends to double their annual spending on research and development, undertake a major overhaul of telecoms law, and work towards harmonization of the way mobile broadband is rolled out across Europe.

#### Experience in CARIFORUM

The 1990s saw the build-out of digital networks and the offering of cellular services. Internet access was first offered to the public in the early to mid 1990s in most CARIFORUM States, primarily as a dial up service, although DSL was available. However, DSL was very expensive and not very reliable and was offered by way of a leased line.

The global trend towards liberalisation has acted as a catalyst for changes to the telecommunications environment in CARIFORUM within the past decade. WTO commitments were very influential because they broke down the resistance to liberalisation by Cable & Wireless, the traditional monopoly of the English speaking Caribbean (save for Guyana) at one end, and at the other end it increased the confidence of governments to

actively seek to break the monopoly. Because of this, sector reform became a competitive issue, as each country sought to keep up with others. Governments faced pressure from their own population to bring about sector reform.

Within most CARIFORUM States there is a growing understanding of the implications of convergence and the regulatory framework of telecommunications. The Caribbean Telecommunications Organisation (CTO) and the International Telecommunications Union (ITU) also serve as meeting points for the exchange of best ideas in more advanced economies. The populations' proximity and exposure to North America has raised their expectations as to the quality and prices of ICT services which they feel entitled to in their home countries.

In this section, selected existing ICT policies of CARIFORUM countries are examined with the goal of determining whether the provisions are:

- Encouraging or constraining required investment in the telecommunications sector, particularly in new technologies;
- Promoting increased competition and reduction in cost structures in the sector;
- Adequately protecting consumers of telecom services;
- Advancing the Member States' objectives on e-commerce and e-government.

# 2.3.1 <u>Anguilla</u>

The Government of Anguilla fully implemented the Telecommunications Policy by 2003-2004. Cable & Wireless (West Indies) Limited is the incumbent telecommunications provider; and until April 2003 had a monopoly on all telecommunications services<sup>7</sup>. There are, however, three other facilities based telecommunications licensees which had been granted licenses in 2003-2004. Non-facilities based operators are also entered the telecom market, making use of VoIP technology. The opening of the telecommunications market is consistent with the global trends of liberalisation of telecommunication markets.

Anguilla possesses a high rate of broadband penetration. The last available figures resulting from a survey in 2000 show Anguilla as having internet access in about 30 per cent of households<sup>8</sup>. This has greatly increased since then. It is unofficially estimated that 70 per cent of households of internet access. All internet access in Anguilla is broadband. There are three providers Cable &Wireless, Weblinks Limited and Caribbean Cable Communications Limited. As Anguilla does not have a lot of shopping offered on island, Anguillians are quite experienced with e-commerce and the purchase of goods and services over the internet.

<sup>&</sup>lt;sup>7</sup> The market for cellular service was opened in July 2004 with the restriction that all international traffic must be carried by C&W. The entire gamut of telecommunications services was open to competition from January 2005.

<sup>&</sup>lt;sup>8</sup> <u>http://gov.ai/statistics/STAT%20ABSTRACT.htm</u>

#### 2.3.2 Antigua and Barbuda

Antigua and Barbuda has an unusual telecommunications climate with two major monopolies, one of which is a wholly owned corporation of the Government. This has led to a very interesting and unusual situation in which there is strong competition in most telecoms areas and none in a select few.

Antigua Public Utilities Authority (APUA), wholly owned by the Government, has a total monopoly on local telephone lines. It is also officially the regulator of telecommunications in Antigua and Barbuda. Cable & Wireless (now LIME), has a total monopoly on long distance telephone services and is the sole provider of these services. Cellular services, internet services, and cable services have open markets with all having three or more major providers.

The Telecommunications Act of 2007 sought to even the playing field and introduce competition in all remaining areas of telecommunications, and all the major stakeholders were in agreement to move in this direction. In view of this, a new fibre optic cable costing some EC \$20 million was landed in Antigua and Barbuda via Southern Fibre from Guadeloupe in 2007. However, when the reality of the opening up of the telecoms market really hit home with the landing of this cable, both major monopolies moved to prevent it from actually being landed, and the cable literally was left on the beach for a considerable time before permission was granted to allow the cable to enter the state via monopoly owned ducts. The ensuing conflicts surrounding the fibre optic cable being landed in Antigua and Barbuda caused many to re-think the Telecommunications Act and there ensued conflicts and successful attempts by the major players to prevent the passage of this Act.

Broadband services are provided by a variety of major telecommunications providers, and there exists robust competition. The major types of broadband services are ADSL, wireless broadband, and dedicated leased lines services. The major providers are LIME (broadband wireless and dedicated leased lines); APUA (ADSL); and Antigua Computing Technology (ACT), which provides broadband wireless services and dedicated leased line services.

The costs and various speeds and types of broadband services are found in Table 1.

Table 1. Antigua and barbada broadband speeds and cost in cob										
	Residential Speeds							Business Speeds		
Provider	64K	128 K	256 K	512 K	768 K	1024 K	1544 K	1.5 M	2 M	3 M
APUA		32.00	35.85	47.17	62.76	73.58	92.45		111.32	160.38
ACT	75.09	93.96	112.83	188.30						
LIME				48.68	63.77		124.15	244.91		350.57

#### Table 1: Antigua and Barbuda broadband speeds and cost in USD

Notes: K = kilo-bits per second download; M = mega-bits per second download; Business services also include more email addresses and website space in the case of LIME

#### 2.3.3 Barbados

In Barbados, broadband is provided by ADSL, broadband over cable, EVDO Rev A and WiMAX.

Barbados opened its telecommunications market in 2003, with the Government Ministry in charge of telecommunications and the Fair Trading Commission in charge of regulating different aspects of the sector. Liberalisation was phased, with the first phase allowing for the introduction of VSAT-based bi-directional call centre operators and new mobile operators. The second phase which ended July 2003 allowed for liberalisation in domestic services. Private international long distance service providers were able to begin operations after August 1, 2003. Phase III of liberalisation was not in place until 2005.

In March 2003 three new cellular telecom providers were granted licences. TeleBarbados Inc. launched a new high-speed telecommunications service in mid-2006. TeleBarbados products include the International Private Leased Circuit (IPLC), AllConnect, a bundled solution including IPLC, Dedicated Internet Access (DIA) and digital voice, and for smaller businesses, DIA. TeleBarbados is serviced by a 940-kilometre, 20-gigabit submarine fibre-optic cable.

In August 2007, the Barbados Telecommunications Unit published the country's new Voice over Internet Protocol (VoIP) Policy. This Policy sets out the regulatory framework for the operation of VoIP in Barbados and moves towards a "technology neutral" position, encouraging service and equipment providers to innovate, using the best technologies available as they evolve. The framework intends to be a "light-handed" non-interventionist.

In January 2007, Fidelity Wireless revealed plans to offer internet, phone and IPTV/video on demand services (so called "triple play") over a new state of the art wireless broadband network to the residential and business community in Barbados. Fidelity has commenced the construction of a new nationwide 'WIMAX' wireless broadband network.

The Global Caribbean Network (GCN), a subsea cable operator headquartered in Guadeloupe, has connected its voice and data traffic services arriving from the Caribbean to Global Crossing's IP network in St. Croix, via 10-gigabit wavelengths, enabling GCN to extend its services to North America, Europe and Asia.

In Barbados, the issue of cost of high speed reliable internet access with all the required features remains a complaint of various businesses.

# 2.3.4 Dominican Republic

The Dominican Republic has one most advanced telecommunications infrastructures in Latin America, with extensive mobile phone and land-line services and with a mobile teledensity of 80.1.

The Dominican Republic was among the first developing countries to commit to total liberalization under its WTO GATS commitments. As early as 1998 the Government passed a law (Law 153 in 1998) to provide for regulation in a liberalized environment. The Instituto Dominicano De Telecomunicaciones (INDOTEL) is the national regulator of the telecommunications market.

The domestic market is served by a system based on a nation-wide microwave radio relay network and fiber optics lines that cover many of the main cities. The service is efficient and reliable. The country's international telecommunications system is connected to America's Region Caribbean Optical-ring System (ARCOS) as well as a coaxial submarine cable and a satellite earth station.

The telecommunications market includes large companies such as Codetel and Orange from France. There is a multitude of Internet Service Providers: Codetel, Claro (ADSL and wireless), Tricom (WIMAX, ADSL and Cable), Aster (CABLE), VIVA (wireless), France Telecom (wireless), Onemax (WIMAX), and Wind Telecom (WIMAX).

Broadband internet access is growing, with over 381,211 internet accounts and 2,439,997 internet users as of June 2009 according to INDOTEL. Broadband DSL is used by 60% of the total internet subscribers. However, access to regular ADSL, G.SHDSL exists only in the metropolitan areas and prices are fairly high and WiFi hotspots are still a rarity.

# 2.3.5 ECTEL countries

The Organisation of Eastern Caribbean States (OECS) countries' isolation and small size has resulted in limited economic growth and has been recognised as a key bottleneck to developing the economies of these small States. The OECS governments have recognised the potential of ICT to boost growth and employment and have been working over the past six years to reform the telecom sector.

Five of the OECS Members – Dominica, Grenada, St. Kitts and Nevis, St. Lucia, and St. Vincent and the Grenadines – followed the same course in 2002, adopting a model whereby a central regulatory body was established for the five Members, the Eastern Caribbean Telecommunications Authority (ECTEL), with satellite National Telecommunications Regulatory Commissions in each of the participating territories. Under this model, the ECTEL Member States enacted harmonised laws and regulations in order to establish new liberalised conditions open to competition within the field of telecommunications.

ECTEL recently concluded a consultation process on the allocation of spectrum in the 700MHz band. The forthcoming allocation is anticipated to be a significant driver of wireless broadband services over the next five years.

In **St. Kitts and Nevis,** and **Dominica**, broadband is provided by ADSL and broadband over cable. The telecoms landscape in **St. Lucia** has changed significantly since the introduction of competition some years ago, prior to which Cable & Wireless (now known as LIME) was the sole provider of cellular, and internet services. There is now one additional provider in the cellular market, namely Digicel; while there is also another provider in the internet service provision market namely Karib Cable. LIME still provides internet service mainly through ADSL.

#### 2.3.6 Guyana

In Guyana, in 1990 an Agreement was signed whereas ATN acquired eighty percent of the then publically owned Guyana Telecommunication Corporation and the Government retained twenty, the new telecommunications provider being the Guyana Telephone and Telegraph Company Limited (GT&T). GT&T commenced operations in January 1991.

Under this entity massive upgrades and expansion took place. GT&T invested in undersea cables like Americas II and has made it possible for Guyana to attract international data transfer businesses like call centres. Their investments generally have led to GT&T being one of the four largest contributors to Government revenues. Their networks also facilitate payment of telephone bills via banks, post offices, Western Union and Guyana Lottery Company outlets, debit cards, and Visa credit cards.

However, the telecommunications infrastructure in Guyana is still one of the least developed in the CARIFORUM States, and quality of international calls is spotty. Broadband access is expensive and out of the reach for small businesses. One major call centre complained of the very high prices as well as "rationing" of the capacity.

GT&T has a land line build-out obligation which the Government appears to be insisting on, whereas the trend in many rural and remote areas in developing countries is to use cellular or microwave technology to more economically meet build-out requirements. There needs to be rate rebalancing: currently domestic land line calls are practically free whereas prices of international calls are very high. This is inimical to business and investment. In an interview with GT&T a major issue brought up is the prevalence of VOIP bypass and its dire effects on the income of GT&T for international traffic.

In 2000, the Government of Guyana began a project for modernising the telecommunications sector. One of the project's objectives was to liberalise the telecommunications sector and open it to competition, but this project has not yet had a significant impact on the availability of broadband.

# 2.3.7 <u>Haiti</u>

Haiti's telecommunications infrastructure is the least developed in the region. Haiti has less than 2% fixed-line teledensity, one of the lowest penetration rates in the world. The land line phone service is controlled by the Haitian government-owned Telecommunications d'Haiti (Teleco), which has been plagued for years by extremely poor service and operation. The most significant developments in the sector over the past ten years have been in the area of mobile telecommunications, with the Government granting a mobile licence to Digicel in 2006.

Haiti depends on satellite networks for the majority of its communications links. Its main submarine network connects Port-au-Prince to Matthew Town in the Bahamas and into the US. It is jointly controlled by Teleco and the Bahamas Telecommunications Company (BTC).

The country's two largest ISPs are Hainet and Access Haiti. The leading wireless network, Digicel, is still largely operational after the devastating 2010 earthquake.

The international relief organisation Telecoms Sans Frontieres (TSF) is providing IT support, fixed and mobile satellite connections, and multiple broadband access points for UNICEF, UNDAC, NGOs and other emergency and relief efforts.

#### 2.3.8 Jamaica

Jamaica was the first English-speaking country to open its telecommunications sector. This process was conducted in different phases, beginning in 2000 with the liberalisation of mobile telephone services. In March 2003 the entire telecommunications sector, including international services, was opened to competition. The Office of Utilities Regulation (OUR) was given the main responsibility of regulating the sector, and different aspects of the regulatory function that were not assigned to this office were assigned to the Fair Trading Commission, the Spectrum Management Authority and the Broadcasting Commission.

#### 2.3.9 Suriname

Together with Haiti and Guyana, Suriname is among the least developed and liberalised among the CARIFORUM States when it comes to telecommunications. A major issue is that of rate balancing.

The sector is regulated by Suriname's Telecommunications Authority which was tasked with preparing the legal framework for the liberalisation of the telecommunications market. The new Telecommunications Act was finally proclaimed in April 2007.

The State-owned Telecommunicatiebedrijf Suriname (Telesur) holds the monopoly over all fixed-line and broadband services. Until December 2007 Telesur was the exclusive provider in all telecommunications sub-sectors except dial-up internet access, where it had one competitor. The mobile sector is growing and competitive, with three operators, Digicel and Uniqa and Telesur. Suriname's mobile penetration rate is now over 100%.

Suriname's teledensity is slightly lower than average for CARIFORUM, with fixed line penetration low in the interior. Internet and broadband penetration are not well developed, especially when indexed against the country's socioeconomic indicators. Broadband is very expensive and slow. There have been plans to open Suriname's telecom sector to competition, but only mobile liberalisation has been implemented thus far. A new Suriname-Guyana Submarine Cable System (SG-SCS) is scheduled for completion in mid-2010. It is expected to vastly increase bandwidth capacity in Suriname, resulting in much faster broadband. However, prices are likely to remain comparatively high until there is some competition in the broadband sector.

#### 2.3.10 Trinidad and Tobago

In terms of broadband offerings, Trinidad and Tobago has multiple broadband providers competing with multiple technologies. The Telecommunications Services of Trinidad and Tobago (TSTT), the incumbent provider currently offers ADSL, EVDO Rev A<sup>9</sup>, EDGE and plans to very soon offer WiMAX<sup>10</sup>. Other providers offer broadband over cable, island wide Wi-Fi, and wireless broadband using proprietary technologies.

TSTT is currently undertaking a wide rollout of fibre. Columbus Communications operates a cable television infrastructure over which it provides converged services, including cable television, broadband internet and voice services. The cable network was purchased from the previous owner who had underinvested in the network. The network was not designed as a two-directional system capable of sending information to and from the consumer and the company is investing a lot of money to upgrade the infrastructure to one capable of delivering converged services.

Trinidad and Tobago was among the first CARIFORUM States to start the liberalisation process. It is also the most richly resourced CARIFORUM country, in terms of monetary resources and educated workforce, and has the largest industrial and manufacturing sector in the region. Thus it is not surprising that it is the country that has expended, per capita, the most resources in the telecommunications sector. While some of the work may have been unduly drawn out, time wise, other Member States can benefit from understanding the processes and work product.

The Report of the Working Group appointed by Cabinet to prepare a National Policy on Telecommunications for Trinidad and Tobago was delivered in July 1997. This report recommended a renegotiation of the monopoly licence, amendments to the telecommunications laws, the creation of an independent regulator, and presented a roadmap to full liberalisation within three years. While liberalisation efforts were stalled for various reasons after the acceptance of the National Policy in 1997, from 2002 Trinidad and Tobago has developed a number of policies to guide its approach to the development of telecommunications and broadcasting services.<sup>11</sup>

<sup>&</sup>lt;sup>9</sup> However, coverage for EVDO is not complete and it is not very affordable. From interviews with persons at TSTT and the Authority it appears that there are capacity problems with the EVDO network.

<sup>&</sup>lt;sup>10</sup> WiMAX is the new standard that is expected to serve a very significant role in the telecom industry as a backhaul technology for wireless voice and data networks, in addition to bandwidth intensive applications such as wireless video surveillance and traffic synchronisation. WiMAX is a wireless digital communications system that is intended for wireless "metropolitan area networks". WiMAX is designed to extend local WiFi networks across greater distances, such as on a university campus. LTE, or Long Term Evolution is also expected to be a new technology that will form a standard. LTE is a 4th generation (4G) mobile broadband standard. LTE will provide broadband services wirelessly (like EVDO), and will transmit signals via radio platform. With an LTE modem a person can connect to the internet anywhere in the service provider's coverage area, without the need for a "hot spot".

<sup>&</sup>lt;sup>11</sup> The regulatory framework governing telecommunications can be divided into two eras: the monopoly era that applied before July 1<sup>st</sup> 2004 and the modern regulatory framework that came into being on July 1<sup>st</sup> 2004. The regulatory framework of the monopoly era was established by the Wireless Telegraph Ordinance 1936, the Telephone Act 1968 and the Regulated Industry Commission Act 1998.

The modern regulatory framework came into being with the establishment of the Telecommunications Authority of Trinidad and Tobago (the Authority, TATT) as the regulator of telecommunications in Trinidad and Tobago in the promulgation of the Telecommunications Act 2001 (the Act). The Act obligates the Authority to make recommendations to the Minister of Public Administration and Information for the granting of concessions to telecommunications operators (Section 22(53)). It is also responsible for the granting of licences for the use of spectrum. The Authority is also mandated to develop a comprehensive regulatory framework to effectively transform and govern a competitive sector.

The Authority views itself as a super regulator in the order of the United Kingdom's OFCOM and the United States' Federal Communications Commission. It also views itself as a regulator of a converged sector encompassing broadcasting, telecommunications and the delivery of the internet.

The Authority has developed a number of policies for the development of a converged sector, including the "Draft Policy on the Authorisation of Telecommunications Networks and Services and Broadcasting Services in Trinidad and Tobago". This policy has been developed to "set out the guidelines and processes in respect of the authorisation of telecommunications networks, telecommunications services and broadcasting services" and to ensure that:

- There is fair and efficient allocation of resources in the provision of telecommunications services, and that these resources are efficiently utilised;
- Competition is effectively introduced in the provision of services, taking into consideration the convergence of technologies, services and networks;
- The Government's objectives with respect to universality and the increase of the country's Digital Access Index (DAI) are met;
- A "level playing field" exists for new and existing service providers in a competitive environment, being one that is fair, non-discriminatory and transparent;
- Regulation of the sector is effective and supports the development of a competitive telecommunications market;
- The benefits of a competitive market are enjoyed by consumers; and
- That there is regulatory certainty in liberalising the market so that new operators and investors have confidence in entering the market to expand the national telecommunications infrastructure.

#### **Current State of ICT Development**

A study entitled "The Digital Divide in Trinidad & Tobago 2007"<sup>12</sup> was intended to survey the use of digital technology in Trinidad and Tobago. The primary task of this study was the collection of data to allow for the calculation, at the level of identifiable geographical areas or communities in Trinidad & Tobago, and for the country as a whole, of the Digital Opportunity Index (DOI) and the DAI.

<sup>&</sup>lt;sup>12</sup> The Digital Divide in Trinidad & Tobago 2007 Final Report submitted by Dr. Patrick K. Watson and Dr Bheshem Ramlal on behalf of the Sir Arthur Lewis Institute of Social and Economic Studies, University of the West Indies, St. Augustine Campus, Trinidad & Tobago, December 2007
One of the conclusions of the study is that the relatively high value of the DOI Opportunity Index for all communities demonstrates that accessibility to, and affordability of, ICT services is generally not a major issue throughout Trinidad and Tobago. Thus most people have the financial capacity to access ICT services. However, the study disclosed low infrastructure and utilisation indices in communities other than the metropolitan areas. This means that the requisite infrastructure is lacking in many communities and, in any event, there is little use of the internet by the public in communities that do not lie in the most developed areas of Trinidad and Tobago. With respect to internet use, the study found the country's average for internet users per 100 inhabitants to be 33.2. The Authority views this as being unsatisfactory. This indicator is seen as critical as the internet provides the backbone for a host of services which are becoming critical for the functioning of a modern knowledgebased society and economy.

The authors of the study made the following recommendations:

- Immediate steps should be taken to improve the infrastructure, with particular emphasis on encouraging internet access.
- Serious effort should be made to encourage the use of the internet, even with the given infrastructure, at home, at school, at the workplace, internet cafés and other places.
- Priority should be given to the provision of affordable broadband services through fixedline and, especially, mobile services.
- Throughout Trinidad and Tobago, more and more people should be encouraged to subscribe to mobile (broadband) internet services.

It should be noted that, since the study, a number of developments have taken place. Columbus Cable has landed more fibre in Trinidad and Tobago. There has been the issuance of spectrum in the 700 MHz spectrum that can be used for broadband. There is also increased competition in the provision of broadband service. Also of interest is the electricity company's application for a licence for the delivery of broadband service using their power line infrastructure.

# The Regulatory Framework

The Telecommunications Act (the Act) is the primary legislation setting out Trinidad and Tobago's regulatory framework. The Act establishes the Telecommunications Authority of Trinidad and Tobago (the Authority) as the regulator of both the telecommunications and broadcast sectors in Trinidad and Tobago. It has drafted a number of regulations under the auspices of the Act. It has also drafted a number of draft policies and regulations designed to regulate telecommunications and ICT in the context of convergence. Currently, the Draft Implementation plan for Number Portability in Trinidad and Tobago is published for public consultation.<sup>13</sup> The concessions for telephony services are very much like class licenses. The licenses are almost identical save for the schedules that set out the types of services provided.

<sup>&</sup>lt;sup>13</sup> Available from <a href="http://www.tatt.org.tt/ddocs/Number%20Portability%20Draft%20Apr%2001%2010.pdf">http://www.tatt.org.tt/ddocs/Number%20Portability%20Draft%20Apr%2001%2010.pdf</a>.

### Access to facilities regulations

Under the Access to Facilities Regulations all concessionaires have an obligation to provide access to their facilities, and such access shall not be unreasonably withheld (s. 4 (a)). The regulation provides that parties must negotiate matters concerning access to facilities in good faith (s. 4 (b)). It also provides that concessionaires shall neither withdraw nor impair access once granted, save where authorised by the Authority, a dispute settlement arbitrator or a court of law. Concessionaires must also provide collocation services.

Dominant concessionaires are obligated to:

- Provide access to essential facilities they own (7.1).
- Provide access to bundled or unbundled configurations or network components with the access seeker's request.
- Make available equipment and facilities used to combine components to provide service for its own purposes or that of its subsidiary or partner.

The regulation provides flexibility to the Authority in that it may, from time to time, specify essential facilities to which a dominant concessionaire must provide access. It also attempts to provide a level playing field as concessionaries are obliged to apply equivalent conditions in equivalent circumstances to each other, and to provide access to their facilities under the same conditions and of the same quality as they provide to themselves, or to their subsidiaries or partners (s. 10).

### **National Universality Policy**

The Authority has developed a draft National Universality Policy.<sup>14</sup> This policy is one of the requirements under the National ICT Plan. It aims at promoting the initiative where all citizens of the country can have access to information and knowledge through ICTs. These ICTs should reach all locations, be affordable and offer a full range of basic services, taking into account the different needs of the user population. The draft policy is an attempt to "put in place robust regulatory initiatives to improve the Digital Access Index and Digital Opportunity Index of the country over the period 2008-2010 by facilitating the construct of a knowledge-based economy predicated on widespread access to basic telecommunication services through low-cost, high-quality connections, high computer literacy, comfort in using the Internet, its useful content and innovative Internet applications to create value.'<sup>15</sup>

The Authority views universality as "achieving both universal access and universal service." By this definition universal access is achieved when 100% of the country's population can access affordable basic telecommunications services either on a private, public or shared basis.

<sup>&</sup>lt;sup>14</sup> Draft Universality Implementation Plan for Telecommunications Services in Trinidad and Tobago, A Consultative document from Telecommunications Authority of Trinidad and Tobago, June 2008.

<sup>&</sup>lt;sup>15</sup> Adapted from TATT unpublished document "The Draft Framework for Development of a Universality Policy for Trinidad and Tobago.

# The Provision of Affordable and Accessible Internet Services in Universality Service Areas (USAs)

The Authority proposes to place this obligation on internet service providers (ISP) and will require the provision of, at minimum, a 512 Kbps connection/access to internet services upon a reasonable request at a standard price in the respective USAs no matter the geographic location. It is proposed that this obligation would also apply to public institutions, including all schools, libraries, and community access centres. It is also proposed that, where it may not be economically feasible to install wired infrastructure, ISPs may consider using wireless broadband technologies such as Wi-Fi, WiMax, EVDO and EDGE.

### **Cost-based Pricing for Interconnection**

The Authority recognises the importance of interconnection for a competitive converged telecommunications sector and proposes to set the interconnection rates based on the concessionaire having the same interconnection costs as those of an efficient operator in the relevant market. In the event that the concessionaire wishes the Authority to adopt any other position, it will have to justify such approach on the basis of cost analysis and/or international cost-based benchmarks acceptable to the Authority.

### **Evaluation of the Approach to Regulation in Trinidad and Tobago**

The Authority seems fully aware of the latest trends in regulation and the basis of these trends. It has also initiated studies to determine the affordability, availability and level of take-up of digital technology by the public in different areas of Trinidad and Tobago. These studies also disclose the reason for the respective rates of take-up. It is aware of the challenges faced in Trinidad and Tobago with respect to increasing the use of the internet in Trinidad and Tobago. It is fully cognisant of its role in fulfilling the Government's Vision 2020.

The Authority is also aware of the work that remains to be done in filling out the regulatory regime. It has published draft policies and regulations for consultation. These draft policies and regulations represent best practices in their respective areas.

The development of the ICT sector indicates the relative success of the regulatory framework. There has been investment by Digicel in cellular service, Columbus Communications is making major investments in building out fibre throughout the country and the infrastructure necessary to deliver broadband and related services to its cable television customers. TSTT is also building out its broadband network in order to provide broadband as well as television programming in addition to telephony. Also indicative is the number of smaller players in telecommunications, broadband and media sectors who are participating in the market.

A number of gaps, however, remain in the current regime including the proposed policies and regulations. In the first instance the incumbent, TSTT, is 51 per cent owned by the Government, the other 49 per cent being owned by Cable & Wireless (West Indies) Limited. The Telecommunications Policy had recommended that the Government's interest be divested. However, the ownership pattern remains the same. This has implications pertaining to the transparency of a regime where the Government is the owner and has significant input into the staffing of the regulator. Still, the regulator should be commended in making fair rulings, as in the case of the ruling regarding interconnection between TSTT and Digicel, which was eventually affirmed in the Court.

A recurring problem was the issue of the charges TSTT charged for providing broadband service to its competitors. Prices charged were so high that many found it cheaper to use a VSAT service. The regulator has not to date made any ruling in regard to what should be fair costs for providing such service. This seems to be due to the present lack of a regulatory mechanism for the regulator to take such a role. The regulator has proposed a policy and regulation to deal with this issue. Still, the regulator has licensed other providers including Columbus Communication to provide such services and resell to other service providers making a competitive market.

The current regime posits competition as the primary means to promote the delivery of broadband services, supplemented by a universality policy and regulations. However, it seems that the countries with the greatest penetration of broadband with the highest speeds and lowest costs, such as South Korea and Japan, are countries which have proactive dedicated broadband policies.

The regime is still treating broadcasting and telecommunications and broadband as distinct services. It has however, created a regulator that regulates all these sectors. However, with the growth of streaming audio and video, internet radio and television, peer-to-peer services (both legal and illegal) and video and audio downloading and rental services, including those provided by Apple, Microsoft and Amazon, these distinctions are becoming increasingly obsolete.

The current regime does not provide for resale of services by companies which do not have facilities. To date there does not seem to be any proposal to deal with this issue. Resale of broadband, both fixed and wireless, would create a more competitive and dynamic market for broadband and the converged services that are delivered by broadband.

While there is a regime for interconnection geared towards telephony, the regime does not go far enough with respect to broadband. It also seems that the issue of broadband interconnection is being contemplated at this time.

The regulator has identified various difficulties with respect to the delivery of broadband service including poor infrastructure, lack of effective choice and lack of countrywide broadband wireless service. It has identified mechanisms to increase broadband availability which seems in keeping with best international practice while at the same time relevant and workable to Trinidad and Tobago's circumstances.

The Authority's concept of universality is significant as it incorporates access to broadband. The Authority's use of benchmarking and goal setting is also significant as it attempts to bring real results that would impact the general population and development of Trinidad and Tobago. The Authority does not seem to have any plan relating to the issue of net neutrality. There also is no stated policy geared towards facilitating an IP exchange. In general, the Authority does not seem to have a broadband policy. It seems to be adopting the Government's Fastforward/Vision 2020 statements. However, the countries with the greatest broadband penetration with the lowest cost and highest speeds are those countries with expressed broadband policies with state participation in the delivery of broadband service. E.g. in Trinidad and Tobago, the state majority owned TSTT has not been given any directive by the Government for the wide delivery of broadband service. At the same time the cost of the service is not cheap by international standards.

# 2.4 Summary

For most developing countries, lack of adequate infrastructure remains the major obstacle to the uptake of ICT. E-commerce for SMEs cannot be addressed in isolation from other ICT development efforts. Adequate network infrastructure, affordable infrastructure services, and reliable local & international communication are all key factors for the success of any ecommerce or e-government initiatives. Further, e-government will have very little impact until it can be accessed and used by everyone regardless of their location.

While the major infrastructure factor affecting the uptake of e-commerce is the availability of high speed, reliable and affordable broadband access, the factors resulting in this are often connected to wider telecommunications liberalisation efforts, as well as cultural factors. The various CARIFORUM States are now at varying levels of infrastructure development. CARIFORUM States should continue to liberalise network infrastructure and promote broadband competition and liberalisation in network services and applications. Where the need has been identified, States should develop universal access to expand broadband access to remote areas and identified underserved groups.

Even in countries that have liberalised their telecommunications sector, the continuing rapid development of telecommunication technologies means that many countries experience regulatory "gaps" as policy and regulation "catch up" to existing technologies and products offered by operators.

Globally, broadband leaders, i.e. the countries with the highest penetration rates and highest quality broadband access (measured in terms of upload and download speed) are found in East Asia as well as relatively small countries (Table 2). There is no reason why CARIFORUM countries should not also be among the leading group. After all, the quality of broadband access is not only a technical issue but also depends on sector policies (Box 2).

### Table 2: Global broadband leaders, 2010

Rank	Countries
1	South Korea
2	Hong Kong
3	Japan
4	Iceland
5	Switzerland, Luxemburg, Singapore
6	Malta
7	Netherlands,
8	United Arab Emirates, Qatar
9	Sweden
10	Denmark

Source: Oxford University Saïd Business School, Third Annual Study of the Quality of Broadband Connections.

#### Box 2: Why Internet Connections are Fastest in South Korea

Sutter notes that broadband internet speeds in the United States are only about a quarter the speed as those in South Korea, the world leader. Further, US internet connections are more expensive than those in South Korea. Sutter argues that differences in policy and culture contribute to the differing levels of connectivity between the two countries.

As Sutter explains, countries with fast, cheap internet connections tend to have more competition. In the US, like most CARIFORUM countries, most people choose between a cable company and a telephone company when they sign up for internet service. In countries such as South Korea, the choices are more varied. In South Korea where more than 94 percent of people have high-speed connections the Government has actively encouraged citizens to get "connected".

The article also notes that South Korea, Japan and several European countries have experimented with or established infrastructure-sharing as a way to get new companies to compete in the broadband market. The US does not require broadband providers to share their lines, and some experts cite Korea's relative openness as one reason the internet there is so much faster and cheaper than in the US. Under the "open" system, broadband providers must share the cables that carry internet signals into people's homes with other broadband providers.

Importantly, since the 1990s South Korea has set a priority that it would be a highly connected country with a high degree of internet literacy. It has aggressively pursued its policy of being a highly connected country. In the article Taylor Reynolds, an economist at OECD, is quoted as saying:

"The country is still four to five years ahead of the US when it comes to broadband policy, even as the United States tries to catch up. [...] Korea has long been a leader in broadband and in very fast broadband. [...] And, in fact, the technology that Korea has used for probably the past four to five years is VDSL, and that's a technology that's now being put in by AT&T [in the United States]"

Meanwhile, Korea is abandoning that technology, and using technology that is likely to increase current bandwidth speeds 10 times.

South Korea and Japan illustrate successful models of delivery of the highest speeds of broadband and converged services to an accepting public.

Source: Sutter, John D., "Why Internet Connections are Fastest in South Korea", CNN March 31, 2010.

To summarise, as Table 3 illustrates, CARIFORUM States have made efforts at liberalising the telecommunications sector, introducing second or third providers, particularly for mobile and ISP services. There is the need to now move beyond policies for basic connectivity and

ICT readiness to encourage the rollout of affordable quality broadband networks to underpin the competitiveness and growth of ICTs. $^{16}$ 

Country	Telecommunications	Current Regulatory	Articulated Policy	Broadband
	liberalisation (full or	Framework takes into	for regulation for	Policy
	substantial	consideration convergence	convergence	
Antigua & Barbuda				
Bahamas	V	$\checkmark$		
Barbados	V	$\checkmark$		
Belize				
Dominica	V	$\checkmark$		
Dominican	V	$\checkmark$		
Republic				
Grenada	V	$\checkmark$		
Guyana				
Haiti				
Jamaica	V	$\checkmark$		
St Kitts & Nevis	V	$\checkmark$		
St Lucia	V	$\checkmark$		
St Vincent & the	$\checkmark$	$\checkmark$		
Grenadines				
Suriname				
Trinidad & Tobago	$\checkmark$	$\checkmark$		

# 3 REVIEW OF THE SCOPE OF EXISTING E-LEGISLATION IN CARIFORUM

Table 4 shows that most CARIFORUM countries still have to make large leaps in order to enact and implement the required legislation. The table also provides an idea of the large task involved in the harmonisation of legislation process. Details are provided in the following sections.

<sup>&</sup>lt;sup>16</sup> See <u>www.oecd.org/dataoecd/32/28/34228733.pdf</u>.

Country	Commercial	Data	Cyber-	Evidence	Access	Electronic	Consumer	Making	E-
	Code/ Digital	Pro-	crime	and pro-	to infor-	funds	Protection	of codes	Government
	Signatures	tection/ Privacy		cedural	mation	transfers		of conduct	enabling provisions
Antigua & Barbuda	V		Х	٧	Х	Х			Х
Bahamas	$\checkmark$	V	V		V		х		V
Barbados	V		V	Х			Х		Х
Belize	V				Х		х		
Dominica	0								
Dominican Republic	V		V	٧		V			
Grenada	0								
Guyana	0	0	0	x0		0	0	0	0
Haiti									
Jamaica	V		V		х				
St Kitts & Nevis	0								
St Lucia	0								
St Vincent & the	0				х				
Suriname									
Trinidad & Tobago	0	0	0	X0	0	Х	0	0	0

### **Table 4: Key legislative Enactments and Status**

Legend: √ Enacted; X Partial implementation (needs updating or widening); 0 Draft law

# 3.1 Legislation regarding e-commerce

The legal and regulatory core framework for e-commerce needs to address three key areas of regulation:

- 1. Commercial code for e-commerce activities, including digital signatures and electronic transfer of funds;
- 2. Protection of consumers, data and information;
- 3. Cyber crime.

In the following sections we briefly discuss the issues involved in these three key areas, before providing a comparative table on the regional implementation status regarding each of them in CARIFORUM.

### 3.1.1 Commercial code for e-commerce activities

The legal framework for enabling e-commerce needs to include provisions regarding electronic transactions and contracts negotiated at a distance, geared at establishing a minimum level of protection for consumers. Provisions with respect to the formation and the performance of contracts need to be examined as, in an electronic environment, existing laws are likely to generate uncertainties relating to the validity and enforceability of electronic contracts (for example the requirements for written documents, for handwritten signatures, or the rules of evidence that do not take into account electronic documents).

Another significant issue that must also be addressed is the issue of the security of electronic commerce. Parties to electronic contracts need to feel secure that the sender and receiver in the electronic transactions are who they purport to be and that the electronic record can be authenticated and not forged while in transit. Provisions on secure technologies such as digital signatures and digital certificates will be needed in order to help meet and address some of these challenges.

The global nature of the internet and e-commerce means that harmonisation is essential to the growth of electronic transactions and the establishment of a predictable legal environment. Countries worldwide have been giving consideration to the UNCITRAL Model Law in their reform efforts which have been ongoing since the 1990s, with many developing countries enacting laws from 2000.

In the Caribbean, countries which have enacted electronic transactions legislation include Anguilla, Antigua and Barbuda, Bermuda, Bahamas, Barbados, Belize, Cayman Islands and Jamaica. English common law countries such as Singapore, South Africa, Malaysia, New Zealand and Australia have also developed and implemented their electronic transactions laws. The provisions of the UNCITRAL model law have been expanded, refined and adapted to the English common law system of legislation over the past 14 years, to the extent that CARIFORUM States need not "reinvent the wheel" but rather can look to the provisions developed and refined in different jurisdictions which have also withstood the test of time.

A more recent development in the area of electronic communications is the UN Convention on the Use of Electronic Communications in International Contracts (UN Electronic Communications Convention) and the enactment of provisions in accord by places such as Singapore and New South Wales. This Convention is an updated international legal framework for e-commerce that takes into account developments brought on by the Internet and other technological advances. It seeks to facilitate global e-commerce trade by establishing a set of comprehensive rules to guide the use of electronic communications in the negotiation and formation of international contracts. Both Trinidad and Tobago and Guyana are now considering including updating provisions in accordance with the UN Electronic Communications Convention in their 2010 Electronic Transactions draft laws.

An important factor sometimes overlooked is that the new laws must facilitate the use of electronic transactions in the public sector, the law should contain an omnibus provision through which government departments and statutory boards can accept electronic filings and fees without having to amend their respective Acts. It should also allow public bodies to issue permits and licenses electronically. More specifically, the law must allow the government to make and receive electronic payments in order to improve the efficiency of its payments and receipts systems. The delivery of e-government services may also require amendments to specific laws, such as the laws relating to evidence or the Interpretation Act.

### 3.1.1.1 Digital signatures

The laws of certain countries explicitly disallow any form of signature other than the traditional "ink on paper". Even when the law does not explicitly disallow electronic signatures, case-law is not well developed, and many businessmen are justifiably concerned

about how the courts will ultimately view electronic signatures. Another significant issue that must also be addressed is the issue of the security of electronic commerce. Parties to electronic contracts must be satisfied that the sender and receiver in the electronic transactions are who they purport to be and that the electronic record can be authenticated and not forged while in transit. Provisions on secure technologies such as digital signatures and digital certificates will also be needed in order to help meet and address some of these challenges.

Establishing a framework for the authentication of computer-based information is necessary in today's commercial environment. The challenge is that concepts from the information security field often correspond only loosely to concepts from the legal field, even in situations where the terminology is similar. The historical legal concept of "signature" recognises any mark made with the intention of authenticating the marked document. In the digital world, today's broad legal concept of "signature" includes markings such as digitised images of paper signatures, typed notations and even addressing notations, such as electronic mail origination headers.

Historically, people might have been asked for driver's license or identification card numbers. Now, due to concerns about security fraud, people are less frequently asked to supply an identification card number online. They may have, however, a site-specific password or account number, in connection with a bank account or a credit card account. These are now rapidly replacing electronic signatures in many transactions. From an information security viewpoint, these simple "electronic signatures" are distinct from "digital signatures" although "digital signature" is sometimes used to mean any form of computer-based signature. "Digital signature," as used in information security terminology, means the result of applying the technical processes described below.

# 3.1.1.2 Electronic funds transfer

Electronic funds transfer (EFT) refers to the computer-based systems used to perform financial transactions electronically. The term is used for a number of different transactions: where a cardholder makes use of a payment card such as a credit or debit card, direct debit payments from customer to business, online banking, direct deposit payroll payments from a business to its employees, transactions involving stored value of electronic money, e.g. a "wallet" in mobile commerce, wire transfers and electronic benefit transfer, where a recipient authorises a transfer of their government benefits from a government account to a retailer account to pay for products received.

The principles guiding the development of electronic payment systems are transparency, integrity, security and auditability. In addition, there are several aspects of electronic payment systems for which the rules of their use need to be clear. These are:

- Evaluation of vulnerability (determining the products)
- The financial risk borne by issuers of e-money (determining the issuers)
- The supervision of payment systems (monitoring the system)
- The operation of monetary policy (managing the system)

Box 3 provides a brief description of policies and regulations undertaken by two CARIFORUM countries, the Dominican Republic and Trinidad and Tobago, in the area of electronic funds transfer.

# Box 3: Regional Implementation of Electronic Funds Transfer – Examples of Trinidad & Tobago and the Dominican Republic

EFT is one area in which CARIFORUM countries have expended much effort, primarily because electronic funds transfers are not yet ubiquitous. Trinidad and Tobago is an exception in that there is a huge demand for an efficient legal and regulatory regime due to the number of large monetary transactions, fuelled by the oil and gas sector and manufacturing and corporate sectors. In addition, most people use their debit or credit cards on an everyday basis due to fear of walking around with large amounts of cash.

The Policy Document for Amendment to the Exchequer and Audit Act to facilitate e-government payment notes that in Trinidad and Tobago the public has been making increasing use of debit and credit cards and more recently the Real Time Gross Settlement (RTGS)<sup>17</sup> and Automated Clearing House (ACH)<sup>18</sup> systems. In 2006 debit and credit cards combined amounted to over 60% of non-cash payment transactions in Trinidad and Tobago. Card based transactions totalled some 23 million transactions in 2008. RTGS and ACH transaction volumes increased from 200,000 in 2006 to 2 million by the end of 2008.<sup>19</sup> The Government remains the largest single issuer of cheque payments utilising an average of some 160,000 cheques monthly. The Government also receives high volumes of cheques annually for tax and other payments from the public.

In Trinidad & Tobago the ACH is owned by six commercial banks and the Central Bank, which have established a company, the Trinidad and Tobago Interbank Payments System (TTIPS), to manage its operations. The ACH is used for large volume, low value (under \$500,000) payments. Payments sent through the ACH are cleared and settled within 24 hours. Anyone with access to a bank who wants to make a payment to someone else's bank account can use this system. To use the ACH, an individual (or company) simply has to request a bank to use this means of payment and provide details of the payment such as the amount, the beneficiary's account number and the date of payment.

Trinidad and Tobago has an Electronic Transfer of Funds Crime Act, 2000, which created offences relating to theft and misuse of, and unauthorised access to, credit cards and debit cards and which is very similar to Antigua and Barbuda's.

The Financial Institutions Act, 2008, defines the concept of electronic money and explicitly gives the Central Bank the responsibility for oversight of payment systems. This Act gives the Minister of Finance, after receiving the recommendations of the Central Bank, the authority to make Regulations which govern the transfer of funds by electronic means. Under this authority, the Bank is preparing draft regulations on the general use of electronic funds transfers in Trinidad and Tobago.

The Government of Trinidad and Tobago is currently finalising several other pieces of legislation. These include the Exchequer and Audit (Amendment) Bill and regulations to enable government payments. The new policy relating to government payments states that the objectives underlying the proposed changes to the legislation are to allow the Government to:

- Make and receive electronic payments in order to improve the efficiency of its payments and receipts systems.
- Provide the public with more efficient and convenient options for transacting with the Government with

<sup>&</sup>lt;sup>17</sup> RTGS- A system which processes the continuous (real-time) settlement of funds or securities transfers individually on an order by order basis (without netting). Bank for International Settlementshttp://www.bis.org/publ/cpss.

<sup>&</sup>lt;sup>18</sup> ACH -An electronic clearing system in which payment orders are exchanged among financial institutions, primarily via magnetic media or telecommunications networks, and handled by a data processing centre. Bank for International Settlements- <u>http://www.bis.org/publ/cpss</u>.

<sup>&</sup>lt;sup>19</sup> Central Bank of Trinidad and Tobago, The Payment System in Trinidad & Tobago; <u>http://www.central-bank.org.tt/news/releases/2010/mr100104-2.pdf</u>.

due regard to issues of consumer protection.

- Provide a safe and secure EFT environment for the consumer to transact business with government agencies.
- Minimise Government's risk with respect to litigation ensuing from loss suffered by the customer arising from situations including, but not limited to, malfunctioning of equipment, unauthorised access and errors in processing.

The Dominican Republic is one of the CARIFORUM States with a more sophisticated system of clearances at the Central Bank. The system includes an Automated Clearing House Operations, a Clearing Automated Teller Machine (ATM) Operations Clearing processed and a Point of Sale (POS) Operations Clearing, all processed by Cardnet.

# 3.1.2 <u>Consumer protection</u>

The basic principle in setting standards for consumer protection in e- commerce is that the rights of the consumer should not be diminished through the use of the technology. The consumer should, at a minimum, retain existing legal rights and protection. Recognition must be given to the fact that existing consumer laws are not capable of being adapted to the peculiarities of the online environment, so that electronic commerce will require different protection and redress mechanisms than those currently existing in CARIFORUM States.

In general, "old" Consumer Protection laws are fully applicable to online transactions. In the US on a regular basis, Consumer Protection statutes are applied to online or digital transactions.

At the federal level, the Federal Trade Commission (FTC) Act dates to 1914. This is the federal "consumer protection" statute, which gives the Federal Trade Commission regulatory authority over interstate commerce; it does not provide for a private right of action. The FTC applies the FTC Act to online privacy matters, deceptive practices, fraud, disclosure issues, etc. There have been some updates to the FTC's jurisdiction to give it authority to regulate spam, etc., but not specifically to modify the definitions or scope of the prohibited practices.<sup>20</sup> The language in Section 5(a)(1) defines the scope of prohibited conduct (unfair or deceptive acts and practices) is broad and dates back to the statute as originally enacted.

At the state level, most states have "unfair and deceptive acts and practices" (known as "UDAP") statutes. These allow both attorneys general and, in some cases, affected parties, to challenge UDAP. These statutes have been applied to online transactions and behaviour, including the same categories as mentioned above. These statutes are "old style" though some may have been amended to take into account newer practices. In general, though, "cyberspace" is not necessarily thought to be its own separate world, but fraud is fraud and disclosures can be misleading and inadequate, whether on physical goods or on websites. (By way of example, if an auto dealer advertises a low price and then does a "bait and switch" – charging a higher price when the consumer wants to buy the car – the UDAP statutes do not differentiate as between advertisements in a newspaper or television station

<sup>&</sup>lt;sup>20</sup> See <u>http://www.ftc.gov/ogc/FTC\_Act\_IncorporatingUS\_SAFE\_WEB\_Act.pdf</u>.

or on the dealer's website.) Some of the States have established, in their attorneys' general offices (the official who is responsible for enforcing these statutes) specialised bureaus that focus on internet-related issues.<sup>21</sup>

The extraterritorial issues are very interesting, and are being grappled with in the US and Europe. In the US, to what extent can a US court (or regulator) have jurisdiction over a foreign website selling goods into the US. As a practical matter, unless the seller has a presence in the consumer's market, there is no jurisdiction and, practically speaking, no enforceable remedy.

In CARIFORUM States there will be a particular need to strengthen cross-border cooperation between businesses and consumer groups and for the development of rules with cross-border application. In Europe, Directive 2000/31/EC created the basic legal framework for electronic commerce in the internal market. The objective of the Directive is to remove barriers to cross-border online services in the European Union and provide legal certainty to business and consumers. The Electronic Commerce (EC Directive) Regulations 2002 (Statutory Instrument 2002 No. 2013) which implements this Directive is a very useful document for CARIFORUM States in considering their consumer protection provisions, as it contains many provisions that can easily be adapted into the laws of CARIFORUM States.

In 2009, the OECD published what amounts to a handbook on e-commerce and consumer protection.<sup>22</sup> It Includes a set of guidelines for consumer protection, and a review of international and regional cooperation schemes – aspects of which may be applicable in the Caribbean region - as well as a review of the issues. This follows the OECD's much earlier *Best Practice Guidelines for eCommerce* of 2002.<sup>23</sup>

Canada and Australia, for instance, have also produced Codes of Practice or Guidelines in the areas of consumer protection.<sup>24</sup>.

Consumer protection is an area where CARIFORUM countries must put in some resources to. While the law of Belize contains consumer protection, and the draft 2010 Electronic Transactions Bills of Trinidad and Tobago and Guyana also contain some provisions, a more holistic approach to consumer protection in online transactions is needed to foster the trust necessary to increase the sale of goods and services online.

http://www.oecd.org/dataoecd/44/13/44047583.pdf. <sup>23</sup> See http://www.olis.oecd.org/olis/2002doc.nsf/LinkTo/NT00000CCA/\$FILE/JT00126337.PDF.

<sup>&</sup>lt;sup>21</sup> A pro-consumer overview of the state UDAP statutes is here: <u>http://www.consumerlaw.org/issues/udap/content/UDAP\_Report\_Feb09.pdf</u>

<sup>&</sup>lt;sup>22</sup> Empowering Communities: Strengthening Consumer Protection in the Internet Economy.<sup>22</sup> Background Report to an OECD Conference held on December 8 – 10 2009. See

<sup>&</sup>lt;sup>24</sup> See Canadian Code of Practice for Consumer Protection in Electronic Commerce (available at http://cmcweb.ca/eic/site/cmc-

<sup>&</sup>lt;u>cmc.nsf/vwapj/EcommPrinciples2003\_e.pdf/\$FILE/EcommPrinciples2003\_e.pdf</u> and Australian Guidelines for Electronic Commerce, 2006 (available at

http://www.treasury.gov.au/documents/1083/PDF/australian\_guidelines\_for\_electronic\_commerce.pdf).

### 3.1.2.1 Information Security Service Providers

The law must make provision with respect to information security procedures providers. The current regulatory framework for certification authorities (CAs) enshrined in many electronic transactions laws globally is largely based on Public Key Infrastructure (PKI) technology which was one of the most secure authentication architectures at the time of drafting five or ten years ago. PKI technology was used as the benchmark for the integrity and security of authentication services offered by certification authorities in e-commerce transactions. Since then, new security technologies and solutions have emerged and changed the authentication and security landscape globally. Biometrics is an example of these new technologies. Thus the new laws should not make any PKI-specific references in order to be technology neutral.

At present, the market for SSL certificates, a kind of certificate used for website security, is largely held by a small number of multinational companies. This market has significant barriers to entry since new providers must undergo annual security audits (such as WebTrust for Certification Authorities) to be included in the list of web browser trusted authorities. More than 50 root certificates are trusted in the most popular web browser versions. A 2009 market share report from Net Craft as of January of that year determined that VeriSign and its acquisitions have a 47.5 % share of the certificate authority market, followed by GoDaddy (23.4 %), and Comodo (15.44 %).

Given the difficulties of, and significant barriers to becoming a trusted certification authority in the international context, with its entry within the root CA of existing major browsers, it would be more beneficial within CARIFORUM States for persons to become resellers of large commercial certification authorities, and for both government and the local top level domain country code operator to develop their respective operations to allow for online, automated identity searches and verification required by commercial CAs before issuing digital certificates.

Any form of regulation, accreditation, registration or licensing system will therefore have to deal with "home grown" security procedure providers as opposed to resellers or the established certification authorities or other security services provider.

### 3.1.2.2 Privacy and Data Protection

The protection of individuals with regards to the processing of personal data and to the free movement of such data has become an important issue. Data-processing systems must, whatever the nationality or residence of natural persons, respect the fundamental freedoms and rights of individuals, notably the right to privacy. Privacy has special relevance to the internet as the internet has the potential of being the greatest collection and storage mechanism in history. Apart from providing goods, services and information, websites, through a number of mechanisms, collect personal information about, track the surfing habits of, and gather copious information on the personal interests and online behaviour of their visitors. Most of this information is used by websites to better understand and cater to the needs of their customers and improve the usability of their sites. However, this

information is sometimes sold to third parties who may use it in a manner that may be invasive.

Data protection in e-government has special relevance as individuals would not want their data being misused or wrongfully falling into the hands of third parties. There is clear indication that fear of abuse of such personal information could act as a damper on the establishment and use of e-government services. Clear rules for the use of such data and for the protection of the individual are important.

Directive 95/46/EC of the European Council of 24 October 1995 on the protection of individuals with regard to the processing of personal data and on the free movement of such data requires EC Member States to ensure the rights and freedoms of natural persons with regard to the processing of personal data, and in particular their right to privacy, in order to ensure the free flow of personal data in the Community. Directive 2002/58/EC of the European Parliament and of the Council of 12 July 2002 concerns the processing of personal data and the protection of privacy in the electronic communications sector (Directive on privacy and electronic communications).

The Council of Europe's Convention for the Protection of Individuals with regards to Automatic Processing has also set out guidelines. The implementation of these directives, together with various guidelines developed over the past decade have formed the basis of legislation in developed countries and have set the standards under which e-commerce is conducted. For e-commerce to develop at a sustainable level in CARIFORUM States, the same standards that apply in these countries are to be adopted.

# 3.1.3 Cybercrime legislation

The development and growth of computer networks, the internet and e-commerce have provided opportunities, not only for those who seek to legitimately benefit from these technologies and systems, but also for those who seek to maliciously exploit the systems and the loopholes that exist in the present body of non-internet related law. Cybercrime is criminal activity done using computers and the internet. This includes anything from forging emails to stealing from online bank accounts. Cybercrime includes non-monetary offenses, such as creating and distributing viruses on other computers, sending threats via email or posting libellous information or a company's trade secrets on the internet. The most publicised form of cybercrime is unlawful access to information. Statistically, the majority of data breaches are committed by employees.

At present, in many CARIFORUM States the existing laws are "stretched" to fit new technology-enabled crimes. Offences need to be created for specific crimes. The issue of harmonisation is also important. The ITU HIPCAR Draft Assessment Reports on Information Society Issues notes that

"with regard to computer crime and cybercrime the issue of harmonisation of legislation is highly relevant as a large number of countries base their mutual legal assistance regime on the principle

of 'dual criminality'.<sup>25</sup> Investigations on a global level are generally limited to those crimes that are criminalised in all affected countries. Although there are a number of offences that can be prosecuted anywhere in the world, regional differences play an important role.<sup>26</sup> The harmonisation of legislation is therefore a key requirement not only to fill existing gaps in the national legislation but also to enhance the cooperation among the beneficiary States."

These new technology-enabled crimes require that new procedural powers be given to law enforcement authorities to effectively investigate and prosecute the commission of such crimes. Law enforcement units need to be able to apply for search and seizure warrants and Production Orders and to require relevant persons to assist police in investigations. Procedures for recordal of and access to seized data, disclosure of stored traffic data, preservation of data, interception of electronic communications and the interception of traffic data also need to be articulated. The validity of electronic evidence and the requirement for confidentiality by, and limitation of liability of, service providers must be provided for in legislation.

Other issues to be dealt with include technical surveillance of networks, computer communications and internet activity, data retention, and collection and use of electronic evidence. Amendments must also be made to the Evidence Act or provisions specifying what actions amount to search and what actions amount to seizure of electronic data, to ensure consistency with the larger body of the law of evidence.

# 3.1.4 <u>Regional implementation of e-commerce legislation</u>

Table 5 shows the results of a review of existing legislation relating to the three key areas of e-commerce regulation. Based on the table, two conclusions can be drawn. First, e-commerce legislation in CARIFORUM lacks uniformity, which constitutes a major stumbling block for cross-border e-commerce (as well as to for the creation of a single market). Not only are existing laws not harmonised, but there are also some countries which have relatively well developed laws whereas other have no e-commerce legislation in place whatsoever. The development of harmonised e-commerce laws must therefore be considered as a priority.

Second, while some areas of the commercial code for e-commerce are relatively well developed, other areas, such as cybercrime legislation, hardly exist within the region. Again, the closure of these legislative gaps is imperative in order to create a reliable legal basis on which e-commerce in the region can strive.

<sup>&</sup>lt;sup>25</sup> Dual criminality exists if the offence is a crime under both the requestor and requesting party's laws. Regarding the dual criminality principle in international investigations, see: "United Nations Manual on the Prevention and Control of Computer-Related Crime", 269; *Schjolberg/Hubbard*, "Harmonizing National Legal Approaches on Cybercrime", 2005, page 5.

<sup>&</sup>lt;sup>26</sup> See: Understanding Cybercrime: A Guide for Developing Countries, ITU 2009, Chapter 5.5 as well as the following surveys on national Cybercrime legislation: ITU Survey on Anti-Spam Legislation Worldwide, 2005, page 5; *Mitchison/Wilikens/Breitenbach/Urry/Portesi* – Identity Theft – A discussion paper, page 23 *et seq*; *Schjolberg*, The legal framework - unauthorized access to computer systems - penal legislation in 44 countries, http://www.mosstingrett.no/info/legal.html.

Country	Commercial Code/digital signature	Data Protection/Privacy	Cybercrime
Antigua & Barbuda	The Electronic Transactions Act, 2006 implements the provisions of the UNCITRAL Model law and also makes provisions with respect to the limits of liability of online service providers, and includes provisions for the regulation of certifying authorities.		The Computer Misuse Bill, 2006 deals with various cybercrimes including unlawful access, hacking, cracking, etc. and also sets out procedural powers. The cybercrime related laws need updating and expanding.
	The Evidence (Special Provisions) Act, 2009, No. 5 of 2009 has been enacted and contains some provisions with respect to the admissibility of electronic evidence. Under this law, a person seeking to admit an electronic document as evidence has the burden of proving its authenticity by evidence capable of supporting a finding that the electronic document is that which it is purported to be. The law then sets out the best evidence rule in respect of an electronic document—where there is proof of integrity of the electronic document was recorded or stored; or if an evidentiary presumption established under regulations made under the Act applies.		
Bahamas	Electronic Communications and Transactions Act, 2003 sets out a series of equivalency provisions giving legal recognition to an electronic message, signature, writing and contract on the same basis as such features would be recognised in a paper-based environment. It also allows parties to use electronic devices to form, negotiate and conclude contracts and other legally binding agreements. Exemptions include the disposition of property, testamentary dispositions, negotiable instruments, enduring powers of attorney and court documents. The Act does not prescribe the type or method to be used to generate an electronic contract, signature or method of authenticating the communication so long	The Bahamas Data Protection (Privacy of Personal Information) Act 2003, implements the privacy principles established by the OECD to protect the privacy and transfer of personal data. The Act sets out the principle that information should be obtained by fair and lawful means and used in a manner consistent with that for which it has been collected. It also enables an individual whose personal information is collected and stored to require the persons who collect and use data to abide by standards of confidentiality in respect of such data and to provide individuals with information kept on	In the Bahamas, The Misuse of Computers Act, 2003 creates a series of offences arising out of the unlawful interference with computers and computer systems, very similar to the Antigua and Barbuda Bill.

Country	Commercial Code/digital signature	Data Protection/Privacy	Cybercrime
	as the necessary attributes are met by electronic means. The Act also makes provisions for the duties and the extent of liability of e-commerce service providers and intermediaries.	them upon request. The Act prohibits the transfer of data to jurisdictions with inadequate data protection laws in place except with the data subject's consent.	
		The Act establishes an independent Office of Data Commissioner who has responsibility for enforcement of the data protection laws. While it took some years for the Office of Data Commissioner to be set up, it is now established. <sup>27</sup>	
Barbados	Electronic Transactions Act implemented the provisions of the UNCITRAL Model law and also contains provisions with respect to data protection and the limits of liability of online service providers. The Act made Barbados the third Caribbean country (after Bermuda and the Cayman Islands) to possess digital signature legislation	In Barbados the Bill for the Data Protection Act 2005 has not yet been passed into law.	The Barbados Computer Misuse Act 1 L.R.O. 2005 CAP. 124B <sup>28</sup> creates a number of offences, including those relating to illegal access, child pornography and malicious communications (obscene or threatening communications). The Act also makes provisions for procedural powers relating to investigation and enforcement, including for search and seizure, assisting a police officer, the provision of records of seized data to owners, production of data for criminal proceedings and orders for disclosure of data. The cybercrime related laws need updating and expanding.
Belize	Electronic Transactions Act (Chapter 290:01) (Revised Edition 2003), No. 8 of 2003 deals with the basic equivalency for written contracts, signatures, etc. but does not provide for certification authorities or deal with limits of liability of online service providers. Under the Act, the Attorney-General may make regulations to provide that electronic signatures for specified purposes shall be as reliable as appropriate for those purposes; and to provide that electronic		

 <sup>&</sup>lt;sup>27</sup> Details can be found on its website: <u>http://www.bahamas.gov.bs/dataprotection</u>.
 <sup>28</sup> Available at <u>http://www.commerce.gov.bb/Legislation/Documents/Computer\_Misuse\_Act, 2005-4.pdf</u>.

Country	Commercial Code/digital signature	Data Protection/Privacy	Cybercrime
	signatures for specified purposes shall be created by		
	specified means.		
Dominica	A draft Bill has been prepared and is being reviewed.		
Dominican Republic	Law 126-02 on Electronic Commerce, Digital Documents and Signatures, based on the Law Model of UNCITRAL was approved in September 2002 and together with its complementary documents, is one of the earliest and complete examples of the implementation of UNCITRAL provisions. Following the passage of the law, the Dominican Institute of the Telecommunications, INDOTEL, was in charge of preparing the regulations and complementary norms. Several complementary documents make reference to the approval, complementary norms, reasons, questions and answers, glossary of terms, regulatory agenda and the resolutions.		The Dominican Republic law deals with computer misuse and cybercrime offences. Offences created include illegal access, interception and tapping of data and signals (illegal interception), damaging and altering computer data (data interference), sabotage (system interference), fraudulent devices (misuse of devices), forged documents and signatures (computer related forgery), high technology theft, illegal obtaining of funds, electronic transfer of funds, fraud and blackmail (computer related fraud), offences related to child pornography, offences related to infringements of copyright and corporate
	The EFT system is supported by the Monetary and Financial Law, No.183-02 which came into force in 2002. Article 27 of this Law provides: "Payments and Clearing System. The system for payments and clearance of checks and other means of payment is an exclusive public service provided by Central Bank. The regulatory framework established by the Monetary Board for the organization and operation of the payments and clearing system will have as basic objectives assuring the immediacy and receipt of the payment in good funds, being able to establish different subsystems, using international standards as a reference on the subject. All financial intermediation organizations will be required to participate in this system, and no multilateral netting and settlement systems shall be organized other than the system established in this Article. The Central Bank shall act as supervisor and final settler for the payments and clearing system. The material provision of service		liability. The law also contains provisions relating to procedural powers including on preservation of data, requirements for service providers to disclosure certain traffic data, and powers of the public prosecutor's office dealing with production orders, search and seizure, real time collection of traffic data and interception of content data.

Country	Commercial Code/digital signature	Data Protection/Privacy	Cybercrime
	could be granted to private organizations, in a manner to be determined via regulation adopted by the Monetary Board. Under no circumstances will the Central Bank cover a negative position of a financial intermediation organization, regardless of how transitory it may be. The Monetary Board may establish a collective bond regime or adequate guarantees for the participants. The reserve accounts and other funds deposited by the financial intermediation organizations in the Central Bank, will serve as current accounts for the clearing and payments system, as established by the Monetary Board."		
Grenada	The Bill for Electronic Transactions Act, 2008 aims to implement provisions of the UNCITRAL Model Law. A package of Bills is currently being reviewed for possible introduction into Parliament. The Bill is currently slated for review.		
Guyana	The draft Electronic Transactions Bill, 2010 will provide a commercial code for e-commerce transactions, creating a predictable legal environment for e- commerce and e-government transactions. It will clearly define the rights and obligations of the transacting parties. It will also address the legal aspects of electronic contracts, the use of digital signatures and concerns for authentication and non- repudiation. In order to facilitate the use of electronic transactions in the public sector, the law will contain an omnibus provision through which government departments and statutory boards can accept electronic filings and fees without having to amend their respective Acts.	The draft Electronics Transactions Bill, 2010 includes data protection provisions. Unlike many other jurisdictions, the law will not create the post of Data Commissioner, but the Minister or someone delegated by him will perform the functions of regulating data protection. The data protection provisions will contain a list of general privacy principles which will specify rules for processing personal data, the rights of individuals in relation to the personal data held about them, and information security. The general privacy principles will be applicable to all persons who handle, store or process personal information belonging to another person. The law will also make provisions stipulating the various requirements for the protection of personal data held by pubic	The draft Electronic Transactions Bill creates a number of cybercrime offences, including offences dealing with illegal access to whole or part of a computer, offences related to child pornography, and offences against the commission of acts of terrorism. The law will make provision for procedural powers to be given to the law enforcement authorities to allow for search and seizure warrants, to require relevant persons to assist police in investigations, recordal of and access to seized data, and the making of production orders. The proposed law also creates a number of offences related to the theft, forgery and other dishonest use of a credit card, debit card, bank card, smart card, or the number and data associated with such card, and is intended to build user confidence in e-

Country	Commercial Code/digital signature	Data Protection/Privacy	Cybercrime
		authorities and allow for the development of codes of conduct. The Minister will be able to approve a code of conduct developed by an industry sector and to make the code legally enforceable by order or regulations.	commerce and electronic transfers. The Evidence (Amendment) Bill 2002 is enacted and provides for the admissibility of documents generated by computer as well as other documentary material inclusive of disc, tape, sound track, or other mechanisms
Haiti	NONE	NONE	NONE
Jamaica	The Electronic Transactions Act, 2006 mainly deals with providing legal recognition for the electronic equivalents of paper-based processes. It also makes detailed provisions for personal electronic signatures and the transmission of documents electronically.		The CyberCrime Act of 2009 was passed in December 2009 and creates a number of offences and procedures for prosecuting these offences. This Act was hailed as a tool to aid in the prosecution of e-commerce fraud and Lotto scams which have become rife in Jamaica due to the lack of effective policy. It was also welcomed as a means to prosecute and hopefully prevent various computer crimes. In its passage, mention was made to a lottery scam in Montego Bay involving the theft of personal information by employees from data processors in MoBay free zone. This information was sold to criminals who used it to carry out fraudulent schemes.
			During the debate for the passage of the law, mention was also made of a case in Jamaica where the computer network of a telecommunications company was hacked into and millions of dollars in Jamaican currency of credit stolen. <sup>29</sup>
St. Kitts & Nevis	Model Bill prepared and slated for review		
St. Lucia	The Electronic Transactions Bill, 2007 aims to implement the provisions of the UNCITRAL Model law		

and also makes provisions for the liability of

<sup>&</sup>lt;sup>29</sup> See http://www.jamaica-gleaner.com/gleaner/20091221/lead/lead9.html.

Country	Commercial Code/digital signature	Data Protection/Privacy	Cybercrime
	intermediaries and internet service providers. The Bill is currently slated for review.		
St. Vincent & the Grenadines	In St. Vincent and the Grenadines the Electronic Transactions Act, 2007 <sup>30</sup> was passed in House but it is not yet enacted. The Act is comprehensive and contains the provisions of the UNCITRAL Model. This law, together with a draft Bill for protection of personal information, is now being considered, with plans for redrafting and enactment in 2010. The draft Bill is quite complex and deals with a multiplicity of issues, which may be a factor in its difficulty in enactment in place without large human resources in the area or knowledge of technology law.	The Privacy Act was passed in Saint Vincent and Grenadines in 2003 but is not yet in force. It purports to regulate the collection, use, maintenance, disclosure and disposition of personal information by public authorities and provides rights to certain individuals about whom personal information is maintained. The approach is principles-based, as in the development of the OECD guidelines on the Protection of Privacy. The Act does not apply to the private sector, and gives no protection with respect the collection of personal data outside the ambit of public authorities. Section 15 of the Privacy Act provides that a person can be given access to personal information under any of the enactment, and it is supposed that the Freedom of Information Act is one of those referred to here.	
Suriname	NONE	NONE	
Trinidad & Tobago	The Government of Trinidad and Tobago tabled the Electronic Transactions Bill in 2009. However the Bill lapsed and in early 2010 a review was done of the Bill. The review found several major flaws in the draft 2009 Bill. For example it found that Fastforward, the National ICT strategy for T&T, states the national ICT vision: "Trinidad and Tobago is in a prominent position in the global information society through real and lasting improvements in social, economic and cultural development caused by deployment and usage of information and communication technology."	The Bill for the Data Protection Act, 2010 of Trinidad and Tobago is one of the first in the Caribbean to deal comprehensively with the protection of personal data held by public authorities. Under its provisions, a public authority's collection of personal information is limited to that which is authorised by law, law enforcement and where the information is directly related to an operating programme or activity of the public authority. Personal information is to be collected by a public authority directly from the individual except in	

<sup>&</sup>lt;sup>30</sup> Available at <u>http://www.oas.org/juridico/english/st\_vincent\_electronic\_transactions\_act\_section\_66.doc</u>.

Country	Commercial Code/digital signature	Data Protection/Privacy	Cybercrime
	However, the Electronic Transactions Bill, except for a few clauses, is silent on this issue. There are no positive clauses showing that Government is being an enabler by taking the initiative towards e-governance. The review noted that there are many considerations that are taken into account when drafting an Electronic Transactions Bill for a developing country, that were not addressed. In developed countries, the enactment of an Electronic Transactions Act has tended to be part of a much wider program of overhaul of laws and procedures, for example those relating to electronic evidence, Government's delivery of services electronically etc. In developing countries, all these corollary issues need to be examined and addressed, as the effort relating to laws with respect to electronic transactions tend to be more concentrated on a suite of core laws, as opposed to a larger overarching implementation of policy and directives relating to e-government and e-commerce. The review also noted that the draft clauses provided for in the Bill are incomplete in several areas. In the area of removal of barriers, the review noted that Part 1 of the Bill deals with several provisions that are aimed at removal of these barriers. However several clauses do not achieve this objective – the key one being Clause 7 – which proposes that the Electronic Transactions Act: "does not limit the operation of any written law that expressly authorizes, prohibits or regulates the use of information, data message, a record or a payment be posted or displayed in a specific manner."	certain circumstances such as: the collection of information which is necessary for medical treatment of an individual; where the information is collected for the purpose of determining the suitability for an honour or award including a scholarship; in proceedings before a court or a judicial or quasi-judicial tribunal; when collecting a debt or fine or making a payment; or when collected by law enforcement. The provisions require a public authority to inform a person from whom it collects personal information, as to why it is being collected, the legal authority for collecting it, and the title, business address and business phone number of an official who can answer questions about the collection. Exceptions to this requirement to provide information include in cases of national defence and other law enforcement investigations. The Bill specifies that a public authority can retain personal information it has used for a period of time as is prescribed by the Minister, by order, and a public authority should take steps to ensure that any personal information used to make a decision that would affect the individual, is correct and complete. A public authority is to keep all personal information secure, and safeguard against unauthorised access to and collection, use, alteration, disclosure or disposal thereof. Personal information held by a public authority should be stored and accessed only in Trinidad and Tobago or a jurisdiction that has comparable safeguards	

Country	Commercial Code/digital signature	Data Protection/Privacy	Cybercrime
	<ul> <li>whole purpose of the Policy and Act and is the direct opposite of what has been done in any other country in the world enacting an electronic transactions law. The whole idea is to make the entire regime of laws technology neutral. If there are already exceptions in 4(1), the rationale to include other exceptions is unclear.</li> <li>The review also took issue with the provisions relating to the liability of intermediaries. The entire section was redrafted.</li> <li>A new amended and comprehensive 2010 Bill has been drafted and is now under consideration.</li> </ul>	as provided by the law. The provisions also prohibit the disclosure of personal information by a public authority without the consent of the individual in respect of whom the information relates except in certain circumstances, such as in law enforcement, lawful investigations or statistical purposes. Medical information should not be disclosed by a public authority without the consent of the person to whom such information relates or by order of the Court. Ministries are required to prepare a privacy impact assessment in respect of any new enactment, system, project, programme or activity and set out the consequential	
		requirements on each Ministry thereafter. The provisions give every resident or citizen of Trinidad and Tobago the right to access his/her personal information that is contained in a personal information bank and any other personal information which is in the custody or under the control of a public authority. An individual should be entitled to request the correction of his personal information held by a public authority and which the individual believes to be incorrect. An appeals process to the Data Commissioner (an office to be created under the Act) is set out.	

# 3.2 Delivery of E-Government Services

A key plank in content development, as well as in wider e-commerce adoption, is the leadership shown by government:

"The adoption of e-government practices is a fundamental facet of e-commerce strategies. By becoming "model users" of the internet, governments can at the same time facilitate the achievement of e-commerce strategies and contribute to core development objectives."

Thus concludes the UNCTAD survey of e-commerce policies in 51 countries.<sup>31</sup> Whether specifically to promote e-commerce or simply to achieve the wider development benefits, governments worldwide are implementing e-government services. At least a few – for instance Canada and New Zealand – deliberately deploy their e-government strategy as a means to lead the way in e-commerce. Components of e-government services that can also support e-commerce are prioritised, e.g., introducing secure electronic signatures with public sector and external clients and the general public; and incorporating e-commerce into education, training and awareness raising.

Encouraging the public and businesses to switch to electronic access – including electronic payment – of government services is seen as an effective way to introduce the concept of e-commerce, familiarise people with what is involved, and enable them to see the practical benefits. It can assist the spread of e-commerce not just from the supply perspective, by opening horizons to small businesses, but especially on the demand side with the public and enterprises becoming routinely accustomed to the use of the internet to access and pay for services.

Perhaps particularly relevant in the Caribbean is the potential for regional-level coordination and cooperation in the development of an information society and ICT strategies with a specific emphasis on e-commerce.

For instance, since 2002 and continuing today, the western Baltic countries have been coordinating their information society strategies, including e-commerce and e-government services, in an initiative, supported by UNDP and the Regional Cooperation Council (RCC), called the eSEE Agenda (Electronic South East Europe).<sup>32</sup> The eSEE agenda established a number of benchmarks and targets for all countries, formally signed at ministerial level and occasionally updated, for different elements of the information society agenda. Senior officials meet regularly, information and best practice is exchanged, and informal competition has emerged between them, all of which is acknowledged to have spurred on development. Also useful has been the fact that information society 'champions' in various government departments have, on some occasions, been able to use the ministerial level commitments to gain leverage within inter-ministerial priorities, and have also assisted in ongoing continuity of targets even where governments have changed.

 <sup>&</sup>lt;sup>31</sup> UNCTAD, Electronic Commerce Strategies for Development: The Basic Elements of an Enabling Environment for E-Commerce, 2002, p. 8 (<u>http://r0.unctad.org/ecommerce/event\_docs/geneva\_strategies\_issues.pdf</u>).
 <sup>32</sup> http://www.eseeinitiative.org/.

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Such a formal e-commerce agenda could have a more focused impact on developing e-commerce in the Caribbean.

There are a number of key areas in which e-government has been successfully implemented in developing countries, including in small island states and in the Caribbean (Box 4). Box 5 provides some more detailed information about Anguilla's e-government system.

### Box 4: e-governance – success cases

- Public access to services: E-government can make available to members of the public services of value to their daily lives. For example, the e-Seva service of the state of Andhra Pradesh in India<sup>33</sup> provides citizens with a wide spectrum of services ranging from the payment of utility bills to registration of motor vehicles.
- Improved investment climate: Information relevant to investors, both foreign and local, has been a major focus in many e-government projects. This information includes access to laws and regulations, application requirements, forms also submission of applications online. Anguilla's Commercial Online Registration Network (ACORN)<sup>34</sup> enables instant and secure electronic incorporation and registration of companies. Many telecommunications regulators, including those of Anguilla<sup>35</sup>, Trinidad and Tobago<sup>36</sup> and the ECTEL States<sup>37</sup> have websites with full information on laws and regulations, as well as publication, as required by law, of the issuance of licenses, proposed legislative changes, calls for public consultations etc.
- Improved credit climate: Major hindrances to credit availability in many developing nations are unwieldy, expensive and cumbersome systems relating to land and property registration. Governments can use ICTs to streamline the recording of land and property titles, making the whole process simple and transparent. The governments of Anguilla and the Cayman Islands have fully computerised systems of land and property registration. In addition, all planning permits, when granted, are published online.
- e-Participation: e-participation can promote civic trust by ensuring that citizens' views and interests are better represented in government programs or processes. Several SIDS, including Trinidad and Tobago<sup>38</sup> and Antigua and Barbuda<sup>39</sup>, now have the parliamentary process, including the debating of bills, online. Singapore has an online feedback system.<sup>40</sup>
- Education and Training: Open and distance learning can be made available for both for the public and government officials. The University of the West Indies conducts internationally accredited open and distance learning courses though its Open Campus.<sup>41</sup> Bosnia Herzegovina has the Open Source Distance Learning Web Portal for judges and prosecutors<sup>42</sup>.
- Immigration and Border Control: Cambodia has introduced an e-visa system<sup>43</sup> which automates visa application, approval and payment processes, supporting the tourist industry on which the country heavily relies for hard currency.
- Improved customs clearance: The Customs Automated Services (CASE) is a Caribbean developed system (developed in Jamaica) which is E-commerce ready and heavily used in G2B automated customs processing and payments in Jamaica and Antigua. The system is intended to be transferred to the other OECS countries.
- Tax Reporting and Payment: Peru's National Superintendent of Tax Administration (SUNAT) initiated an online tax payment system credited with significantly increasing the efficiency of their tax administration.<sup>44</sup>
- Court Management & Justice: The Judicial Enforcement Management System is used in Trinidad and Tobago and the OECS States for case management and court administration.<sup>45</sup>

<sup>&</sup>lt;sup>33</sup> <u>http://esevaonline.com/</u>

<sup>&</sup>lt;sup>34</sup> http://www.anguillafsc.com/

<sup>&</sup>lt;sup>35</sup> http://www.pucanguilla.org/

<sup>&</sup>lt;sup>36</sup> http://www.tatt.org.tt/

<sup>&</sup>lt;sup>37</sup> http://www.ectel.int/

<sup>&</sup>lt;sup>38</sup> <u>http://www.ttparliament.org/</u>

<sup>&</sup>lt;sup>39</sup> http://www.ab.gov.ag/gov\_v2/government/lawsandregulations/

<sup>40</sup> http://www.cutwaste.gov.sg/

<sup>&</sup>lt;sup>41</sup> http://www.open.uwi.edu/

<sup>&</sup>lt;sup>42</sup> http://unpan1.un.org/intradoc/grouups/public/documents/other/unpan022060.pdf

<sup>&</sup>lt;sup>43</sup> http://www.mfaic.gov.kh/e-visa/vindex.aspx

<sup>&</sup>lt;sup>44</sup> http://unpan1.un.org/intradoc/groups/public/documents/other/unpan022091.pdf

- Company Registration: Anguilla's Commercial Online Registration Network (ACORN) enables instant and secure electronic incorporation and registration of companies. ACORN also enables all other corporate registration activities permitted under the relevant legislation to be undertaken online. Information on the system, which has fully downloadable forms as well as online company name search and reservation, can be found at the network's website.<sup>46</sup>
- m-Government: As mobile phones now outnumber fixed-line phones and personal computers in many developing countries, m-Government is very relevant. Malta offers services that include acknowledgement of, and status reports on, citizens' complaints; notice of court hearings and exam results; license renewals; and direct payments from the Department of Social Security. Trinidad and Tobago has announced that in June 2010 it will launch its mobile platform for delivery of Government services electronically.
- It is worth noting that Jamaica has some well-developed fully automated online E-Goverment solutions that are well worth careful study. Fiscal Services Limited, a fully owned Gov. of Jamaica IT firm, has a staff complement of nearly 300 programmers, web developers, e-government specialists, system.

A key task in the implementation of e-government will be to identify the actual and potential institutional bottlenecks, which may constrain the implementation of e-government in the CARIFORUM States. Several things are needed for e-government to be implemented successfully: proper planning, consultation with all stakeholders including the members of the public, the private sector and public servants to assess their needs, and the development of a range of requisite skills to implement, manage and maintain e-government. Proper planning requires an understanding of the institutional framework that will support e-government- i.e. the level of technology, skills and administrative provisions within the government as well as the level of technology and skills of the other users i.e. the private sector and public. An infrastructure analysis as well as stakeholder consultations should be used to prepare an assessment of the e-readiness of each of the Member States.

#### Box 5: Anguilla E-Government system

In July 1994 the Technology Unit under the Ministry of Finance was established with the mission to "Develop, implement and manage the most advanced appropriate Information Systems Strategy and Technology to meet the present and future information and technological needs of the Government of Anguilla." Starting with only two members of staff and one small office the unit was responsible for all IT equipment in the Ministry of Finance.

The Unit gradually increased through the years and is now the Department of Information Technology & E-Government Services (DITES), responsible for all Government and its statutory bodies IT needs. Presently the Department has a staff of 22 personnel.

The following table contains a list of the various applications used in Anguilla's E-Government.

Name	Purpose	Department
Smart Stream	HR, Expenditure	Most Departments
(http://www.smartstream-stp.com/)		
SIGTAS (http://www.crcsogema.com/)	Revenue collection	Most Departments
Asycuda	Customs System	Customs
Otrcis (Overseas Territories Regional Criminal Intelligence System)	Immigration Intelligence	Customs/Police/Immigration
KE Vitalware	Registry System	Judicial
Alexandria	Library	Library
CSDRMS	Debt System	Ministry of Finance (MOF)

<sup>&</sup>lt;sup>45</sup> <u>http://www.pcssinc.com/products/jems.htm</u>

<sup>&</sup>lt;sup>46</sup> <u>http://www.anguillafsc.com</u>

KODAK	Dental System	Health Authority of Anguilla (HAA)
QS/1	Pharmacy System	HAA
Great Plains	Payroll System	НАА
IDIS	Passport System	Passport Office
JEMS	Judicial Case	Judicial
	Management	
CUSI	Water Billing System	Water Department
ArcGIS	Geographic info System	Physical Planning
AutoCAD Lite	Building Engineering	Ministry of Infrastructure,
		Communications, Utilities and
		Housing
Quick Books	Accounts Management	DITES/ Most Departments
Track-It	Inventory Management	DITES
BES	BlackBerry Enterprise	DITES
Symantec Enterprise	Antivirus	DITES
Cash Admin	Call Management System	DITES
Symantec Backup Exec	Backup Servers	DITES
HUB Manager	Security System Control	DITES/Jud/IRD/MOF/Tre
InterMapper	Wireless Network	DITES
	Monitoring	
ACORN (Anguilla's Commercial Online	Commercial Online	Financial Services
Registration Network)	Registration Network	Department/Companies registry

The components of e-readiness are changing over time, and institutions should evolve accordingly. As the basic level of readiness and information infrastructure are built, the emphasis shifts to innovation, human resource development, business process transformation, public-private partnerships, legal framework, a holistically supportive environment, bottom up participation, and other soft factors. E-leadership institutions have to evolve to meet these new balances and requirements.

E-government involves the creation of new processes and new relationships between the government and its citizens and businesses. The goals of e-government will not be achieved the simple computerisation of records or giving civil servants computers. What is most important is for governments to understand what methods, processes work best for them and what is not working. What challenges are they facing and how they can overcome these. Relying on technology to be a panacea to all their problems will not produce the success they want. It is only by examining which processes work and which don't that they can figure out the role technology can play in providing solutions. The key is to figure out where the ownership of the electronic government project resides and who is the responsible entity for that project. Technology can help move or facilitate the objectives of e-government, allowing it to be more effective and provide personalised services to citizens.

# 4 ASSESSMENT OF SMES' USE OF AND READINESS FOR E-COMMERCE

# 4.1 Introduction

In order to assess the extent with which SMEs in the CARIFORUM countries use e-commerce, a comprehensive survey was undertaken in 13 countries.<sup>47</sup> The objectives of the survey were:

- To assess the use of computers by CARIFORUM SMEs, as this constitutes the basis for ecommerce
- To analyse the use of internet by SMEs
- To determine to what extent and with what purpose SMEs use their own corporate websites
- To determine how SMEs are currently in e-commerce activities; and
- To identify SMEs' plans and concerns with regard to e-commerce.

For the survey, a questionnaire with 57 questions in six different sections was developed (see Appendix). Questionnaires were distributed to SMEs both in written form, on the internet, and used for structured interviews by enumerators.

In total, 286 SMEs completed the questionnaire. The distribution of the responses to the survey by country of the SME is shown in Figure 11.



### Figure 11: Distribution of responses to survey by country

<sup>&</sup>lt;sup>47</sup> The Bahamas and Haiti were not included in the survey.

The largest number of responses came from Barbados (52), while the smallest number came from St. Vincent (2). On average, each country contributed 23 responses to the survey.

# 4.2 Detailed Survey Findings

# 4.2.1 Section 1: Company Information

The purpose of the first questionnaire section was to identify the main characteristics of surveyed SMEs in term of age, size and sector of activity.

### 4.2.1.1 Age

Out of the 286 responses to this question, the results are depicted in Figure 12. As can be seen from the chart, than a third of all SMEs were in business for more than 15 years, and 36% were in business for five years or less. This means that the majority of SMEs were either recently established or relatively old, while SMEs of between 6 and 15 years of age were relatively less represented in the survey.



### Figure 12: Question 1 - How long has your company been in operation?

# 4.2.1.2 Type of business

Of the 285 SMEs which provided information about their sector of activity, most were in Retail Trade (13%), followed by Manufacturing (7%), Legal Service (6%), and Tourism and Recreation Services (6%). SMEs in the survey fairly evenly represented a vast range of sectors (including 25% in sectors not listed in the questionnaire) which indicates a high degree of representativeness of the survey.



### Figure 13: Question 2 - What is your company's primary type of business?

### 4.2.1.3 Size

The size of SMEs was determined in terms of the number of employees and turnover. With regard to the former, 41% of SMEs had five or fewer employees, and almost three quarters of all SMEs (72%) were small businesses with fewer than 26 employees (Figure 14).



# Figure 14: Question 3 - How many employees were in your company as at March 1st 2010 (including temporary, permanent and casual workers)?

With regard to revenues, 263 SMEs (92% of the sample) provided information. Of those that responded, 40% had an income between USD10,000 and USD100,000, while one-quarter had revenues of less than USD10,000 (Figure 15). Overall, almost two thirds (66%) of all SMEs made less than USD100,000. Thus, the distribution of SMEs with regard to revenues reflects the size distribution in terms of staffing.



Figure 15: Question 4 - How much revenue did your company make in the last financial year?

### 4.2.1.4 Clients and markets

The primary customers for the vast majority of surveyed SMEs (62%) were individuals. About one-third (36%) mainly sell to other businesses, while very few SMEs have government as their primary customers (Figure 16).



### Figure 16: Question 5 - Who are your primary customers?

PROGRAMME TO ENHANCE THE ESTABLISHMENT OF E-COMMERCE REGIMES AND THE ADOPTION OF E-COMMERCE BY SMES IN CARIFORUM (RPTF/ECOM/10/09) The overwhelming majority of SMEs sell their products and services on the domestic market (Figure 17). Very few SMEs sold their products and services within the Caribbean region (5%), while most of those companies that are active on foreign markets conducted business outside the region (15%).



Figure 17: Question 6 - Where are most of your products/services sold?

In a related question, when asked where most of their customers were located (Figure 18), the vast majority of surveyed SMEs indicated that their customers were mainly located within their own country (73%). Following the same trend as the previous question, only few SMEs had customers within the region (6%), while more than three times as much as that amount had customers outside the region (20%).





# 4.2.2 Section 2: Use of Computers

Companies which do not use computers in their operations are unlikely to engage in ecommerce. At the same time, in the CARIFORUM region it cannot be taken for granted that SMEs do use computers. The purpose of this second section in the survey was therefore to assess the extent to which SMEs fulfil the basic requirement of e-commerce readiness. Questions referred to:

- The number of computers in the company, implying that a higher number of computers will facilitate e-commerce;
- The users of computers within the company: if computers are used by all levels of staff this will facilitate the use of e-commerce: management will be capable of understanding the issues in order to formulate e-commerce strategies while operational staff will be ready to implement these strategies;
- The types of use of computers: obviously, e-commerce readiness is positively influenced if computers are used for various purposes within the company rather than, e.g., only for office applications;
- Existence of computer network within the company: again, using a network within the firm is likely to have a positive impact on e-commerce readiness as it means that the technological basis for e-commerce is in place.

### 4.2.2.1 Availability of computers

The good news is that very few SMEs do not have computers: only 8 out of 285 (3%) SMEs reported that they had no computers (Figure 19). Nevertheless, the vast majority of SMEs across the region has ten of fewer computers (68%). Only 11% of SMEs have more than 50% computers, which should be seen in relation with the number of 14% of SMEs which have more than 100 employees.



### Figure 19: Question 1 - How many computers do you have in your company?

When keeping in mind that the vast majority of SMEs are targeting the domestic market it may be surprising to see that 55% of surveyed companies have bought their computers abroad (Figure 20). Around 17% of all SMEs purchased both domestically and abroad.



Figure 20: Question 4 - Where did you purchase your computers?

### 4.2.2.2 Computer users

The majority of SMEs reported that senior management had access to computers (82%), while only about half of all SMEs provided all other staff with access to computers (Figure 21).

Nevertheless, since SMEs were allowed to pick more than one answer, these results must be read in the context of SMEs providing multiple staff types with access to computers. In fact, the average SME provided three out of four staff types with computer access.



Figure 21: Question 2 - Who are the main users of the computers in your company?

### 4.2.2.3 Computer uses

There were 1105 responses from 278 SMEs, which means that the majority of SMEs use their computers for multiple reasons. In fact, it appears that the average SMEs use their computer for at least four (4) types of applications.

The most widely used computer application (Figure 22) was Office Applications (85%), followed by Finance and Accounting applications (75%), Purchase Orders and Inventory (56%) and Payroll (55%). Not surprisingly, the least used applications were Library (21%) and Programming and System Development (28%). Less than half of surveyed SMEs used computers at the point of sale.



### Figure 22: Question 3 - What do you use your computers for?

In sum, therefore, computers are basically used for basic applications.

### 4.2.2.4 Networks installed

In spite of the fact that only 29% of companies have more than 10 computers, 61% of surveyed firms have a computer network (Figure 23). This means that even small companies with few computers typically connect their computers internally.




On further analysis of those SMEs that did not have computer networks, it appeared that there were significant differences among the countries polled. The results of this additional analysis are shown in Figure 24.





According to this analysis, SMEs in Barbados, St. Vincent and the Grenadines, Grenada, and St. Kitts and Nevis appear to be lagging behind in terms of computer networks. Conversely, the Dominican Republic, Dominica and Belize are comparatively well equipped with computer networks.

It should be noted however, that in higher income countries such as Barbados and Trinidad & Tobago, with a more highly educated population, we were able to get a greater mix of respondents. In countries such as Dominica, Grenada, Belize, Suriname and Guyana, the respondents tended to be the businesses already more aware of and implementing ICTs as part of their businesses, and with more highly educated staff. It is thus possible that the above findings are slightly distorted based on selection bias.

## 4.2.3 <u>Section 3: Internet Usage</u>

While the availability of computers in SMEs constitutes the most basic requirement for ecommerce, links between the firm's computers to the world is another essential requirement to engage in e-commerce. Hence, section 3 of the survey dealt with SMEs' use of the internet. In particular, the following topics were addressed:

 To what extent have SMEs access to the internet, and which technology is used? Obviously, the better a company is connected to the internet (i.e. the more computers can access the internet, and the higher the speed of the internet connection) the better, *ceteris paribus*, are the conditions for e-commerce;

- The users of internet within the company: similarly to the corresponding question in the previous section, if the internet is used by all levels of staff this will facilitate the use of ecommerce: management will be capable of understanding the issues in order to formulate e-commerce strategies while operational staff will be ready to implement these strategies;
- What the internet is used for: obviously, e-commerce readiness is positively influenced if the internet used for various purposes within the company rather than, e.g., only for email correspondence. A prudent use of the internet also requires that certain security measures are in place, which is why the survey has included a question on the use of firewalls and anti-virus software;
- Existence of a company intranet: using an intranet is likely to have a positive impact on e-commerce readiness as it means that the company's staff (or at least the users of the intranet) are already well versed with the principles, requirements and procedures which govern e-commerce.

### 4.2.3.1 Availability of internet access

Nearly all SMEs that have computers reported that they also have internet access: only 7% do not have internet access (Figure 25).



#### Figure 25: Question 1 - Do the computers in your company have access to the internet?

SMEs without internet access are located in six of the 13 surveyed CARIFORUM countries: Jamaica, Barbados, Suriname, Trinidad and Tobago, Dominican Republic, and Antigua and Barbuda (Figure 26). It might seem surprising that SMEs in the larger and well developed countries would be the ones where lack of internet access is most prevalent, but as described above, this finding might be explained with the fact that in the other countries there may have been a selection bias in the survey towards more experienced SMEs.



Figure 26: SMEs without internet access by country

Of those SMEs that had internet access, more than three out of four (78%) reported that the majority of their computers had internet access (Figure 27). Consistent with the previous results, only 2% reported that their computers did not have internet access.



Figure 27: Question 2 - What percentage of your computers has internet access?

The most common types of internet connections used by SMEs (Figure 28) were Digital Subscriber Line (DSL; 58%) and wireless services (49%). Around half of all SMEs that had internet access had more than one connection type.

Not surprisingly, given the expense, few SMEs had dedicated internet access, and some (8%) still had dial-up or non-broadband access. Fifteen percent of all SMEs had cable internet access, which is the newest type of internet access within the region.



Figure 28: Question 3 - What types of internet connection do your computers have?

Several countries had SMEs that were still using dial-up access, including Antigua and Barbuda, Belize, Guyana, and Trinidad and Tobago (Figure 29). All of these countries had more than twice the regional average of SMEs that were using dial-up or non-broadband access. By far, the country with the most SMEs using dial-up access is Guyana, with some 42% of all SMEs still using dial-up access.



#### Figure 29: SMEs using dial-up access by country

#### 4.2.3.2 Use of the internet

Nearly all companies use the internet for email services (91%), and over 75% also use the internet for Business Research (Figure 30). On the other hand, only 30% of SMEs use the internet for online sales, and nearly half use the internet for Customer Services and Support. Nearly half also use the internet for news and references, and just over half use the internet for purchasing supplies online. Very few use the internet for Online Government Services, or did not use the internet at all.





Nearly all SMEs with internet access reported that they have either a firewall or antivirus software protecting their computers (Figure 31). 3% of SMEs did not have firewall or antivirus protection for their computers. While this number seems low it shows a grave lack of awareness for security issues and, hence lack of readiness to undertake e-commerce.





### 4.2.3.3 Users of the internet

As expected, nearly all SMEs allow senior management to use the internet, but only around half of all SMEs allow other staff to use the internet (Figure 32). The more than 600 answers that were received from around 250 SMEs suggest that most SMEs give more than one type of staff internet access.



Figure 32: Question 5 - Who is given access to the internet in your company?

About half of all SMEs provide the majority of staff with internet access (Figure 33). On the other hand, about one third of SMEs provide less than 25% of their staff (i.e. mainly top management) with internet access.



Figure 33: Question 6 - What percentage of staff has internet access in your company?

In sum, SMEs in the region appear to be divided in their internet access policies. While one half has an inclusive access policy, as part of which the majority of staff use the internet, in another large group of companies the internet is used exclusively by management. In this context, it should be noted that restricting access to the internet to management levels may have detrimental effects on the capacity of companies to effectively implement e-commerce activities.

### 4.2.3.4 Use of intranets

The majority of SMEs within the region did not have intranets (Figure 34). Over 70% of SMEs reported that they did not have an intranet, while less than one-third of all SMEs reported that they did.





Out of the 81 SMEs which have an intranet, more than two thirds use it for collaboration. Just over half of the SMEs use their intranet for human resource management and sales and marketing information. Organised external access to internet sites and teleconferencing are relatively little used by SMEs with intranet. In sum, as with the other responses, most SMEs do not tend to use the more sophisticated offerings of intranets.



Figure 35: Question 9 - If your company has an Intranet, what is it used for?

## 4.2.4 Section 4: Corporate Websites

The presence of a corporate website usually is equated with the understanding that companies are already engaged in e-commerce. Nevertheless, true e-commerce means that the website as actually used for commercial transaction, rather than a (potentially even static) presentation of the company. Therefore, this section in the survey addressed various

questions relating to the use of corporate websites by Caribbean SMEs. In particular, the questionnaire investigated:

- The basic characteristics of SME websites, i.e. whether or not they have a website (and how many), when it was first established, and where it is hosted;
- The reasons why SMEs established and run websites;
- The role of the website in the SME's marketing mix;
- The perceived impact of the website on the operations and performance of the company; and
- Any perceived concerns by SMEs related to doing business through the website over the internet.

### 4.2.4.1 Use of corporate websites by SMEs

The use of corporate websites by CARIFORUM SMEs is still rather limited: More than one third of all SMEs within the region had no website (37%), while nearly half (45%) had only one (Figure 36). Only nine percent of SMEs are very active users of websites, having three or more.



Figure 36: Question 1 - How many websites does your company have?

Of those SMEs that had no website, further analysis revealed an uneven distribution among the individual countries (Figure 37). More than half of all SMEs in Barbados and Suriname have no websites, and these two countries are the only ones where the share of SMEs without website is above the regional average of 37%. Conversely, SMEs in the Dominican Republic and Grenada are the most connected ones – more than 80% of SMEs in these to countries have at least one website.





When looking at the heavy users of websites, i.e. those SMEs that have three or more websites, a breakdown by country reveals that such SMEs currently exist in nine of the surveyed countries (Figure 38). Interestingly, Antigua and Barbuda had the highest share of SMEs with three or more websites (22%), followed by Jamaica with 9% and Guyana with 8%.



#### Figure 38: SMEs with 3 or more corporate websites, by country

With regard to the age of websites, just over half of all SME websites (53%) were set up over five years ago, prior to or during the year 2005 (Figure 39). The other half of SME websites are relatively new, having been set up between 2006 and 2008 (34%) or between 2009 and 2010 (13%). This means that about half of the SMEs in the region have relatively little experience with websites and e-commerce.



### Figure 39: Question 5 - What year was your website set up?

Interestingly, only 30% of all surveyed SMEs within the region were not using websites with domain names that were registered with their local domain name registry (country code Top Level Domain or ccTLD), as shown in Figure 40. The other SMEs within the region were using generic Top Level Domains (gTLDs) like .com, .net, .biz, or .info, for their primary websites. This has implications for regional branding, as companies with gTLDs cannot be instantly identified as being located in the Caribbean.

## Figure 40: Question 2 - Do you have any website registered through your local top level domain?



There were apparent differences among the countries relative to the use of local ccTLDs for their websites (Figure 41). In Grenada, more than half (52%) of all SMEs were using the local ccTLD (.GD). In both Belize and Antigua and Barbuda, some 33% of SMEs were using their local ccTLDs for their websites. Conversely, SMEs in Barbados, Guyana and Jamaica are most reluctant to use their country code top level domains.



#### Figure 41: Use of country code top level domains by country

The preferred hosting location for SME websites within the region was balanced between local hosting and offshore hosting (Figure 42). However, it might be that this information is not quite accurate as it was later revealed that many persons hosted with local providers who themselves were hosting outside of the country. There is no way to tell whether persons knew where their websites were actually being hosted.





When asked about the reasons for not hosting their websites locally (Figure 43), the main reasons given was the cost of dedicated internet services required for hosting within the region. Slow speed and security concerns were also reasons given by more than one third of all SMEs with websites.

Few Internet Service Providers (ISPs) and e-commerce Service Providers (ESPs) were also important reasons given for not hosting locally, although only around 25% of SMEs listed these latter factors.

## Figure 43: Question 7 - If your website is hosted outside of your country, what is the reason for doing so?



### 4.2.4.2 Purpose of SME websites

SMEs pursue various objectives with their websites (Figure 44). With nearly 1,000 responses to this question out of 175 SMEs that had websites, on average SMEs had more than five main reasons for setting up a website.

The most common reason is to provide General Information about the company (94%). Marketing and Advertising products and services, Enhancing company image, improving customer service, extending geographic reach and retaining customers were also strong reasons for setting up websites, with about two-thirds or more SMEs listing these as their main reasons. About half of all SMEs also set up their websites to keep up with competitors and to enable direct selling of their products and services online. Especially the last finding shows that SMEs are still not making use of direct e-commerce.



Figure 44: Question 3 - What were the main reasons for setting up your website?

### 4.2.4.3 Role of website in the marketing mix

The website can be considered as one tool in the marketing mix of an enterprise. As such, it has to fulfil the requirements of other marketing instruments in terms of accuracy of

information provided, being up-to-date, etc. Furthermore, the website itself should be promoted, and its use by (potential) clients must be monitored.

As the survey has shown, many SMEs hardly consider their website as an integrated part of their marketing mix.

Approximately 80% of surveyed SMEs promote their website at all (Figure 45). Among the promotional instruments used, listings in search engines were the main method (used by 49% of SMEs), with targeted emails, traditional media (newspapers, TV, radio), and advertising banners also listed as important medium for website promotions.

Surprisingly, a high number of SMEs (22%) did not promote their websites in any way, and even fewer SMEs (9%) use online advantages to help drive visitors to their websites.



Figure 45: Question 8 - How do you promote your web site?

SMEs mainly appear to see their website as a rather static instrument (Figure 46). Very Few SMEs place a high priority on delivery of updated and new information: these update their website daily (5%), weekly (9%), or at least monthly (5%).

The vast majority (81%) do not have a regular schedule of website maintenance and updates, and accordingly update their website only "when needed". This means that websites are not actively used by SMEs as an instrument to engage in e-commerce. Rather, they are seen as an extended version of a listing in a business directory.





This finding of a rudimentary use of websites is further corroborated by findings on the monitoring of website users: only 41% of all surveyed SMEs that have websites track the visitors to their websites (Figure 47).



Figure 47: Question 10 - Do you track the number of visitors to your website?

For those SMEs that do track visitors to their websites, information about the number of visitors is available (Figure 48). This shows that most websites are not frequently visited: more than 80% of all websites are visited by less than 1,000 visitors per month, and only 7% are visited by more than 5,000 visitors. What is more, one third of the websites is hardly used at all, with less than 100 visitors per month.

These disappointing results might be a consequence of the static nature of SMEs' websites as identified above – if websites are not regularly and frequently updated, users have no incentive to visit them and are unlikely to revisit a website regularly.



Figure 48: Question 11 - On average, how many visitors do you receive on your website per month?

### 4.2.4.4 Perceived impact of websites on company performance

Given the limited role that corporate websites play for many SMEs (as evidenced by the responses analysed above), when asked what percentage of their overall revenue comes from e-commerce, nearly half of all SMEs reported that they received no revenue from e-commerce (Figure 49). Another third of surveyed SMEs received up to 25% of their total revenues from e-commerce, while less than 25% of SMEs receive more than 25% of their revenues from e-commerce activities. Finally, 6% of surveyed SMEs almost entirely rely on e-commerce, i.e. more than 75% of their revenues are generated by e-commerce.



Figure 49: Question 4 - What percentage of your total revenue comes from e-commerce?

Somewhat surprisingly, given the above, three quarters (71%) of all SMEs with websites believe that their website presence resulted in an increase in revenue in one form or the other (Figure 50).

Figure 50: Question 12 - Do you think that your website has increased your company's revenue?



Of the companies that reported an increase in revenues resulting from the website 32% stated that the increase was small, less than 10%. Almost half of all SMEs reported that the increase in revenue from their websites was in the range of 11-50% increase. Only a small number of website owners (7%) claimed that their website increased their overall revenue by more than 100%.

Thus, the role of websites for generating revenues in most SMEs is not considered negligible but is also not considered a "game changer."



Figure 51: Question 13 - If your revenue has increased, what percentage does this increase represent?

Furthermore, having a website seems to change the geographic distribution of revenue sources, as over half of all SMEs reported that they received more revenue from international business (Figure 52).

What was rather surprising, though, is that nearly half of the SMEs also reported that their websites resulted in increased revenues from local clients. Only about one third reported revenue increases due to more regional commerce.



Figure 52: Question 14 - How has your website changed the geographical sources of your revenue?

### 4.2.4.5 Concerns related to internet business

In spite of the use of the internet as a business tool, about half of all SMEs reported that they had concerns about doing business via the internet (Figure 53).





When asked about the nature of their concerns about doing business via the internet, most SMEs gave a variety of reasons for their concerns (Figure 54). The most important concerns for over half of all SMEs was website security, followed closely by reliable payment systems.

Website expenses were listed as a major concern by nearly one third of all respondents, while one quarter revealed that their products and/or services were not suited for internet selling. Other important concerns listed were shipping difficulties, unsuitable business systems, and limited priority in doing business via the internet.

Issues within the company, such as lack of capacity of management or employees, resistance to change or other priorities were cited only by minorities of companies (14% and less). On average, each surveyed firm had 2.7 different concerns about doing business on the internet.



Figure 54: Question 16 - What are your main concerns about doing business on the internet?

## 4.2.5 Section 5: E-Commerce Activity

In a step further, the survey sought to identify to what extent e-commerce is seen as a strategic activities by SMEs. For this purpose, questions were asked both regarding explicit e-commerce strategies and the actual experience with e-commerce.

### 4.2.5.1 E-commerce strategies

E-commerce in many SMEs does not appear to be guided by any strategy (Figure 55). Only about one quarter of all SMEs had implemented an e-commerce strategy, and another 10% had developed one. On the other hand, more than one third of all SMEs responded that they had plans to develop a strategy while 28% said they had no plans to develop one.



Figure 55: Question 1 - What statement best describes your company's Electronic Commerce strategy?

The number of 28% of SMEs with no plans to develop an e-commerce strategy should be seen in relation to the 37% of enterprises that have no website. The match between these two groups is fairly high, which means that more than one third of the companies have no intention to engage in e-commerce. Given the fact that the survey respondents – with the exception of Barbados and Trinidad & Tobago – were likely to be biased in favour of e-commerce savvy SMEs, it can be inferred that the actual share of SMEs without a current interest in e-commerce is even higher.

### 4.2.5.2 E-commerce experience

The duality of SMEs' use of e-commerce can also be seen in their use of the internet for purchasing and selling goods and services. SMEs within the region often used the internet to purchase items. In 2009, nearly two-thirds of all SMEs placed orders directly online for goods and services (Figure 56).



## Figure 56: Question 2 - Did your business place orders for goods and services via the internet during 2009?<sup>48</sup>

<sup>&</sup>lt;sup>48</sup> Including via Web sites, specialised internet marketplaces, extranets, EDI over the internet, internet–enabled mobile phones but excluding orders submitted via conventional e-mail.

However, companies were much less active when it comes to sale of their products: Less than half of them actually sold goods and services via the internet in 2009 (Figure 57).





However, e-commerce should not be restricted to selling through a corporate website. In this regard, the responses to the survey revealed that around two thirds of all SMEs received one or more benefits from internet selling, even though many who responded did not have a website (Figure 58).

In personal discussions with SMEs found it was confirmed that many were using targeted emails to market and promote their goods and services and were actually taking orders via emails. This basic form of e-commerce has often been overlooked, but is clearly important to many smaller businesses who believe that they cannot afford a website presence.

## Figure 58: Question 4 - Which of the following benefits, if any, did your business realise through internet selling during 2009?



<sup>&</sup>lt;sup>49</sup> Including via web sites, specialised internet marketplaces, extranets, EDI over the internet, internet–enabled mobile phones but excluding orders submitted via conventional e-mail; also including orders received on behalf of other organisations and others received by other organisations on behalf of your business.

## 4.2.6 Section 6: E-Commerce Issues

Finally, the survey also aimed at identifying issues which SMEs thought as barriers to e-commerce.

With regard to their own experience with inhibiting factors, most SMEs (28%) reported that their products or services were not suitable for e-commerce (Figure 59). In a similar vein, 23% were of the opinion that there was limited demand for their products or services on the internet, and 22% stated that they did not engage in e-commerce because they wanted to maintain their traditional business model.

The most important factor not lying within the company itself was ranked number four: security concerns (cited by 20% of surveyed SMEs). Other factors which emanate from the business environment were privacy concerns (12%) and uncertainty of the legal framework for e-commerce (12%). Nevertheless, factors within the firm were considered to be by far more limiting.

On average, SMEs gave approx. two reasons that prevented them from internet selling in 2009, and only 17% reported that there were no limitations to e-commerce in 2009.





Another question in the survey referred not to the inhibiting factors for e-commerce at the firm level but at the national level. When asked to name the factors that were affecting the development of e-commerce within their country, almost one half of all SMEs pointed out that both lack of trust and familiarity with e-commerce were major factors (Figure 60). The third major factor stated concerned the costs of implementing e-commerce solutions. Other factors played comparatively minor roles.

Only about 8% of all SMEs reported that there were no barriers to the development and growth of e-commerce in their country.



Figure 60: Question 2 - What are the factors affecting the development/growth of electronic commerce in your country?

SMEs named several issues (on average: 2.8) that affect the trust and confidence in doing ecommerce within their country (Figure 61). More than half felt that there were too many risks involved in e-commerce, and nearly half listed both payment and infrastructure security as major issues. The most important finding arising from this question is that improvements in e-commerce technical and legal infrastructure will be required to overcome current constraints.





When it comes to the role of government as a facilitator of e-commerce, by far, most SMEs felt that the government needs to play a major role in public awareness programmes on e-commerce. More than half also felt that the government needs to pass more laws to protect

personal data and local consumers when doing business online. Trade facilitation and certification issues are also considered as important by more than one third of surveyed SMEs. Only 8% of SMEs believe that government has no role to play in e-commerce within their country.



# Figure 62: Question 4 - What do you see as the role of the Government playing in promoting trust and confidence in electronic commerce?

Although SMEs see a strong proactive role for government in the facilitation of e-commerce, most SMEs believe that taxes are harmful to e-commerce (Figure 63). Half of all SMEs believe that any tax in general, import duties in particular, would be harmful to the viability of e-commerce in their country. Only 12% of SMEs believe that taxes in general would not be harmful to e-commerce.

## Figure 63: Question 5 - In your opinion, what tax would be most harmful to the viability of electronic commerce in your country?



Finally, when asked about the private sector's role in promoting e-commerce, most SMEs (56%) do not think that the private sector is not doing a good job. Only a minority of SMEs (18%) believe that the private sector is doing a good job of promoting e-commerce.

## Figure 64: Question 6 - Do you think that the local private sector is doing a good job at promoting electronic commerce?



## 4.3 Summary of Survey Findings

In sum, CARIFORUM SMEs fall into two different categories concerning their use of ecommerce. On the one hand, there is a small minority of companies which actively engage in e-commerce and whose business model depends on e-commerce. These companies have found ways to succeed with e-commerce despite the regulatory and infrastructural bottlenecks which exist in the region.

On the other hand, the majority of SMEs appear to have a limited understanding of ecommerce, have concerns about return on investments, security, data privacy or other matters, or do not see the added value of e-commerce for their business. Firms within this second group engage in "e-commerce" only in very limited ways – e.g. by having a static corporate website, by placing orders via the internet, using email to liaise with clients, etc.

Box 6 presents the findings of a similar survey undertaken in Sri Lanka. It seems worthwhile to highlight the following results in comparison to the CARIFORUM survey:

- As in CARIFORUM, computers were underutilized in Sri Lanka, mainly for ad-hoc purchases and records keeping, showing a lack of awareness for e-commerce;
- Inadequate infrastructure and cost considerations were considered as main impediments against engaging in e-commerce;
- As in CARIFORUM, barriers to e-commerce were multidimensional, ranging from infrastructure, social, political and legal/regulatory issues to lack of capacity within SMEs.

### Box 6: SME experience with e-commerce in Sri Lanka

In Sri Lanka, a survey of SMEs revealed that a majority (88%) of respondents ranked lack of awareness as the highest barrier, and this in spite of the fact that the majority of owner/managers described themselves as computer literate and were professionally qualified or graduates. The survey revealed a lack of knowledge of available technologies or suitability for use in increasing efficiency.

The survey participants cited issues such as cost of the internet, equipment, and e-commerce set up as major barriers, along with inadequate telecommunications infrastructure. Unstable economy, political uncertainty, lack of time, and access to expert help, were reported by 70% of respondents. Top internal barriers to e-commerce were given as staff lack required skills, security concerns with payments over the internet or e-

commerce cannot give a financial gain.

The major external barriers were:

- Lack of popularity for online marketing and sales;
- Infrastructure barriers, including low internet penetration, and inadequate quality and speed of lines;
- Unstable economic climate in Sri Lanka, as evidenced by changing regulations with each government change
- Social barriers, including lack of information on e-commerce, and unavailability of reliable expert help
- Legal and regulatory barriers, including limited support for SMEs from government and industry associations and an inadequate legal framework for business using e-commerce

Consequently, support interventions proposed for SMEs to use or extend use of e-commerce were:

- Internal support: awareness and education; guidance in overcoming risks associated with implementation; guidelines for appropriate hardware and software; advice and direction for ICT and e-commerce;
- External Support: improve national infrastructure; provide financial assistance; provide tax incentives; improve ICT diffusion; government & industry sector to take leadership/promotion role; improve collaboration among SMEs; improve low bank account and credit card penetration; enforce suitable software standards

Source: Kapurubandara & Lawson University of Western Sydney, Australia.

As a complement to these findings, Box 7 summarises the findings of a recent survey on the use of mobile services in e-commerce among SMEs in ECTEL countries. Again, the findings are comparable with those of the survey undertaken for this study.

#### Box 7: The Use of Mobile Services by Regional SMEs

A study by ECTEL into the use of ICTs by SMEs in ECTEL states highlights the following as far as their use of mobile technologies are concerned:

- Fixed line number portability was seen as more important than mobile number portability: 87% of SMEs viewed fixed number portability as very important versus 53% for mobile number portability.
- Mobile phone service was not necessarily seen as a substitute of fixed line service by SMEs:
  - Most businesses had both fixed and mobile service.
  - 80% of businesses indicated that it was very unlikely that they would terminate the fixed line service within a year.
  - Most businesses used mobile phone service because they had a mobile workforce, though 12% used it because they thought it was cheaper than fixed service.
- Smaller businesses are not taking advantage of SMS text messaging: 62% of larger SMEs (businesses with more than 50 employees) use SMS, mainly as an alternative to calling, compared to only 38% of businesses with ten or less employees.
- SMEs were generally satisfied with basic ICTs:
  - More than 60% of respondents were satisfied with fixed, mobile and Internet service.
  - Smaller SMEs were slightly less satisfied than larger SMEs, especially with mobile and Internet services.
  - Main complaints were that the rates for voice services were too high and that broadband speeds were too slow.

Source: ECTEL, The Use of Information and Communication Technology by Small and Medium Enterprises in the ECTEL Member States; available from: <u>http://www.ectel.int/pdf/currentpublications/survey/SME-Survey-Report-Oct-2009.pdf</u>

The findings of the survey are largely in line with the analyses of the technical and regulatory infrastructure undertaken in the previous chapters. The key policy lesson to be drawn is that any CARIFORUM e-commerce strategy will need to address multiple shortcomings simultaneously.

## 5 E-COMMERCE SECTOR POLICIES: INTERNATIONAL AND REGIONAL BEST PRACTICES

### 5.1 Issues and Experience at the Regional Level

A significant body of international experience in relation to encouraging trans-national ecommerce has been developed that might be relevant to the Caribbean.

In terms of obstacles to in e-commerce trade across borders, which again might be relevant in the context of the Caribbean, the European Commission has recently produced a comprehensive analysis and survey<sup>50</sup> The conclusions are interesting:

"Some of the barriers to cross-border online trade relate to language, demographics, individual preferences, technical specifications or standards, internet penetration or the efficiency of the postal or payment system. ... Other problems are the inability of consumers to access commercial offers in another Member State because of mechanisms that prevent them from placing orders. ... Consumers also lack information on cross-border offers because it is difficult to make crossborder comparisons and because cross-border advertising is relatively uncommon." (p. 2)

Problems affecting consumers are mirrored by those affecting businesses. Supply-side barriers and constraints were found to be equally important.

"The internet has created heightened expectations on the part of consumers regarding the availability of goods and services, which are not always met by businesses. ... In addition, traders may be at present unwilling or unable to expand to other EU markets in the face of a number of practical and economic obstacles, some of which have regulatory underpinnings. Regulatory barriers result in significant compliance costs for businesses, which considerably diminish the appeal or feasibility of cross-border expansion." (p.3)

Consumer protection issues emerging in e-commerce trade within the EU, APEC, between Australia and New Zealand, between the EU and US, and in several other trading groups are further analysed in a recent OECD document. The document also outlines efforts of international agencies such as UNCITRAL, WTO and UNCTAD.<sup>51</sup>

Developing an internal e-commerce market in the Caribbean will require attention to these and other areas.

At the regional level, CARICOM's Information and Communication Technology for Development (ICT4D) is a sub-programme in the Office of the Deputy Secretary General the CARICOM Secretariat. This programme aims to advance the development of the people of the Caribbean Community by using ICT as a catalyst for the transformation of the Community into a knowledge-based society.<sup>52</sup>

A Draft Regional ICT Strategy (Regional Digital Development Strategy - RDDS) has been

<sup>&</sup>lt;sup>50</sup> Report on cross-border e-commerce in the EU: Commission Staff Working Document, Commission of the European Communities Brussels, 5.3.2009 SEC(2009) 283 final C <u>http://ec.europa.eu/enterprise/newsroom/cf/</u> document.cfm?action=display&doc\_id=2277&userservice\_id=1&request.id=0

 <sup>&</sup>lt;sup>51</sup> Empowering Communities: Strengthening Consumer Protection in the Internet Economy. Background Report to an OECD Conference held on 08-10 December 2009. <u>http://www.oecd.org/dataoecd/44/13/44047583.pdf</u>.
 <sup>52</sup> Details of ICT4D's many programmes and projects can be found at:

http://www.caricomict4d.org/projects-and-programmes-left-side-menu-228.html.

developed. It outlines the level of ICT development in the region and identifies existing gaps. This draft Strategy, like the EU Digital Agenda (see below), covers areas related to legal and regulatory frameworks, as well as human resource development, educational curricula, Internet Governance and E-Government Services.

Three of the Sub-Committees of the Regional Information and Communication Technology (ICT) Steering Committee will shortly begin to formulate a Draft Implementation Plan. Issues to be considered include access, connectivity and internet governance; business, trade, culture and disaster management; and capacity building.

At the national level, the following sub-sections outline the comprehensive approaches taken and implemented in the Bahamas and Anguilla, and also outline the policy approach taken in Jamaica, which is not yet fully articulated or implemented.

Table 6 presents a summary of additional CARIFORUM States' e-commerce policies and strategies, to the extent that they have been formulated already. Other CARIFORUM countries have developed e-government or ICT strategies but these have no focus on e-commerce.

State	Details
Antigua & Barbuda	Information and Communication Technologies (ICTs) Draft Policy: This is a blue print for the economic transformation of Antigua and Barbuda to a knowledge-based society. In its implementation, this policy will provide the requisite legal and regulatory framework as well as financial and social incentives, which will ensure that the people of Antigua and Barbuda are active participants in the Global Village and reap the full rewards of globalisation. Issues regarding e-Commerce are addressed in this ICT policy.
Bahamas	Policy statement on electronic commerce and the Bahamian digital agenda (January 2003): The document details an action plan and proposes institutional arrangements in respect of e-business, the telecommunications infrastructure, legal, financial, content and human resource development issues, and e-government.
Grenada	Information and Communication Technology - A Strategy and Action Plan for Grenada 2001-2005: ICT offer a novel and effective tool to help advance sustainable development in Grenada. ICT is a new significant factor that can propel performance and growth of the Grenada economy. This Strategy and Action Plan represents Grenada's approach to capturing the potentials of these technologies and to utilizing them for sustainable development and the fight against poverty. To meet the needs of developing e-commerce (business to business- B2B) capacity the GOG commits to adopt electronic commerce tools to facilitate business communities or vertical market structures, and develop domestic platforms to optimise international business participation
Guyana	ICT 4D Guyana national strategy. Final draft (April 2006): Guyana's National Information and Communication Technology (ICT) Strategy is a plan to facilitate and ensure the dramatic increase of our social and economic wealth at all levels: individual, organisational and national. The Strategy is geared to leverage and enhance Guyana's human resources, innovation, education, infrastructure and information technology to accelerate economic and social development. This strategy speaks to the development and use of e-commerce through developing e-legislation and promoting and implementing e-malls.
Trinidad & Tobago	Fast Forward - Trinidad and Tobago's National Information and Communication Technology Strategy: In recognition of business opportunities opened up by ICT, the economic strategy focuses on promoting and accelerating the integration of ICT applications in small business. Emphasis is placed in three areas: the acceleration of e-marketplace transformation, e- marketplace growth, and e-business talent pool expansion. Acceleration of e-marketplace transformation explores necessary pre-requisites to establishing an e-marketplace enabling environment, such as an increase in competition in telecommunications, greater awareness of ICT

Table 6: Summary of CARIFORUM States' e-commerce policies/ strategies

among the public, a fiscal incentive programme, and enabling legislation. E-marketplace growth examines various initiatives to help expand and sustain Trinidad and Tobago's e-commerce and ebusiness, including an emphasis on consumer protection and on government to business interaction; and further develop the ICT sector, such as through ICT integration into industry and the development of hub and cluster strategies. Expansion of the e-business talent pool is achieved through skill development programmes that focus on e-business at all levels and are widely accessible in local communities and training institutions

Sources: http://www.eclacpos.org/ict/; http://www.comminit.com

### 5.1.1 Bahamas

In 2003, Bahamas issued a Policy Statement on Electronic Commerce and the Bahamian Digital Agenda. This policy statement articulates the Government's vision for positioning The Bahamas to capitalise on the opportunities presented by the global economy, maintain its status as a leading international business centre and remain competitive. The policy states that the Government is fully committed to ensuring that The Bahamas keeps abreast of, conforms to and embraces developments in information technology necessary to achieve these objectives.

The policy notes that "In advancing its e-commerce strategy the Government will continue its collaboration with the private sector, the community and its international counterparts to position and promote The Bahamas as the premier e-commerce business centre of choice."

The Government readily accepts that the private sector should take the leading role, and seeks to facilitate private sector initiatives through the removal of those restrictions that may impede e-commerce. This will, of course, be with due regard to the unique qualities of the internet and the need to facilitate e-commerce on a global basis.

The Bahamas e-commerce strategy was guided by the following policy issues:

- the principle of universal access that ensures the availability of internet access to all Bahamians at affordable rates;
- a universal service policy that guarantees internet access free of charge to all public and church operated schools, public libraries, the College of The Bahamas, The Bahamas Technical and Vocational Institute, The Bahamas Hotel Training College, the Eugene Dupuch Law School, all public hospitals, clinics, senior citizens' homes and orphanages;
- the creation of an internationally compatible legal and regulatory framework that accommodates rules for commercial transactions;
- a conducive system for the protection of intellectual property rights in cyberspace;
- security, interoperability and interconnection of information systems;
- issues relevant to privacy, such as protection for personal information and confidentiality of consumer related matters; and
- the development of technologically competent human resource capabilities.

The Government promotes e-commerce both as part of the new package of financial services products to be offered in the offshore sector, and also as a means of stimulating innovation and on-line commercial activity within the domestic market. The strategy encompasses the following components:

### **Establishment of the E-Business Development Office**

To facilitate the development of e-commerce and the strategy for a digital economy the Government has institutionalised an E-business Development Office within the Ministry of Finance (Table 7). The Office was established with responsibility for mapping The Bahamas' Digital Agenda.

Body	Function		
Advisory Group (appointed under the Electronic Communications and Transactions Act)	To provide input to the Minister on ICT developments and related initiatives, both domestically and internationally.		
Inter-agency Planning Group	<ul> <li>To determine the respective responsibilities of the agencies represented for meeting e-commerce goals.</li> <li>To develop implementation plans, complete with target dates and the necessary structures, and resources.</li> </ul>		

Table 7: E-Business Development Office Str	ucture
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#### **Telecommunications Infrastructure**

The Government of Bahamas recognised that telecommunications infrastructure is the foundation for e-commerce and is its key enabler. The Government is committed to a full and timely opening-up of the telecommunications markets, in conformity with the Telecommunications Sector Policy and international agreements.

### **Human Resource Development**

The policy for education and training purports to incorporate initiatives and strategies which will help to educate, train and re-train Bahamians to enable their participation in and enjoyment of the full benefits, services and capabilities that e-commerce and a digital economy will make available. To this end, the Government has committed to the following specific initiatives:

- the integration of ICT within the public school instructional system;
- further enhancement of public accessibility to the digital world by providing access to the computerised labs in the schools in a safe and secure environment after regular school hours;
- the computerisation of the public libraries, and allowing public access to the internet via these computers to provide additional sites for the public to connect to the internet;
- the delivery of distance learning for persons at work or home from any location in The Bahamas; and
- the positioning of respective information technology curriculum in public institutions of learning to address the country's requirements for participating competitively in the ebusiness global economy.

### Legal Issues

To ensure that the necessary legal and regulatory framework is in place, the Government tabled passed 3 key e-commerce related laws:

- Electronic Communications and Transactions Act, 2003
- Data Protection (Privacy of Personal Information) Act 2003
- The Misuse of Computers Act, 2003

The aim of these laws is to build trust in, and provide certainty and predictability for online transactions. The Government also upgraded legislation to deal with the protection of intellectual property rights over the internet and the provision of alternative means of dispute resolution, including through means of on-line settlement.

### E-Government

The Government of Bahamas has pursued an aggressive e-Government plan, both in terms of the infrastructure that will connect all ministries and departments in government in an intranet environment, inclusive of locations in the Family Islands, and in delivery of Government services.

### 5.1.2 <u>Anguilla</u>

Anguilla is presented here as an example in the region where both the telecommunications policy and e-commerce policies were effectively formulated and implemented within a short time frame. Both these policies are very comprehensive and comparable with best international practices. The use of ICT and e-commerce is high both amongst the general public and businesses, and a very high proportion of Government services are delivered electronically.

The pressures for telecommunications liberalisation and the development of e-commerce in Anguilla also came from the private sector. As Anguilla was free from income tax and corporate tax, Government and the business community thought that it would be an attractive location for companies engaged in e-commerce. Moreover, there were residents in Anguilla whose social and business networks include persons in the fields of e-commerce, encryption and other sophisticated ICT services. In fact encryption conferences were held in Anguilla. However, this was at the height of the dot com boom, and while there was initial interest and some investment, investors were discouraged by the high prices being charged for connectivity to the internet by C&W and the unreliability of the electricity supply. They also found the monopoly provision of internet service unacceptable as they saw redundancy as essential for the conduct of their business.

The Government viewed a competitive telecommunications sector as beneficial to its fledgling financial services industry. It also saw widespread adoption of ICT as providing Anguillians with a competitive advantage.

In preparing its manifesto, developing its budget for 2000, and in discussions with Her Majesty's Government, the Government of Anguilla recognised that governments worldwide are making efforts to facilitate the development of e-commerce in their own economies. The Government's telecommunication policy, adopted in August 2001,<sup>53</sup> sets out its objectives to the development of telecommunications and ICT in a globally competitively manner. The Government began negotiations with C&W towards the liberalisation of the telecommunications sector in 2001. Negotiations were completed in 2003 with the result

<sup>&</sup>lt;sup>53</sup> Peter A. Stern and Tira Greene, A New Telecommunications Regulatory Framework for Anguilla.

that C&W accepted that internet service could be provided by third parties using their own means of international access and the telecommunications sector would be liberalised.

A Task Force for Development of E-Commerce was established in March 2000 by the Executive Council of the Government of Anguilla to determine and publish an appropriate e-commerce Anguilla Policy statement and to prepare and implement an e-commerce development strategy to put into place the policies, laws, regulations and organisational arrangements required to facilitate, encourage, guide and monitor the development of the e-commerce sector. The Task Force delivered its final report, the Policy Framework for Anguilla ("the Anguilla Policy"), in July 2003.

With respect to the legal framework in Anguilla the Task Force found that in many nations, the development of e-commerce legislation has focused on electronic transactions and, in particular, electronic signatures. However, due to its historical isolation from the trading mainstream, Anguilla had a relatively undeveloped body of commercial law as a whole. Accordingly, for Anguilla, the need for a much broader review, assessment, and modernisation of commercial law as a whole was identified.

The Government of Anguilla also recognised that the development of e-commerce in Anguilla requires deep and ongoing commitment on its part in carrying out the aims and recommendations of this Anguilla Policy framework including continuing study and adoption of best international practices, funding, and the facilitation of activities to directly promote the development of e-commerce in Anguilla and encourage investment.

The need for a broader review, assessment, and modernisation of commercial law as a whole will apply to at least half the CARIFORUM countries. Accordingly, the main features of the Anguilla Policy are elaborated here, as the contents can be useful to other countries in their efforts at increasing the use of E-commerce.

The Task Force identified and preliminarily reviewed a number of areas for consideration. In preparing the review it was decided to divide them into work areas similar to the FTAA model.<sup>54</sup> The areas for consideration are therefore divided into four areas: Strengthening the Information Infrastructure, Increasing Participation in E-commerce, Clarifying Marketplace Rules and Building Marketplace Confidence.

The Anguilla Policy noted that a modern, competitively priced telecommunications infrastructure characterised by the following is required for e-commerce to successfully develop:

- Promotion of broadband
- Competitive Pricing of services
- Highly reliable telecommunications services
- Wide availability of terminal equipment
- Competitive markets for infrastructure and terminal equipment
- Interconnection and interoperability.

PROGRAMME TO ENHANCE THE ESTABLISHMENT OF E-COMMERCE REGIMES AND THE ADOPTION OF E-COMMERCE BY SMES IN CARIFORUM (RPTF/ECOM/10/09)

<sup>&</sup>lt;sup>54</sup> FTAA Joint Government-Private Sector Committee of Experts on Electronic Commerce.

The Anguilla Policy notes that certain conditions have served to foster the rapid roll out of broadband services. Studies have shown that broadband has been most rapidly adopted where:

- There is a competitive market: This is facilitated by governments allowing and encouraging the construction of rival infrastructure to the telephone network, usually in the form of cable networks but also includes wireless networks.
- Regulators act in a manner that facilitates the unbundling of the local loop: Regulators operate so as to force incumbents to give other firms access to the copper wires running into homes. New entrants could then spring up to offer DSL over these wires, and so encourage the cable companies to compete by offering cable modems. Canada was one of the first OECD countries to unbundle its local loop.
- There is an adequate supply of technicians.

Anguilla's telecommunications legislation was designed to be technology neutral. Anguilla's Legal framework came out of its telecommunications policy<sup>55</sup> which was developed as a component of ICT policy. ICT was seen as Anguilla's prime mover of development especially in relation to its financial service and nascent e-commerce sectors. The objective of the Telecommunications Policy is:

"to create an open market for the provision of facilities and services and conditions in Anguilla's telecommunications sector in support of the continued development of tourism, financial services and information-based services on the Island, including the processing and secure storage of all types of data, encryption, software development, web hosting and back office services in the information technology sector, and international finance, trust and company management, insurance, and company registration in the financial services and insurance sectors."

## 5.1.3 Jamaica

The vision embodied in E-Powering Jamaica 2012, the new 5 year National Information and Communications Technology (NICT) Strategy 2007-2012, is that Jamaica will become an inclusive, development-oriented, knowledge-based society that achieves economic and social growth through the integration of ICTs into all aspects of the nation's life. The aim is to magnify Jamaica's position as a leader in the delivery of ICT-enhanced services and new investment opportunities in the Caribbean.

E-Powering Jamaica 2012 sets out a blueprint towards these desired outcomes. It is the result of extensive consultations and background research, including interviews with industry leaders, government executives, planners and industry analysts. It also benefits from benchmarking against ICT policies and strategies in nine other countries at varying stages of development, and an analysis of the approaches recommended in major multilateral organisations such as the World Summit on the Information Society (WSIS), the International Telecommunications Union (ITU), United Nations Economic Commission for

<sup>&</sup>lt;sup>55</sup> Peter A. Stern, Tira Greene, A New Telecommunications Regulatory Framework For Anguilla <u>http://www.tiragreene.com/policy1.htm</u>

Latin America and the Caribbean (UNECLAC), the Caribbean Telecommunications Union (CTU) and UNESCO.<sup>56</sup>

As far as e-Commerce and e-Business are concerned the major policy goals are of E-Powering Jamaica 2012 are to:

Encourage the increased use of online business to business and business to consumer operations through:

- Establishing a baseline for the number of businesses with websites and active ecommerce operations.
- Encouraging businesses to incorporate a e-commerce websites
- Presenting ideas to PSOJ, Young Entrepreneurs of Jamaica and other like organisations.

Build an effective indigenous ICT industry by:

- Establishing a database of registered/certified website designers who are capable of and has experience with developing secure ecommerce sites.
- Establishing a framework for exchange of ideas between business groups and developers of e-commerce practitioners.
- Support Small and Medium Enterprises and NGOs in taking greater advantage of ICTs for strategic and operational effectiveness by forming strategic alliances with SME preferred partners.
- Measure the contribution of the use of ICTs and the ICT industry to the national economy by forming strategic alliances with the Planning Institute of Jamaica for measurement and planning of ICT's contribution using the Threshold 21 (T21) integrated development model, STATIN and national financial data.
- Create user confidence through an enabling and equitable legal and policy framework by:
- Forming a task force of legal minds and law students to examine the laws, regulations, standards or orders to locate legislations/ordinances which will impede the use of ICT in businesses, government services and the legal system.
- Partnering to ensure the implementation of the recommendations contained in Jamaican Justice System Reform Task Force.
- Developing a program to build capacity in the judiciary and legal fraternity to effectively handle matters related to e-legislations.
- Create a legal and regulatory framework which protects ICT users and creators of ICT-Related products and services and encourages ICT-related business through the:
- Creation of the National ICT Advisory Council, of private and public sector interests, to recommend ICT policy adjustments and monitor implementation.
- Update the Evidence Act, and pass the Cyber Crimes and Data Protection Act, that will ensure the criminalisation of computer hacking, phishing and other cyber and ICT related offences.
- Establishing and fully implementing a policy for tele-work.

<sup>&</sup>lt;sup>56</sup> National ICT Strategy, Central Information Technology Office – Government of Jamaica; <u>http://www.cito.gov.jm/content/national-ict-strategy</u>

## 5.2 Selected International Experience

In the following sub-sections the experience of selected countries with e-commerce policies is presented, with a view of generating lessons for the CARIFORUM strategy.

The European Union is often (rightly or not) seen as a model for Caribbean integration. A brief discussion of its ICT and e-commerce policies and strategies is also in order in view of the recently signed EPA which is likely to enhance trade and economic ties between the two regions.

New Zealand and Canada are discussed as they deliberately deployed their e-government strategy as a means to lead the way in e-commerce. Encouraging the public and businesses to switch to electronic access – including electronic payment – of government services is seen as an effective way to introduce the concept of e-commerce, familiarise people with what is involved, and enable them to see the practical benefits. It can assist the spread of e-commerce not just from the supply perspective, by opening horizons to small businesses, but especially on the demand side with the public and enterprises becoming routinely accustomed to the use of the internet to access and pay for services.

The experience of Japan is instructive as it has a very aggressive and successful broadband policy, second in the world to South Korea.

Finally, South Africa is presented as a useful study on the process of development of ecommerce in a developing country which, like CARIFORUM, has only met with limited success in the uptake of e-commerce by SME's.

## 5.2.1 European Union

Given that one of the objectives of the CARIFORUM e-commerce strategy is to create a climate where CARIFORUM firms can conduct business with those of the European Union, a look at the current developments is important, as the internet being global in nature, frameworks need to be harmonized, if not identical.

The current key strategy document for Europe's ICT development is A Digital Agenda for Europe.<sup>57</sup> The Digital Agenda lists seven key problem areas affecting the development of a economically and socially sustainable digital single market using modern technologies. These findings can be very useful for CARIFORUM as they mirror the findings of this and other studies of the CARIFORUM Region as they deal with both the infrastructure and operational aspects. The key problems are:

"Fragmented digital markets: Europe is still a patchwork of national online markets. Commercial and cultural content and services need to flow across borders; this should be achieved by eliminating regulatory barriers and facilitating electronic payments and invoicing, dispute

<sup>&</sup>lt;sup>57</sup> A Digital Agenda for Europe, Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions, COM/2010/0245 f/2 of 26 August 2010.

resolution and customer trust. More can and must be done under the current regulatory framework to weave a single market in the telecoms sector.

**Lack of interoperability:** Europe does not yet reap the maximum benefit from interoperability. Weaknesses in standard-setting, public procurement and coordination between public authorities prevent digital services and devices used by Europeans from working together as well as they should. The Digital Agenda can only take off if its different parts and applications are interoperable and based on standards and open platforms.

**Rising cybercrime and risk of low trust in networks:** Europeans will not engage in ever more sophisticated online activities, unless they feel that they, or their children, can fully rely upon their networks. Europe must therefore address the rise of new forms of crime - "cybercrime" -

ranging from child abuse to identity theft and cyber-attacks, and develop responsive mechanisms. In parallel, the multiplication of databases and new technologies allowing remote control of individuals raise new challenges to the protection of Europeans' fundamental rights to personal data and privacy. The internet has now become such a critical information infrastructure for individuals as much as for the European economy at large, that our IT systems and networks must be made resilient and secure to all sort of new threats.

**Lack of investment in networks:** More needs to be done to ensure the roll-out and take-up of broadband for all, at increasing speeds, through both fixed and wireless technologies, and to facilitate investment in the new very fast open and competitive internet networks that will be the arteries of a future economy. Our action needs to be focused on providing the right incentives to stimulate private investment, complemented by carefully targeted public investments, without re-monopolising our networks, as well as improving spectrum allocation.

**Insufficient research and innovation efforts:** Europe continues to under-invest, fragment its efforts, under-use the creativity of SMEs and fail to convert the intellectual advantage of research into the competitive advantage of market-based innovations. We need to build on the talent of our researchers to deliver an innovation ecosystem where European based ICT companies of all sizes can develop world-class products that will generate demand. We therefore need to address the suboptimal character of current research and innovation efforts by leveraging more private investment, better coordinating and pooling of resources, 'lighter and faster' access of digital SMEs to Union research funds, joint research infrastructures and innovation clusters and the development of standards and open platforms for new applications and services.

**Lack of digital literacy and skills:** Europe is suffering from a growing professional ICT skills shortage and a digital literacy deficit. These failings are excluding many citizens from the digital society and economy and are holding back the large multiplier effect of ICT take-up to productivity growth. This requires a coordinated reaction, with Member States and other stakeholders at its centre.

**Missed opportunities in addressing societal challenges:** By harnessing the full potential of ICT, Europe could much better address some of its most acute societal challenges: climate change and other pressures on our environment, an ageing population and rising health costs, developing more efficient public services and integrating people with disabilities, digitising Europe's cultural heritage and making it available to this and future generations, etc." (p. 5f)

The Digital Agenda for Europe elaborates key actions aimed at dealing with these seven problem areas. These include:

- Elaboration of e-payment systems and Electronic identity (eID) technologies and authentication services
- Development and implementation of national broadband plans by 2012 that meet the coverage and speed and take-up targets defined in Europe 2020
- Adoption of legal provisions to facilitate broadband investment
- Use of the Structural and Rural Development Funds that are already earmarked for investment in ICT infrastructures and service
- Revisions and harmonization of telecommunications regulations as needed
- Measures aiming at a reinforced and high level Network and Information Security Policy,

- Measures, including legislative initiatives, to combat cyber-attacks against information systems
- Leverage more private investment through the strategic use of pre-commercial procurement and public-private partnerships, by using structural funds for research and innovation
- For Enhancing digital literacy, skills and inclusion: make proposals to ensure public sector websites (and websites providing basic services to citizens) are fully accessible by 2015. Propose digital literacy and competences as a priority for the European Social Fund regulation (2014-2020)
- With respect to ICT-enabled benefits for EU society: Propose a set of minimum functionalities to promote the interoperability of Smart Grids at European level.

## 5.2.2 <u>New Zealand</u>

New Zealand's e-commerce policy focuses on the following areas:

### Leadership and Communication

The policy is designed to allow the government in partnership with the private sector to raise awareness and champion e-commerce through leadership and communication involving the following actions:

- Publishing, dissemination, and discussion of the E-commerce Strategy across the public community.
- Championing New Zealand e-commerce business success through national business awards programmes.
- Supporting, through Industry New Zealand, Trade New Zealand, and Technology New Zealand, the development of key networks between businesses, professional service providers, and the financial community.
- Championing New Zealand's e-commerce, technology, and innovation capability overseas through Trade New Zealand and Ministry of Foreign Affairs and Trade networks.
- Currently the Ministry of Foreign Affairs and Trade and Trade New Zealand continue to work through New Zealand's overseas posts and offices to enhance market access opportunities using e-commerce for NZ exporters and promote NZ companies as innovative users of leading edge technology.

The Government proposes to deliver better quality, cheaper, and faster services to its customers through the introduction of on-line services, and lead by example through e-government and e-procurement.

The policy aims at ensuring the continuing supply of skilled resources by:

- Developing a co-ordinated international marketing approach to attract people with ecommerce and ICT skills to New Zealand.
- Monitoring and reviewing, on an on-going basis, immigration policies to ensure the continued supply of people with e-commerce and ICT skills.
- Developing an "Access from Anywhere" facility to provide a fast, convenient, on-line service for immigration, visa, and permit applications.
Promoting the training of New Zealanders in e-commerce and ICT.

#### **Building Capacity**

The Government will facilitate the development of business and e-commerce skills through the following initiatives:

- Working with business to build strategic, management, and technology skills under Industry NZ to improve business competitiveness through exploiting the advantage and opportunities of e-commerce in a global economy.
- The provision of the highest quality information and training material.
- Enhancing the quality of advice by building the capability of service providers and trainers.
- Building local networks of business e-commerce mentors.
- Supporting initiatives to enable SMEs to exploit collective opportunities to extract economies of scale with respect to technology and e-commerce applications such as, assisting in the dissemination of key e-commerce and E-commerce Action Team (ECAT) messages through its publications and website;
- Funding regional studies of ICT needs and contributing to the Broadband pilots;
- Providing information to NZ business through the Industrial Supplies Office (ISO) together with coverage of e-procurement opportunities.
- Fostering e-commerce capability in exporters through Trade New Zealand's business programme through education programmes aimed at lifting exporter awareness of global e-commerce opportunities;
- On-line matching of international business and investment opportunities;
- Facilitating exporters' marketing to overseas buyers through digital marketplaces.
- Fostering e-commerce capability in rural businesses through the rural education Activities/programmes.
- Publishing and maintain an e-commerce Guide for SMEs;
- Facilitating innovative e-commerce and IT companies' access to finance in order to grow their business through Industry New Zealand's investment Readiness Scheme by linking registered investors to private equity/venture capital/angel investment opportunities from a range of industries. Also by, registering and linking MSMEs with opportunities for skills development and access to investment.

Working to ensure that all New Zealanders have access to life-long learning opportunities to develop ICT skills for the 21st century by showing leadership in the education sector, through, for example, extending the capabilities of the bilingual on-line learning centre for schools and increasing the use of ICT as the communication and information tool of choice.<sup>58</sup> The Ministry of Education has been consulting on a revision of the ICT Strategy for Schools that will provide the next stage in leadership for the sector.

#### **Enabling a Regulatory Environment**

The policy speaks to the legal framework that is needed as an incentive to the early uptake of e-commerce by businesses. It deals with tax policy, trade policy, industry specific regulation and consumer policy:

• Ensuring an open and competitive economic environment that supports e-commerce.

<sup>&</sup>lt;sup>58</sup> See Ministry of Education (<u>www.minedu.govt.nz/</u>) and Te Kete Ipurangi – The Online Learning Centre (<u>www.tki.org.nz</u>).

- Ensuring an equivalent legal framework for electronic transactions and paper-based transactions.
- Developing consumer confidence by addressing security, privacy, and consumer protection concerns.
- Facilitating the development and protection of infrastructure.
- Reviewing, as appropriate, the rules that will govern the ownership and management of information.
- Monitoring and addressing emerging issues around the governance of the internet.
- Supporting the development of and enabling international norms and principles that maximise the cost effective opportunities for New Zealand businesses to use the internet to exploit e-commerce.
- Legislation to support an equivalent legal environment for both electronic transactions and paper-based transactions and to deal with cyber crime.
- Progressing the development of the Evidence Code, which will define how electronic communications can be used in evidence.
- Ensuring an appropriate tax environment that takes into account the growth of ecommerce.

The policy also enables Government to facilitate the development and protection of infrastructure as follows:

- Pursuing policy responses that will ensure cost-effective, timely, and innovative telecommunications services on an on-going, fair and equitable basis.
- Actively facilitating the development of a national infrastructure protection strategy, in partnership with the private sector, to enhance the security of essential networks from attack by hackers, criminals, and cyber-terrorists.

The Government encourages appropriate self regulation of industry by working with business to promote appropriate self-regulation through, for example, the development of industry codes of practice in areas such as consumer protection and internet services.

Finally, the Government promotes New Zealand's interests internationally by working with like-minded countries to achieve:

- International alignment of law.
- Minimisation of transaction costs for business.
- Maintenance of an open trading environment for the free flow of information and services; and
- The interoperability of infrastructures, secure electronic authentication, and payments.

# 5.2.3 <u>Canada</u>

The Canadian e-commerce policy speaks to the following issues:

#### **Building Trust in the digital economy**

This section of the policy is primarily concerned with reducing or eliminating the risk of conducting electronic transactions. Ratifying issues of security, privacy and consumer

protection are all required to instil trust in electronic commerce, for both businesses and consumers. This component focuses on:

- Setting up a trust infrastructure which includes a cryptography policy that reflects an appropriate balance among business, human rights and privacy interests, public safety and law enforcement, and national security interests.
- Designing a strategy for the protection of privacy.
- Developing guidelines for consumer protection in electronic commerce. Guidelines defining consumer protection requirements that provide the basis for the development of voluntary and legislative measures related to consumer information, contract formation, privacy, security and redress:<sup>59</sup>.

#### Clarifying marketplace rules

A body of rules that govern how business and government transactions are conducted has developed over time. To remove barriers to the use of electronic commerce, these rules need to be examined to assess how they apply to the digital world, and adapted where necessary, to create a level playing field which is predictable and consistent for all kinds of commerce. This policy looks at:

- Proposing adjustments to laws to bring certainty to the use of technology where these same laws have previously presumed the presence of paper records.
- Developing a policy in response to the reach of e-commerce with regard to financial issues. This includes issues of taxation, tariffs, financial services and markets.
- Developing e-commerce through the development and establishment of intellectual property laws. Establishing the rules of ownership and use of key types of digital content central to the development of e-commerce such as music, computer programs, video and multimedia works.

#### Strengthening the information infrastructure

Electronic commerce will not grow without a strong platform that includes network access and availability, and open standards. This policy sets out initiatives aimed at developing network access and availability.

#### Realising the opportunities

Electronic commerce is part of a broader process of economic, social and cultural change, characterised by the globalisation of markets and the shift toward an economy based on knowledge and information. Opportunities for jobs and growth created by electronic commerce need to be distributed as widely as possible among citizens, consumers and businesses, through development of skills and awareness, and government leadership as model users. This is attempted through the implementation of two initiatives.

First, a plan for the expansion of internet usage to a wider spectrum of consumers and all sizes of businesses is devised and implemented, through:

 Initiatives for lifelong learning, knowledge and skills development, community capacity building and access to information services. Also, promoting Industry Canada's Community Access program to provide internet access and opportunities for content development by communities, schools, and voluntary organisations together with

<sup>&</sup>lt;sup>59</sup> See Canada's Office of Consumer Affairs –Voluntary Codes Guides; <u>http://strategis.ic.gc.ca/SSG/ca00863e.html</u>.

digitisation projects to give Canadians the opportunity to acquire marketable skills and knowledge of information technologies.

- Designing and initializing projects with the private sector to expose SMEs and non-profit
  organisations to electronic commerce. Industry Canada has also launched the Electronic
  Commerce Newsletter, an educational vehicle for SMEs to present success stories, build
  trust and present compelling reasons for using electronic commerce. The newsletter is
  being distributed by Industry Canada's Entrepreneurship and Small Business Office.
- Developing skills for the future by encouraging the development of innovative academic programs in universities and other institutions in addition to dealing with the issue of high-tech skills shortages in Canada.

Second, the Government will play a key role in demonstrating the advantages of electronic service delivery, build a critical mass and trust among users, and pilot new technologies. It will commit to have all government services available electronically and develop the Government of Canada Public Key Infrastructure (GOC PKI) to allow federal government the means to make secure electronic delivery of its services available to Canadians, through the use of uniform key management and certification authority (CA) services and government and to provide a model that can serve as a standard for certification authorities, through cross-certification agreements with other levels of government and the private sector.

#### 5.2.4 Japan

Japan has developed the u-Japan policy.<sup>60</sup> It is an ICT policy package with the following basic points:

#### From Broadband to Ubiquity

The first is the development of ubiquitous networks. The goal of broadband infrastructure improvement which is set in "e-Japan Strategy" has been achieved. The development of infrastructure in the past mainly centred on wired connections, ranging from narrowband to broadband such as DSL, cable networks, and fibre optics. However, under "the u-Japan policy," a seamless ubiquitous network environment will be created in which people can receive services without being conscious of the networks (wired or wireless). The Ministry of Internal Affairs and Communication (MIC) aims to prepare the seamless access environment in every scene, by organic cooperation between fixed networks and wireless networks, and between terminals and networks, or between authentication, data exchange and networks. As a result, ICT environment that networks are integrated into all aspects of everyday life at the grassroots level is realized.

#### From introducing ICT to resolution by ICT

The second is an enhancement of the ICT usage. ICT usage in the past had emphasised pioneering informatisation and supported the fields where the informatisation had not been developed. Now, the "u-Japan Policy" focuses on resolving various social problems such as

<sup>&</sup>lt;sup>60</sup> This section is mainly based on the publication "The national ICT Strategies in Japan are evolving from 'e'(electronics) towards 'u'(ubiquitous)"; <u>http://www.soumu.go.jp/menu\_seisaku/ict/u-japan\_en/new\_outline01b.html</u>.

the falling birth rate and the aging population. As a result, people will realise that ICT is a tangible and helpful tool to resolve various social issues.

#### Upgrading enabling environment

The third is improving the user environment. As ICT has penetrated deeply into people's lives, worries and disturbances over privacy and information security that are emerging in cyber society have increased. In order to prevent such problems, so-called "negative aspects of ICT", it is necessary to upgrade enabling environment and to take comprehensive and concrete measures. By developing policies in line with these three basic points, the u-Japan Policy aim to realise a value-creation oriented society in which ICT penetrates deeply into people's lives, and new values emerge one after another through creative ICT usage.

#### The Structure of u-Japan Policy

The Network Policy encompasses three directions (Figure 65). The first reflects the fact that ICT will permeate all aspects of our daily lives at the grassroots level. To achieve this, the government must "develop ubiquitous networks so they can integrate fixed networks and wireless networks into a 'seamless access environment.'"

The second direction is based on the expectation that ICT will foster the development of solutions to the social issues that have become problems in everyday life. Therefore, government shall have to "achieve advanced usage of ICT," so that it can be applied to a variety of fields.



#### Figure 65: Summary diagram of u-Japan policy package

Source: The Structure of u-Japan Policy Package; available from: <u>http://www.soumu.go.jp/menu\_seisaku/ict/u-japan\_en/new\_plcy\_pckg.html</u>

Finally, the third direction echoes the necessity for the Ubiquitous Network Society to create an environment where anyone can use Information Communications Technology with complete assurance. Thus, "we must conduct upgrading of the enabling environment" in order to address concerns, such as the promotion of privacy and security.

Table 8, Table 9 and Table 10 summarise the main u-Japan policy points that influence the development of e-commerce and its uptake by small firms.

Policy points	Details	Actions	
Developing seamless access environment for both fixed networks and wireless networks	Steady promotion of Open Frequency Policy	<ul> <li>Promoting convergence of fixed networks and mobile networks</li> <li>Convergence of telecommunication and Broadcasting</li> <li>Upgrading IP infrastructure</li> </ul>	
Nationwide establishment of broadband infrastructure	<ul> <li>Alleviation of broadband divide</li> <li>Promoting ICT in local communities</li> <li>Promoting digital broadcasting</li> <li>Promoting competition policy</li> </ul>	<ul> <li>Discussion about on amending the Provisional Measures Law for Telecommunications Infrastructure Improvement</li> <li>Develop optical broadband networks and such</li> <li>Develop cable television facilities</li> <li>Develop public networks throughout the country;</li> <li>Develop next generation information platforms in regional areas;</li> <li>Upgrade public applications for public broadband networks throughout the country</li> <li>Develop digital terrestrial television broadcasting (parent stations) throughout the country</li> <li>Complete transition of digital terrestrial television broadcasting by 2011</li> <li>Promote practical applications of sophisticated services such as broadcasting services to mobile terminals and server-based broadcasting</li> <li>Promote digital terrestrial radio</li> <li>Complete transition to digital satellite broadcasting</li> <li>Execute competitive assessments (in all designated areas) Application of competitive assessments (reflect in policies)</li> <li>Beview and decide new calculation formulas for connection fees</li> </ul>	
Developing infrastructure for network collaboration	<ul> <li>Developing ubiquitous platform</li> <li>Securing interoperability among different networks</li> <li>Securing high network reliability</li> <li>Developing infrastructure for e- commerce</li> </ul>	<ul> <li>R&amp;D in universal platforms (natural language processing technologies, knowledge information processing technologies, technologies in digital content creation and distribution)</li> <li>R&amp;D in time stamp technologies;</li> <li>Review systematizing time stamps</li> <li>Development and pilot tests on technologies for Web services</li> <li>Promote the use of Web services</li> <li>Develop basic technologies for a secure network</li> <li>Develop the infrastructure for administrative e-commerce</li> <li>Promote the use of e-commerce between the government and businesses</li> <li>Standardise the metadata used for e-commerce</li> <li>Promote the use of a standardised metadata</li> </ul>	

Table 8: Policy Package (1) – Development of ubiquitous networks - outline

Policy points	Details	Actions
Condiction to al		Actions
Sophisticated	Enlightening	Accumulate solutions for a strategic use of ICT Spread the use of
social system	society and	best practices
reform by ICT	business	<ul> <li>Promote the use of computerised medical care (standardize)</li> </ul>
	reform by ICT	<ul> <li>Promote the use of remote medical care</li> </ul>
	usage	<ul> <li>Promote the implementation of telework to public servants</li> </ul>
	<ul> <li>Administrative</li> </ul>	<ul> <li>Implement telework into all ministries</li> </ul>
	reform	<ul> <li>Promote the use of telework to all public and private sectors;</li> </ul>
	fostering ICT	"Aim at realizing a 20% ratio of teleworkers 'of the total working
	usage	population
	Reform of	<ul> <li>Promote pilot tests for RFID tags</li> </ul>
	product	Promote e-government (on-line services and such);
	distribution	Promote e-municipality
	system	Optimisation of administrative systems in each ministries (Plan –
	Promoting e-	Do – Check – ACT)
	government	<ul> <li>Develop information platforms in regional areas for the next</li> </ul>
	and e-	generation;
	municipality	<ul> <li>Develop public application of public broadband networks</li> </ul>
		thorough out the country
		<ul> <li>Gradual review of the legacy system</li> </ul>
Promoting	<ul> <li>Supporting</li> </ul>	<ul> <li>Promote the results of pilot tests for copyright clearances and</li> </ul>
creation,	transaction	such;
trading, and use	such as trading	<ul> <li>Implement these results into actual businesses</li> </ul>
of content	and settlement	Review the copyright system
	of digital	<ul> <li>Implement a safety logo mark system for digital content;</li> </ul>
	content	<ul> <li>Promote measures toward illegal and harmful digital content</li> </ul>
	Promoting	<ul> <li>Develop and promote technologies for digital cinema</li> </ul>
	creation and	<ul> <li>Promote the use of various on-line archives by promoting the use</li> </ul>
	usage of digital	of archives for on-line information and on-line cultural heritage;
	Archives	<ul> <li>Promote the development of educational digital content</li> </ul>
	Creating	<ul> <li>Reinforce digital content in regional areas</li> </ul>
	attractive	<ul> <li>Support the development of pop culture</li> </ul>
	content	Promote measures to establish the "Japan" brand
	Establishing the	<ul> <li>Promote the distribution of made-in-Japan broadcasting digital</li> </ul>
	"Japan" brand	content at home and abroad
	by soft power	
ICT human	<ul> <li>Nurturing</li> </ul>	<ul> <li>Execute programs regarding the nurturing of sophisticated ICT</li> </ul>
resource	human	staff
development	resources with	<ul> <li>Support training of ICT and security staff</li> </ul>
	high ICT skills	<ul> <li>Nurture young researchers in the state-of-the-art ICT</li> </ul>
	<ul> <li>Supporting</li> </ul>	Capital support for ICT businesses
	incubation of	<ul> <li>Expand government procurement in ICT Businesses</li> </ul>
	ICT venture	Promote cooperation in ICT businesses
	business	<ul> <li>Establish support and consortiums such as graduate schools for</li> </ul>
	<ul> <li>Literacy and</li> </ul>	ICT oriented vocations
	education	<ul> <li>Review the implementation of information related subjects in</li> </ul>
	reform	university entrance examinations and examinations for teaching
	<ul> <li>Encouraging</li> </ul>	certificates
	civil	<ul> <li>Development and pilot tests for a ubiquitous learning</li> </ul>
	participation	infrastructure
		<ul> <li>Trendsetters to boost ICT and on-line networking of NPOs</li> </ul>

#### Table 9: Policy Package (2) – Advanced usage of ICT - outline

#### Table 10: Policy Package (3) – Upgrading Enabling Environment - outline

Policy points	Details		Actions		
Protecting		Enforce proper and	•	Enforce laws (April 1)	

Policy points	Details	Actions		
personal information held by public institutions and companies	<ul> <li>strict surveillance of laws and guidelines</li> <li>for protecting</li> <li>personal</li> <li>information by</li> <li>administrative</li> <li>agencies and</li> <li>independent</li> <li>Administrative</li> <li>agencies thorough</li> <li>supervision of staff</li> <li>and agencies</li> <li>Promote the</li> <li>protection of</li> <li>personal</li> <li>information to</li> <li>private</li> <li>organisations</li> </ul>	<ul> <li>Spread and familiarise the laws</li> <li>Thorough and proper management of personal data and information (controlled access to the data, limit the export of data, prevent illegal access to data and such);</li> <li>Find proper solutions to requests on disclosure</li> <li>Thorough staff education and training;</li> <li>Proper surveillance of staff and agencies</li> <li>Set up and authorise accredited organisations to protect personal information</li> <li>Execute proper processing of complaints by accredited organisations protecting personal information</li> </ul>		
Information network vulnerabilities	<ul> <li>Sophisticated IP infrastructures</li> <li>Develop technologies to analyse traffic logs Share information between ISPs and improve database</li> <li>International cooperation in measures toward cyber attacks and such</li> <li>R&amp;D on satellite communication technologies</li> </ul>	<ul> <li>Manufacturing IPv6 information appliances ;</li> <li>Pilot tests for transition to IPv6</li> <li>R&amp;D on IP backbone technologies to distribute traffic and secure quality of communication and such</li> <li>Develop basic technologies R&amp;D on high precision technologies</li> <li>Develop information sharing systems</li> <li>Expand and develop database</li> <li>Promote international cooperation by constructing a cooperative system to share information related to cyber terrorism</li> <li>R&amp;D on ultra high-speed satellite communication technologies and mobile satellite communication technologies</li> </ul>		
Computer Viruses, Awareness of information security among general users	<ul> <li>R&amp;D on basic technologies for anti-virus solutions and Such</li> <li>Review operational support to carriers</li> <li>Promote the use of anti-virus software</li> <li>Support anti-virus solutions by carriers</li> <li>Spread and familiarise information security</li> <li>Technical development, support, and implement security Measures</li> </ul>	<ul> <li>Develop basic technologies regarding the immediate control of newly bred viruses</li> <li>Select issues and review support measures</li> <li>Promote integration of anti-virus software;</li> <li>Diversification of OS and e-mail software</li> <li>Promote anti-virus measures by carriers;</li> <li>Support technical development for anti-virus measures and such</li> <li>Set up additional websites regarding experiences and damages regarding viruses;</li> <li>General screening of security</li> <li>Develop and promote the implementation of general security measures</li> </ul>		
Safety in electronic payment	<ul> <li>Familiarise the use of electronic signature and Authentication</li> </ul>	<ul> <li>Promote electronic payment by holding hation-wide talks on electronic signature, authentication and such</li> <li>R&amp;D on service platform technologies that have advanced authentication functions</li> </ul>		

Policy points	Details	Actions
	<ul> <li>R&amp;D in advanced authentication technologies</li> </ul>	
Malicious business practices using the Net	<ul> <li>Measures against bogus invoices</li> <li>Reinforce complaints and advisory windows</li> <li>Publicise and familiarize</li> </ul>	<ul> <li>Identification via mobile phone carriers</li> <li>Reinforce complaint and advisory windows at telecommunication consumer advisory centres and local integrated communication stations</li> <li>Publicise and familiarise actual operations and solutions through brochures, posters, websites and such</li> </ul>
Junk mail	<ul> <li>Enforce effective laws by the government</li> <li>Self-imposed solutions by carriers</li> <li>Block SPAMS using technical solutions</li> <li>Infiltrate awareness to users</li> <li>Promote international cooperation</li> </ul>	<ul> <li>Review specific laws regarding electronic mail;</li> <li>As a result, steady enforcement of laws and review how to continue the enforcement of these laws</li> <li>Promote self-imposed and cooperative solutions by telecommunication carriers</li> <li>Promote spread and implementation of technologies to recognise SPAMers Develop, implement, and promote the spread of technologies to block SPAM</li> <li>Promote effective solutions such as filtering services and anti-SPAM software</li> <li>Review and execute frameworks for international cooperation with other governments</li> <li>Further promotion of international cooperation based on frameworks and other proposals</li> </ul>
Intellectual Property strategies	<ul> <li>Execute Intellectual Property Strategic Program 2004</li> <li>Support the establishment of intellectual property strategies by industries</li> <li>Support the export of digital content</li> </ul>	<ul> <li>Enforce the Intellectual Property Strategic Program 2004 and future programs</li> <li>Establish business models to promote creative activities</li> <li>Nurture specialists in intellectual property</li> <li>Support overseas development;</li> <li>Promote measures toward piracy;</li> <li>Promote domestic and international distribution of made-in- Japan broadcasting programs</li> </ul>
Protecting copyrights for digital property	<ul> <li>Support measures against illegal file- sharing between Companies</li> <li>Execute measures against international piracy</li> </ul>	<ul> <li>Solutions toward illegal file-sharing;</li> <li>Review the P2P system; Measures toward fraudulent removal of protected copies</li> <li>Reinforce cooperation between public and private organisations;</li> <li>Accelerate discussions on New Broadcasting Treaty with WIPO;</li> <li>Promote bilateral cooperation; to find solutions for an antipiracy treaty</li> </ul>
Lack of reuse of content	<ul> <li>Promote and familiarise the use of digital content</li> <li>Reinforce measures that balance both the usage and protection of copyrights</li> <li>Expand the use of broadband and mobile terminals</li> <li>Construct and promote the use of</li> </ul>	<ul> <li>Discuss ways to increase opportunities and occasions to use digital communication;</li> <li>Promote education on copyrights;</li> <li>Heighten awareness on multiuse of digital content</li> <li>Technical development, publicise outcome</li> <li>Make practical business applications</li> <li>Support technical development with pilot tests; Understand the present conditions and discuss policies to increase usage; Enhance cooperation with digital content providers</li> <li>Construct, spread, and increase public domain systems</li> <li>Develop, execute, and promote procedures</li> </ul>

Policy points	Details	Actions	
Ethics of	<ul> <li>public domain systems</li> <li>Thorough implementation of the Bayh Dole Act for digital content</li> <li>Foster awareness in</li> </ul>	<ul> <li>Establish the ubiquitous charter; Relate the charter to WSIS</li> </ul>	
science in information technology R&D	<ul> <li>technicians and users regarding ethics in ICT</li> <li>Review systems to prevent illegal use of new technologies such as spy photo;</li> <li>Promote technological solutions</li> <li>Reflect ethical attitudes to R&amp;D in ICT Plan/Do/See for R&amp;D</li> </ul>	<ul> <li>Review systems and promote technical solutions</li> <li>Solutions for international cooperation for new technologies</li> <li>Reflect the Basic Plans for Science and Technology</li> </ul>	
Priority of ICT in establishing social capital	<ul> <li>PR on major budget distribution to ICT</li> <li>International comparison on ICT infrastructures</li> </ul>	<ul> <li>PR on major ICT strategies (Council on Economic and Fiscal Policy, Council for Science and Technology Policy and such)</li> <li>Assessment of the world's most advanced ICT</li> <li>Execute periodical comparison between countries</li> </ul>	
Regional divide in Advanced services	<ul> <li>Dissolving digital divide in broadband services</li> <li>Dissolving digital divide in mobile phone services</li> <li>Dissolving digital divide in digital terrestrial television broadcasting</li> <li>Upgrading satellite communications</li> </ul>	<ul> <li>Support improvement of cable television facilities</li> <li>Nation-wide construction of optical fiber networks for subscribers</li> <li>Dissolve mobile phone blind zones</li> <li>Promote upgrade in digital terrestrial television broadcasting</li> <li>R&amp;D in technology for large capacity satellite communications</li> </ul>	
Lack of advanced ICT human resources	<ul> <li>Nurture sophisticated ICT staff</li> <li>Support ICT businesses</li> </ul>	<ul> <li>Develop programs to nurture sophisticated ICT staff</li> <li>Support training in ICT security staff</li> <li>Nurture young researchers in the state-of-the-art ICT</li> <li>Subsidise ICT businesses</li> <li>Breakdown of successful ICT businesses</li> </ul>	
use of ICT in education	<ul> <li>Reforms in ICT specialised education</li> <li>Improve broadband in educational environments</li> <li>Promote usage of sophisticated ICT in educational environments</li> </ul>	<ul> <li>Review implementation of subjects on ICT in university entrance examinations and examinations for teaching certificates</li> <li>Develop and conduct pilot tests for ubiquitous learning</li> <li>Develop a high-speed network environment for education; Nurture teachers who can teach with ICT</li> <li>Review the use of terrestrial digital broadcasting in education;</li> <li>Develop educational applications for public broadband networks thorough out the country</li> </ul>	
e-government	<ul> <li>Promote a one-stop service system</li> <li>Optimise tasks and</li> </ul>	<ul> <li>Develop e-government one-stop services</li> <li>Develop and reinforce e-government portal sites</li> <li>Promote optimisation of processing systems for</li> </ul>	

Policy points	Details	Actions
	systems	authentications regarding IC administrations
	Promote e-	
	applications for	
	administrative	
	procedures	

# 5.2.5 South Africa

South Africa is presented here as a useful study on the process of development of ecommerce in a developing country which, like CARIFORUM, has only met with limited success in the uptake of e-commerce by SMEs.

The start of a formal process for e-commerce development in South Africa was in 1999, when the Department of Communications in South Africa launched the "e-commerce debate". A discussion document was published, a web site launched<sup>61</sup> and nine working groups were set up to explore the key issues relating to e-commerce in South Africa.

The working groups consisted of over 200 professionals, knowledgeable in e-commerce, who worked on various aspects of e-commerce under the four elements of the well-regarded OECD framework: Building Trust, Establishing the Ground Rules, Enhancing Infrastructure, and Maximising the Benefits.

The early attempts at formulating an e-commerce policy ended up being bogged down with numerous delays, and the process has been criticized as being repetitive. Many volunteers who had put in lot of time and effort into the process became frustrated at the lack of progress. The Green Paper was finally published in November 2000 after several e-commerce initiatives started without a policy framework. The Green Paper turned out to be in form and substance almost a textual restatement of the e-Commerce Discussion Document.

In order to speed up the process, by March 2001 the South African government decided to move directly to legislation in the priority areas including Digital Signatures, Certification Authority, Domain Name Authority, Cryptography and Encryption, Data Protection and Privacy, Consumer Protection, Computer Crimes, and Intellectual Property. The Electronic Communications and Transactions Act 25 of 2002 was passed in August 2002 to give effect the enabling legal and regulatory infrastructure for e-commerce. The State Information Technology Agency Act 88 of 1998 was amended in 2002, whereby the agency established an electronic-services subsidiary and changed its objectives to become the sole information-technology goods-and-services procurement agency for all national and provincial departments. The goal of this amendment was to enable IT, data processes and interoperability between government departments and to deliver services to the public.

In South Africa, a number of business-to-business (B2B) marketplaces have been launched since 2000, such as Quadrem, an electronic marketplace that serves buyers and sellers in

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<sup>&</sup>lt;sup>61</sup> <u>www.ecomm-debate.co.za</u>.

mining, metals and minerals. The use of online banking in South Africa is very prevalent. With respect to e-Government, up-to-date content is now available online from state and local governments. e-Government services offered include "E-file", the South African Revenue Service's online tax-filing and -payment service for value-added tax, pay-as-you-earn (PAYE).

With respect to SMEs, the impact of the policy has been much less positive. In an empirical study on e-Commerce adoption factors in South Africa, Motjolopane (2007) found that: "Only small sections of businesses and sectors adopted e-commerce. 18 % of businesses out of a possible 4,500 businesses listed on the Cape Town Regional Chamber of Commerce and Industry had e-commerce related Websites". Among the key e-commerce adoption barriers within SMEs were:

- Negative attitudes
- Lack of knowledge
- Resistance to change
- Lack of management commitment
- Gaps remain between online shopping and the physical experience: Ability to judge quality, Ease of buying locally
- Privacy & Security concerns

These barriers mirror many of the findings of the CARIFORUM wide survey conducted in this study.

In South Africa, the ten most significant success factors for e-commerce were:

- "User-friendly Web interface
- Top management support
- Maintaining strong links with customers
- Ensuring customer acceptance
- Providing up-to-date information, including prices
- Continuous promotions
- Customers can track bookings via booking ID number at any time
- Providing support service via the Web site
- Good technical infrastructure for fast processing
- Open system, anyone may access to conduct business." (Motjolopane, 2007)

Thus, before even looking at issues such as marketing opportunities or cost of transportation, in addition to the legal and ICT infrastructure, key operational issues to be addressed in CARIFORUM are managerial education and support, human resource skills for website development and maintenance as well as customer care and access to technical infrastructure.

#### Lessons learned

In South Africa, the lack of clear policies on other aspects of telecommunications, such as licensing and interconnection, was seen as a bigger problem than a delay in e-Commerce policy formulation. This is also expected to be an issue in some CARIFORUM countries, especially in relation to broadband policy.

Lack of inter-governmental co-ordination was also evident, with overlapping e-commerce policy processes in various government departments. This can also be seen as a problem developing in many CARIFORUM countries.

There were also questions on whether the ministry in charge had the expertise to adequately deal with the many specialised areas of technical legal concern as well as specialist areas such as trade and consumer protection.

Furthermore, the approach of consensus-building through the e-Commerce debate that was launched in June 1999 appeared to have produced a type of "policy fatigue" in the industry by the time the Green Paper was launched for comment. This process soon became unwieldy, with meetings either cancelled being so poorly attended as to be cancelled. A lesson learned from the use of consensus-building policy process is that it needs to be closely managed and speedily concluded or else there is a negative effect on planning moving forward.

It is worth noting that South Africa implemented priority legislation to provide the legal and operational infrastructure for e-commerce since 2002, whereas most CARIFORUM States have very partial implementation or are now in the process of formulating this legislation. It is submitted that this early adoption on the enabling infrastructure allowed for the earlier proliferation of e-commerce activities and initiatives in the private sector than in CARIFORUM and its consequent uptake by the business sector, and without this e-commerce simply cannot develop among SMEs in CARIFORUM. While larger businesses in CARIFORUM do conduct business electronically because of necessity (e.g. internet banking, mobile wallets, electronic cheque clearances) knowing well that the legal protections and frameworks are not fully in place, SMEs are not about to take that risk. The results of the survey undertaken in preparation of the strategy reveal that like SMEs in South Africa, the majority of the SMEs in CARIFORUM appear to lack of knowledge and skills to engage in e-commerce and lack the interest and/or commitment of management.

# 6 PROMOTING E-COMMERCE – KEY ISSUES BEYOND INFRASTRUCTURE

#### 6.1 The Services Layer

Once an acceptable basic foundational infrastructure is in existence, the next pertinent issue is that of encouraging, developing and enabling internet enabled services. Governments, private sector organisations and companies around the world have found different approaches for this; in this section some of the approaches are described and analysed, with a view to derive lessons for the CARIFORUM e-commerce strategy developed in Part B of this document.

# 6.1.1 Application and Content Development

The axiom "Content is King" is amply demonstrated by the ability of content aggregators such as Yahoo!, Google, Facebook and You Tube to capitalise upon the need to be able to access relevant content. The need for increased generation of indigenous or "local" on-line content (e-content) has been at the heart of passionate debates in the ICT arena, in discussions as diverse as "Combating the Digital Divide" to "The Transformation into Knowledge Economies".

This issue of a country's ability to produce high-quality, interactive and compelling content is not simply a matter to be philosophically debated in conferences and talk-shows but is a clear and present matter of assuring a country's/region's current and long-term economic competitiveness, capacity for innovation and sense of identity.

The policy questions therefore centre on what content will be accessed and how this content will be made relevant, leveraged, sustained and monetised once awareness and connectivity are achieved. However, harnessing this capacity to produce content and making it available such that it can be accessed and possibly traded over the internet is now no longer an option for the Region – it is a must.

One of the many countries that have gone as far as expounding a specific e-Content policy is Ireland.<sup>62</sup>

# 6.1.2 <u>Automated Online Customs Services</u>

Fully automating customs and duties systems, speeding up and simplifying transactions for importers and exporters, is often a critical supporting factor for those engaged in international e-commerce. A fully automated system reduces paperwork (indeed it can be entirely computerised), saves significant time and effort, and enhances reliability of service.

Given the obvious benefits of standardising the procedures and data exchanges used by different countries (so that importers, exporters and transportation companies do not have to deal with a myriad of different systems), international standards have been developed by UNCTAD for the automation of such systems using ASYCUDA (Automated System for Customs Data).

ASYCUDA is deployed in about 80 countries around the world, including in some CARIFORUM States, and can be implemented in parts of the process, or throughout the customs service, and can be combined with additional IT tools to further automate and computerise interactions. Albania, for instance, has developed it to a high level. It began as stand-alone systems for each Customs office, but in 2008 the process of putting them online began and it was completed in April 2009 with the migration to a new single database. All customs declarations are online at this point, with direct electronic payments of taxes and

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<sup>&</sup>lt;sup>62</sup> "A Strategy for the Digital Content Industry in Ireland", <u>http://www.forfas.ie/publications/digicontent02/021105\_digital\_content\_report\_s.pdf</u>.

charges. They have now completed a TIR Carnet<sup>63</sup> online system, and are adding an emanifest system beginning with the private company DHL, then moving to containers, airport cargo, border and inland ('indent') operations.

Benefits of such systems are significant, and not just for e-commerce:

- Customs clearance time is greatly reduced, with significant benefits for manufacturers, transporters and importers;
- There is greater transparency, and the scope for human interaction and hence corruption is greatly reduced;
- The customs database is more complete, accurate and up to date, for planning purposes;
- The system significantly reduces the effort demanded of government and the statistical office.

# 6.1.3 <u>Support for Electronic Payments Systems</u>

In the early stages of e-commerce development, in some countries when the banking system is underdeveloped, some firms have found it useful to use partners abroad to deal with payments aspects. This was a common approach for firms for instance in Vietnam, and could be a useful tactic to get around the limitations of financial institutions in some places.<sup>64</sup>

However, government may also have to negotiate strongly with financial institutions not simply to provide electronic payment services but to ensure they are easy to use and affordable for SMEs. Both regulatory requirements and incentives can be used.

In 2006 an OECD report reviewed the issues arising in relation to online payment systems for e-commerce<sup>65</sup> It identifies a range of impediments on the demand (consumer) and supply (business/regulation side), and outlines some of the solutions that have been tried elsewhere. An Annex includes a host of government initiatives related to electronic payments and settlement.

# 6.1.4 e-Commerce Guides, Handbooks and Information Websites for SMEs

Practical guides and information websites are among the most common means of spreading information and offer an initial level of training and support to those interested or potentially interested in e-commerce. They are produced and disseminated by government and private sector organisations and in some cases by commercial enterprises.

<sup>&</sup>lt;sup>63</sup> The TIR Carnet is a customs transit document used for covering duties and taxes during the international transport of goods.

<sup>&</sup>lt;sup>64</sup> See *e-Commerce in the Asian Context: Selected Case Studies* (eds) Renald Lafond, Chaitali Sinha. International Development Research Centre Institute of Southeast Asian Studies. "Impact of Policy on Development of E-Commerce in Vietnam" Tran Ngoc Ca. <u>http://www.idrc.ca/en/ev-72689-201-1-DO\_TOPIC.html</u>

<sup>&</sup>lt;sup>65</sup> Online Payment Systems For E-Commerce, Directorate for Science, Technology and Industry, 2006. http://www.oecd.org/dataoecd/37/19/36736056.pdf.

Among the most popular are step-by-step guides to implementing e-commerce outlining the supports and resources available. Enterprise Ireland offers guides to from beginners to advanced users, including numerous case studies and lists of service suppliers at each step.<sup>66</sup> Another basic introduction is produced by a professional association of e-enterprises.<sup>67</sup> Specific guides for more advanced e-commerce users are also used. Any number of topics can be zoomed in on, including using international electronic portals<sup>68</sup> and guidelines for interacting with international customers, including consumer legislation, data protection and other issues.<sup>69</sup> More generally a website dedicated to all aspects of e-commerce is a useful tool for gathering together a range of information on from legal issues to ICT suppliers, consultancy companies and links to international portals and e-trading sites.<sup>70</sup>

# 6.1.5 <u>e-Commerce Training Programmes</u>

High quality training programmes in e-commerce, including building the capabilities of industry trainers, important in the early stages of e-commerce, are often available from the private sector and some of the associations such as eConsultancy (see below). Countries must prepare their citizens to benefit from development of the e-commerce industry. From a purely technical point of view, e-commerce requires information technology and telecommunications skills, but just as important are business skills. This requires very strong educational programmes focused on IT and business. Skills transferred in such training programmes usually include the following:

- Basic IT/clerical skills include use of word processors, spreadsheets, database management, accounting software and order tracking.
- Advanced IT skills including network management, hardware and software implementation, systems analysis and systems administration.
- Business management skills include business planning, budgeting, financing, business law, project management and reporting.
- Change Management

# 6.1.6 <u>e-Commerce awards and quality assurance schemes</u>

A number of countries have introduced e-commerce awards scheme, to highlight and encourage achievement. Awards are considered primarily to be a part of an awareness raising campaign, contributing an element of incentive.

The UK's e-commerce award scheme ran from 1999 to 2005, and claims to have generated extensive interest. Sponsored by private sector and public bodies there were six categories of winners with cash awards and significant publicity.<sup>71</sup>

<sup>&</sup>lt;sup>66</sup> See <u>http://www.enterprise-ireland.com/ebusinesssite/guides/how\_to\_guides\_index.asp</u>.

<sup>&</sup>lt;sup>67</sup> See <u>http://econsultancy.com/reports/e-commerce-a-beginner-s-guide</u>.

<sup>&</sup>lt;sup>68</sup> Discussed below and see <u>http://www.emarketservices.com/clubs/ems/artic/HandbookEnglish.pdf</u>.

<sup>&</sup>lt;sup>69</sup> See <u>http://www.treasury.gov.au/contentitem.asp?NavId=014&ContentID=1083</u>

<sup>&</sup>lt;sup>70</sup> Industry Canada's Website is here: <u>http://www.ic.gc.ca/eic/site/ic1.nsf/eng/h\_05229.html</u>.

<sup>&</sup>lt;sup>71</sup> For more information see <u>http://www.ecommerce-awards.co.uk/</u>.

An award initiative of a different nature is the Austrian 'e-Commerce Trust Mark', a scheme in which e-commerce suppliers are awarded a quality mark if they match up to criteria of service delivery, security, customer service and so on. It has pro-active elements and offers assistance to e-commerce providers in designing their websites and conforming to standards.<sup>72</sup>

#### 6.1.7 B2B International Electronic Market Portals

B2B electronic markets connect a large number of suppliers to a large number of buyers, using a Web browser. An example is the *eMarket Service*, funded by the trade promotion organisations of Australia, Holland, Iceland, Italy, New Zealand, Norway, Spain and Sweden. The goal is to make it easier for companies to find and use electronic marketplaces for international business. It offers a handbook to those wanting to take up e-commerce, a directory of e-marketplaces globally, and a guide to assess what an e-market suits or not.<sup>73</sup>

#### Box 8:Main trading functions on B2B portals

Supplier directories and search engines help buyers to find new suppliers and help sellers to get leads. They are databases of suppliers, searchable by products or services offered by the supplier. Sellers can get listed in such databases to be found and to get leads. The benefit for buyers is a clearer view of potential suppliers for markets and regions they are not familiar with. A user-friendly example that serves a number of European countries is Wer liefert was?<sup>74</sup>.

Tendering services allow users to announce calls for tenders to a large number of potential suppliers. Some also provide basic support for the tendering process, but most just publish the call. There are public tendering databases that aggregate the calls for tenders from several government institutions, and there are open tendering platforms which enable any company or public institution to announce calls for tenders, often in a particular industry. Tenderlink http://www.tenderlink.com/ is the largest such service covering Australia and New Zealand, and also includes some assistance.

e-Commerce Classifieds help buyers and sellers to trade discrete products. They display offers of specific products for sale, sorted by type, the brand or even the seller. They resemble 'for sale' sections in newspapers or trade magazines and are often focused on an industry or a certain range of products. Some classifieds services – the best known being eBay – also provide a functionality to negotiate prices, e.g. via an auction. They are often sectorally focused such as Fordaq<sup>75</sup>, which is focused on buying and selling timber and wood products. But the eBay specialist business website amongst others covers just about anything.<sup>76</sup>

e-Commerce Auctions help sellers get the right price for products ranging from fish and flowers to chemicals and patents. Auctions can also be used to get rid of surplus assets and offer buyers the opportunity to find a bargain. Often they combine online and offline auctions, where traditional auction houses also make their auctions available online, either by themselves or in cooperation with internet platforms. Most of these services are more than just a B2B internet platform. They should rather be regarded as auction full service providers. Pefa<sup>77</sup> is one of the largest fish auction websites in Europe.

Reverse auctions, also called sourcing auctions or buyers' auctions, help buyers to find the cheapest supplier

<sup>&</sup>lt;sup>72</sup> A brief description in English can be seen at: <u>http://ec.europa.eu/enterprise/sectors/ict/files/ebsn/best-</u> practices/austria\_en.pdf. <sup>73</sup> See http://www.emarketservices.com/start/Home/index.html?cl=ems.

<sup>&</sup>lt;sup>74</sup> It can be found at <u>http://www.wlw.de/com/index\_wlw\_en.html</u>.

<sup>&</sup>lt;sup>75</sup> http://www.fordag.com/.

<sup>&</sup>lt;sup>76</sup> http://business.shop.ebay.com/.

<sup>&</sup>lt;sup>77</sup> http://www.pefa.com/

for a contract. Within the auction, potential suppliers lower their bids and underbid each other until the supplier with the lowest bid wins the contract. Reverse auctions often take place on dedicated internet platforms, but they can also be found as part of larger B2B internet platforms or as an element within enterprise software for supply management.

Source: Adapted from e-Market Service Handbook

#### 6.1.8 Partnering to build the e-Commerce User Base

Serbia offers an interesting example of a partnership led by the Chamber of Commerce and including Diners Club bank and several government departments. A secure electronic signature had already been introduced in Serbia for online interactions with both government and business, based on smart cards. The problem from the Chamber of Commerce's perspective was getting businesses to use them, especially as the cards themselves, complete with readers to plug into a computer, cost money. The Chamber, a strong proponent of e-commerce, believed that a certain critical mass of business users was needed before services could become viable.

It formed the partnership as an innovative means to distribute for free up to 20,000 esignature cards/readers to SMEs by March 2010. The cards can be also be used, for a small fee, to submit and pay VAT returns online (the VAT office receives a small proportion of the fee) and to interact with government concerning employment registration.

Diners Club is paying for the cards and readers, as the cards themselves can double as Diners Club credit cards. Diners Club had been seeking to expand its customer base in Serbia and the partnership offered a unique means of recruiting up to 20,000 of the most innovative SMEs. Their expectation is that many of the SMEs, although under no obligation to do so, will begin to use them as such.

Diners Club also further facilitated e-commerce among the SMEs. In the past major banks have required guarantees of up to  $\leq 200,000$  as a condition for opening an e-commerce account for online sales, a sum beyond the reach of most SMEs. Diners Club, in this scheme, is willing to offer them the service for a guarantee of about  $\leq 10,000$ .<sup>78</sup>

#### Box 9: A Regional Example: The e-Business Roundtable in Trinidad and Tobago

The e-Business Roundtable is a Trinidad and Tobago Cabinet Appointed Standing Committee which acts as both a 'Think Tank' as well as an action oriented group. It is a private sector led partnership with government that aims to map out a strategy for Trinidad and Tobago's economic growth and success by focusing on leadership, opportunity recognition, innovation and revenue generation through the use of Information and Communication Technologies (ICTs) in business.

The Roundtable aspires to be the premier organ for leading the coordination and execution of the Trinidad and National e-Business effort within the next period. Launched in October 2006, the Roundtable will continues to work toward its critical mandate which includes:

- To influence Government's ICT policy and facilitate the development of Trinidad and Tobago's internet economy.
- To act as a pool of private sector expertise available to assist in the development of existing enterprises as well as the identification and promotion of new domestic, regional and international business

<sup>&</sup>lt;sup>78</sup> This is from an eSEE Publication, forthcoming. See <u>www.eseeinitiative.org</u>

opportunities

- To work with the various Industry Associations to explore the potential for ICT as a sector-level catalyst for the enhancement of foundation industries such as, Financial Services, Energy, Tourism, Culture/ Entertainment, Fisheries Management and Agriculture.
- To inspire Trinidad and Tobago business and citizens to grasp the opportunities presented by network technologies, including the internet.
- To identify new and emerging human capital development requirements to support Trinidad and Tobago's increased levels of ICT-driven innovation.

The Trinidad and Tobago e-Business Roundtable is comprised of executive representatives of Business Chambers, Academia, Government, the Banking Sector, the ICT Sector and the Small Business Sector.

#### 6.1.9 <u>B2C e-Commerce Support Platforms</u>

A business to customer e-commerce platform can be built to act as a 'shop window' for a group of SMEs producing related products for a given type of customer. Small rural enterprises using traditional skills, for instance, may be targeted for this kind of support action, offering them the marketing, electronic payment and delivery components of e-commerce. Examples might include skilled artisanal products such as jewellery, textiles or ceramics which have the advantage of being relatively small, non-perishable and of high value. The longer-term objective may be to create a sustainable e-commerce platform, either owned by the producers or as a separate entity; or to act as a form of 'incubation unit' for the skills and technologies needed for the more successful SMEs involved to develop their own e-commerce activities.

An example can be seen in India, where several platforms for skilled artisanal workers to collectively market their goods were piloted.<sup>79</sup>

#### 6.1.10 Peer Support Networking for e-Commerce

A peer support network for e-commerce brings together those involved in e-commerce to exchange experiences and ideas, build up their own market interactions and, in some cases, employ staff to develop a wide range of support services such as training, events organisation, publications, and consulting. Peer support networks are particularly useful when those involved are on a learning curve, and are encountering challenges of a somewhat similar nature.

Some are large enough to be commercial operations in themselves, such as *eConsultancy*<sup>80</sup> which charges an annual fee for different levels of membership, and claims a total global membership of over 80,000. Smaller scale regional networks can also make be suitable.

<sup>79</sup> See <u>http://www.idrc.ca/en/ev-72689-201-1-DO\_TOPIC.html</u>.

<sup>&</sup>lt;sup>80</sup> http://econsultancy.com/.

# 6.1.11 Financial and Tax incentives

Tax incentives are also used quite widely to encourage e-commerce.

- Malta's Ministry of Information Technology and Communications offers €12,000 in tax credits to any business producing an e-commerce-enabled website
- To develop Singapore as an e-commerce hub, e-commerce companies are eligible for a reduced tax rate of 10% for a period of five years on the income derived from ecommerce transactions with parties outside Singapore.

Providing funding through micro-financing facilities, including incentives to target SMEs, might also be a possibility.

# 6.2 Industry Formation: The Next Stage

The next level of actions is distinguished by its emphasis on creating or attracting entirely new economic actors, industry sectors or economic zones enabled by ICTs and engaging from the outset in e-commerce as a central more of doing business. They represent a stage beyond simply encouraging existing actors to move towards e-commerce, and a deeper stage in its adoption. It should be emphasised, however, that these actions can be planned and initiated alongside those above. They include:

- Supporting the emergence of supply-chain integration;
- The emergence of Cyberparks, e-Commerce Technology Zones and ICT Enabled Clusters;
- Designing and Implementing an e-Commerce Sector-Specific Strategies.

#### 6.2.1 <u>Supply Chain Integration</u>

The exchange of commercial electronic data between companies already in business together is, despite the fact that it does not appear on the open market, a critical form of ecommerce, and is already a vitally important component among larger companies in establishing international supply chains and trading partners. Essentially it involves the integration of specific components of the electronic information flow of companies, buyers and sellers. Smooth electronic data flows between buyers and sellers can significantly reduce order-to-delivery times (and often form the basis of 'just in time' production techniques), simplify transactions, and encourage trust between partners.

There are a number of hubs for B2B integration, developed with the support of government policy. Elemica<sup>81</sup> for instance offers the service to the chemical and related industries, such as tire producers, facilitating order processing and supply chain management of contract and repeat transactions. Most larger companies connect their backend systems directly to Elemica, but for SMEs or those unwilling to connect directly, Elemica offers a web front-end. The Elemica Website offers case studies, as also does IBXnordic, another B2B system integrator.<sup>82</sup>

<sup>&</sup>lt;sup>81</sup> http://www.elemica.com

<sup>&</sup>lt;sup>82</sup> http://www.ibxnordic.com/ibx-supplier-overview.aspx

#### 6.2.2 <u>Technology parks</u>

Thriving technology parks or "cyberparks" have been an elusive goal for many economies. These assets are designed to strengthen local ICT businesses and attract foreign companies by creating a microcosm of efficiency and connectivity that surpasses the business environment in the rest of the country. When parks are customised for a specific sector, they also promote the type of clustering and shared services, information and resources that foster competitiveness.

e-Commerce Enterprise Zones are also deployed to offer incentives to companies to invest:

- The state of Oregon in the United States offers a tax incentive to those locating in an Electronic Commerce Enterprise Zone. Qualifying businesses can gain a credit of up to USD 2 million per year, in addition to property tax savings (for which personal property, equipment and machinery used in e-commerce more readily qualifies for standard enterprise zone exemption). This income tax credit amounts to 25% of annual capital investment in assets that serve e-commerce operations inside the enterprise zone. Unused credit amounts have a carry-forward period of five additional years.<sup>83</sup>
- The Netherlands Antilles offers a corporation tax rate as low as 2% in its e-commerce zone, and a number of other incentives.<sup>84</sup>
- Box 10 provides further details about the Tamana In Tech Park in Trinidad and Tobago.

#### Box 10: The Tamana In Tech Park in Trinidad and Tobago

Trinidad & Tobago has been pursuing its own customised version in the form of the Tamana InTech Park. This specialised infrastructure project, led by eTeck, has an ambitious agenda:

"this Science and Technology Park will be central to the creation of the leadership that will shape the next economy and by extension, the quality of life in Trinidad and Tobago. It will be the hub for new communities and a Central Business District like no other. Its impact and influence will stretch beyond its boundaries into the very core of our socio economic advancement"<sup>85</sup>

The Tamana InTech Park has been designed to advance these goals. Its current layout hosts a wide range of inputs that are potentially valuable to technology firms and the high-skilled workforce they will require, including various high-technology "zones" customised to specific sectors, and a new campus for the University of Trinidad & Tobago (UTT). Specific inputs include:

- A computer-related zone will engage in data processing, software development, programming and business processing
- A high-value manufacturing zone will have technology-based and specialised manufacturing
- The agro-industrial zone will cater to food and organic farming as well as agro-industrial and forestry activities
- A mixed-use and services zone will provide technical support and maintenance, media consultancy, and healthcare
- A university complex, housing UTT and R&D activities
- The park & community service centre will provide recreational children facilities, nature and historical centres, and amenity areas
- A Moriche Palms interpreting Centre
- A Community outreach Facility, an Auditorium and a Leadership Circle

<sup>&</sup>lt;sup>83</sup> See <u>http://www.areadevelopment.com/stateResources/oregon/Oregon-Direct-Financial-Incentives.shtml</u>.

<sup>&</sup>lt;sup>84</sup> See http://www.offshore-e-com.com/asp/story/story.asp?storyname=2598

<sup>&</sup>lt;sup>85</sup> eTeck, Tamana InTech Park Promotional materials; and <u>http://www.eteck.co.tt/2eng/default.aspx</u>

# 6.2.3 ICT Enabled Clusters<sup>86</sup>

A cluster is a group of interconnected economic and research institutions faced with common opportunities and threats, usually co-located in a particular geographic region. The development of clusters based on a platform and foundation of ICT has been a key factor in the acceleration and success of economic initiatives globally. Nations around the world have long known and been experiencing the benefits of clusters such that these are a prominent feature of every advanced national economy. This is due to the fact that clusters:

- give rise to external economies (e.g. specialised technical and financial services, sector specific management skills, training and workforce synergies etc.);
- create a conducive ground for the development of inter-firm cooperation and publicprivate partnerships, to promote local production, innovation and collective learning;
- can act as the drivers and beneficiaries of R&D initiatives;
- exceed the scale of individual firms allowing the cluster to collaboratively service larger contracts both at the local and international levels.

If we take for example the United States; the US is not a competitive nation. It is a nation of competitive clusters (see Figure 66).



#### Figure 66: Competitive US Clusters<sup>87</sup>

Some of the specific strategies for catalysing a Regional Technology Cluster (or any industry specific cluster for that matter) include:

<sup>&</sup>lt;sup>86</sup> This section is taken (in some cases verbatim) from the Article "Building an Education Cluster in T&T" by Atiba Phillips, in: CONTACT magazine June 2009: <u>http://www.contact-tt.com/index.cfm?Content=620</u>

<sup>&</sup>lt;sup>87</sup> OTF Clusters and Competitiveness Report 2008

Attracting Globally-Renowned Anchor Companies to Operate Domestically: Since Intel's decision to invest in Costa Rica in 1996, the case of the global electronics giant choosing the tiny country to locate its US\$300 million semiconductor assembly and test (A&T) plant has been widely recounted in the field of investment promotion. A seemingly unlikely match, it is now known that Costa Rica identified a close fit with Intel through meticulous research, and then demonstrated with precision how the country's investment climate would adapt to meet the project's requirements. This was accomplished with the active involvement of the highest levels of government in a short timeframe against an impressive list of competitive locations.<sup>88</sup>

Such world-renowned institutions bring with them world-class technology enabled learning infrastructure, teaching pedagogy, operational best-practices and not to mention their globally-recognised brand - immediately making the country or Region into which they invest stand out in the realm of the global business and technology landscape.

**Upgrading Sector-wide Infrastructure**: Single domestic (or even international) ICT or ecommerce companies can seldom successfully compete in the global marketplace and win on their own. An innovation or technology cluster will rely on diverse inputs and infrastructure elements – including ICT, security, utilities, physical infrastructure, intellectual property regulation, highly skilled human capital and financing – in order to be successful. Upgrading therefore must be looked upon not in the context of individual institutions but in the upgrading of the cluster as a whole.

**Identifying Specific Focus Areas** (for e.g. education sub-clusters in energy, tourism, agriculture, financial services, or ICT): Knowledge-based industries which develop deep and specialised capabilities to serve the most demanding of customers, are much more likely to be fuelled by higher-skilled, higher-paid workers and tend be significantly more profitable than clusters that compete on costs rather than true differentiation. It is through the channelling of finite resources into the development of niche expertise in specific strategic areas – possibly those in which the Region already has a competitive advantage – which allows countries to sustainably compete within the global arena.

# 6.2.4 <u>A Sectoral Approach to e-Commerce</u>

A comprehensive sector-specific approach to enabling e-commerce has been pursued by many governments. From about 2000 on, Australia, the UK, Singapore, Hong Kong, Thailand and others recognised that some sectors could potentially benefit significantly from e-commerce but that market incentives in the sector were unlikely to bring about widespread adoption, at least at a pace that might enable the use of e-Commerce to secure a greater market share. Furthermore it was not regarded as a zero-sum game – if the sector as a whole adopted e-commerce, the rate of potential business growth from the global market would mean that all firms could benefit.

<sup>&</sup>lt;sup>88</sup> <u>http://www.fdi.net/documents/WorldBank/databases/investing\_in\_development/intelcr/</u> casestudiesIntel.pdf

A sector-specific or sector-based approach sets out to cultivate an e-commerce culture among businesses in the sector through a number of actions, usually undertaken in close partnership with industry associations or other relevant partners.

The first involves an analysis of perhaps a large number of sectors to understand their dynamics in relation to e-commerce, including the intra-sector and extra-sectoral supply chains, and the current level of uptake and potential for growth. In those sectors selected for in-depth study, the analysis proceeds beyond macro-level considerations to micro-level scrutiny of firms exploring the business case for e-commence, and identifying barriers and possibilities.

Within selected priority sectors, a coherent approach is then taken to building an ecommerce dynamic. The government role is more "as an honest broker in facilitating the collaboration of stakeholders across industries to increase e-commerce uptake."<sup>89</sup>

It might begin with awareness-raising and education on the specific benefits of e-commerce identified for the sector. Actions to encourage a collaborative approach are taken, including opportunities for firms to meet – seminars, focused conferences, workshops – and collectively consider the advantages and build relationships among each other along the supply chain, involving industry associations as intermediaries and agents of change.

The process is then further encouraged through the provision of supplying a selection of actions outlined above such as consultancy support, specific incentives, training manuals, trading Websites and so forth.

The sector-specific strategy to e-Commerce has obvious relevance to the Caribbean region as a whole, for instance in sectors such as tourism where global, more than national, competition drives the markets.

# 7 SUMMARY: FACILITATORS AND BARRIERS FOR ADOPTION OF E-COMMERCE BY CARIFORUM SMES

As mentioned previously, studies in developed counties indicate that the **knowledge and commitment of owners or managers** play a key role in whether SME's engage in ecommerce. This has also been the finding of the survey and stakeholder consultations: SMEs tend to have concerns about return on investments that may lead owners or managers to be reluctant to make substantial investments when short-term returns are not guaranteed. The barriers related to the characteristics of the organization, which affect adoption of ecommerce relate to the current level of technology usage within the organization, low use of e-commerce by customers and suppliers, concerns about security aspects, concerns about legal and liability aspects, high costs of the development of computer and networking

<sup>&</sup>lt;sup>89</sup> *B2B e-Commerce: Capturing Value Online*, National Office for the Information Economy, Government of Australia. Chapter 4, Introduction. <u>http://www.archive.dcita.gov.au/2001/10/b2b\_e-commerce</u>

technologies when moving towards e-commerce, limited knowledge of e-commerce models and methodologies, and the perception of the lack of value means that many SMEs remain unconvinced about adoption of e-commerce.

Second, the communications and technology infrastructure affects the adoption to a large extent as adoption is more prevalent in countries with good technological support and sound infrastructure (Tan and Teo, 2000). Lack of human resources and skills, set-up costs and pricing issues, and concerns about security tend to be inhibiting factors. SMEs' adoption of e-commerce depends mainly on their perceptions of the opportunities afforded by it and the relevance of those opportunities to their business (OECD, 1998).

SME e-commerce research conducted for developing countries which possess different economic, political, and cultural climates have been more limited and identifying the differences is an initial step to understanding of the process of technology adoption. While e-commerce in developed countries takes advantage of the well-developed infrastructure, regulatory environment, and abundant internet buyers, developing countries need to find ways to overcome the many challenges found in their environment. A study in Thailand revealed that the lack of electronic legal framework and payments systems act as inhibiting factors to engage aggressively in e-commerce (Laosethakul & Boultan, 2007). Cloete et al. (2002) in their study of SME adoption of e-commerce in South Africa found inhibiting factors such as lack of access to computers hardware and software; lack of telecommunications at a reasonable cost; low e-commerce use by competitors and supply chain partners; concerns with security and legal issues; low knowledge level of management. Likewise, in their study of e-commerce in China Dedrick and Kraemer (2001) found the low diffusion of computers, high cost of Internet access, and a lack of online payment processes to directly inhibit ecommerce while inadequate transportation and delivery networks, limited availability of banking services, and vague taxation rules acted as indirect inhibitors.

The above analysis has shown that all of the above is also true in CARIFORUM countries where both internet penetration rates are low and access costs are high. CARIFORUM countries therefore need to invest both in the technical and legislative infrastructure in order to facilitate e-commerce.

**Cultural barriers** in some countries may also exist to reject the acceptance of e-commerce as a way of doing business (Bingi et al., 2000). For instance, in countries like Sri Lanka and India, shopping is a social activity, and personal face-to-face contact with vendors is seen as an important part of the shopping experience. Lack of trust in revealing personal and credit card information is an e-commerce issue in any country and it could become a serious obstacle to e-commerce growth (Anigan, 1999). It is to be noted that public opinion surveys in the United States and Canada show high anxiety levels over privacy and, in particular, over the way new information technology can erode privacy. In small countries such as CARIFORUM this is even more of an issue: the survey and consultations revealed this as a key inhibitor to the use of e-commerce both by SMEs and consumers. The lack of developed legal and regulatory systems inhibits the development of e-commerce.

# **PART B: STRATEGY**

# **1** AN E-COMMERCE STRATEGY FOR CARIFORUM – OVERVIEW

# 1.1 The Status Quo

The findings of the analysis undertaken in Part A of this document can be summarised as follows:

- The telecommunications infrastructure in some CARIFORUM States suffers from insufficient broadband availability and/or at an affordable price and would benefit from a more liberalised telecommunications environment.
- The legal and business environment in many CARIFORUM States lack clarity in the predictability of the application of the rule of law, the investment or incentive environment toward research and development, as well as the level of accomplishment and interconnectivity of the banking sector (including the availability or lack of access to electronic payment facilities).
- Privacy and trust are insufficiently guaranteed in CARIFORUM, due to an only partial existence of data protection and other security legislation within the region, the lack of awareness of consumers about their rights, options and alternatives, the lack of mechanisms to indicate the level of risk associated with transactions, as well as the lack of infrastructure to deal swiftly with any occurrences of cyber-crimes.
- Human resource capacities for e-commerce are highly constrained. Most SMEs are currently incapable of accessing the strategic, managerial and technical talent required to properly assess and effectively implement e-business alternatives/solutions.
- There is a lack of full ability to create indigenous high-quality content which can be shared across different platforms as well as the availability to public e-content for private sector re-use. The availability of such content and services would be a key requirement for many national and regional-level e-commerce policy initiatives.
- Regarding e-government, there is a lack of overarching policies, legislation and planning, lack of e-payments systems to and from the public, lack of existence of policies to encourage interoperability, problems with co-ordination between governmental departments.

The e-commerce strategy as proposed in this document will need to address the issues listed above.

# 1.2 The Vision

The vision which the CARIFORUM e-commerce strategy pursues is that SMEs in the CARIFORUM actively engage, without being restrained by legal or technical bottlenecks, e-commerce in their domestic, regional and international business. The use of e-commerce has created a virtuous circle through the strengthening of CARFORUM SMEs' international competitiveness.

Specifically, the target situation which the CARIFORUM e-commerce strategy aims to help achieve has the following characteristics:

- The Legal and Business Environment a predictable and transparent legislative framework, harmonised with best international practices, allowing for the ease of doing business electronically while providing the required protections. Access to quality electronic payment facilities and information security services.
- The Telecommunications Market and Infrastructure A de facto liberalised telecommunications environment and the wide availability of high quality, high speed and affordable broadband access.
- Privacy and Trust The existence of relevant data protection and other security legislation, the awareness of consumers about their rights, options and alternatives, mechanisms to indicate the level of risk associated with a transaction as well as capacity and infrastructure to deal swiftly with any occurrences of cyber-crimes.
- Human Resource Capacity the availability of strategic, managerial and technical talent required to effectively implement e-business alternatives/solutions. The promotion of relevant training programmes to address this skills gap.
- Content and Services the ability to create indigenous high-quality content which can be shared across different platforms as well as the availability to public e-content for private sector re-use.
- E-Government Government to use its size and status as the largest single provider of services to the economy to act as a Model User, leading by example through its own use of e-commerce/e-business techniques in the delivery of its services. Both at the national and regional e-Government Strategies implemented that will outline the objectives and processes for the modernization of Government:
  - As a means towards: enhancement of transparency, accountability and good governance;
  - Making the Government more result-oriented, efficient and public focused;
  - Allowing members of the public and business to access Government Services and Information in an efficient and effective manner
  - Increasing the use of e-commerce by members of the public.

# **1.3 Elements of the E-Commerce Strategy**

The analysis undertaken in the first part of this document suggests that a multidimensional strategy is required to enhance SMEs' use of e-commerce in the CARIFORUM countries. This means that both technological upgrading, drafting of appropriate legislation and regulations, and capacity building and awareness raising of both the public sector and SMEs will be necessary elements of the regional e-commerce strategy.

The e-commerce maturity framework introduced in the first part of this document (see Figure 1 on page 5) provides further help in structuring the different elements of the e-commerce strategy. It suggests that the starting point is at the physical and technical infrastructural level. Building on this, if the commensurate regulations and policies for e-commerce are not in place, e-commerce cannot strive. Therefore, an appropriate legal and regulatory framework must be laid down. But 'softer' infrastructure such as citizen awareness is also a requirement from an early stage.

Once this fundamental platform has been achieved, application and content services begin to proliferate. The availability of relevant services serves as a catalyst to widespread ICT/e-commerce adoption, and a formal ICT industry/sector begins to develop. Eventually, if appropriate policy actions continue to be pursued, the economy will become a net exporter of both knowledge and physical products, enabled by the advanced use of the tools and methods of e-commerce/e-business.

The e-commerce maturity framework thus presents a logical approach to tackle e-commerce issues in a strategic way. Logically the bottom level (infrastructure) is needed before implementation of the level above this (service) and so on.

Because CARIFORUM countries are at different stages of development the framework is designed such that individual territories can determine their current state and move to implement the appropriate strategies. Additionally, depending upon the level of development of a nation with regard to the framework certain issues can be tackled horizontally across the CARIFORUM region. Thus there is no fixed sequencing for the region or even individual countries but a general guideline may be taken from the maturity framework.

Given the findings of the analysis in Part A of this document and the breadth of issues that need to be addressed, eight major interventions are proposed. Most of these relate, for obvious reasons, to the bottom three levels, infrastructure, services, and industry formation. The proposed strategies are:

- Strategy Axis A: Improving the technical and legal infrastructure for e-commerce
  - 1. Strategy for telecommunications infrastructure/broadband
  - 2. Strategy for regional mobile broadband and m-payments
  - 3. Regional IXPs/interconnection strategy
  - 4. Strategy for common approach to e-commerce legislation in CARIFORUM
- Strategy Axis B: Supporting CARIFORUM SMEs to engage in e-commerce
  - 1. Strategy for an e-business regional support agenda
  - 2. A regional support programme for the services layer
  - 3. Strategy for regional ecommerce capacity building and e-commerce solutions project
  - 4. Strategy for software development training and universities

The strategies are described in the following two chapters. Following these, Chapter 4 proposes a regional governance structure for the further development of e-Commerce at the regional level.

Selected proposed interventions, which are both of strategic importance and are deemed to require external assistance, have been further developed into project documents which present the project objectives and results, suggested activities and the corresponding resource requirements. These are contained in Appendix C of this document.

# 2 STRATEGY AXIS A: IMPROVING THE INFRASTRUCTURE FOR E-COMMERCE

#### 2.1 Strategy A1: Telecommunications Infrastructure/Broadband Strategy

As the analysis in part A of this document has shown there is the need for CARIFORUM to now move beyond policies for basic connectivity and ICT readiness to encourage the rollout of affordable quality broadband networks to underpin the competitiveness and growth of ICTs. Where the need has been identified, States should develop universal access policies and programmes to expand broadband access to remote areas and identified underserved groups.

Internationally, the countries with the greatest broadband penetration with the lowest cost and highest speeds are those countries with expressed broadband policies with state participation in the delivery of broadband service. The principal goal of a broadband strategy is to increase the number of individuals and businesses that use broadband Internet in effective ways increase productivity, enhance quality of life, and benefit society.

An effective broadband strategy entails policies to both expand the supply of broadband infrastructure and increase the demand for broadband service. Demand side policies can spur adoption and use of broadband. Increased adoption can play an important role in spurring deployment, including deployment of next generation networks. If broadband infrastructure providers can sell their services to more customers without incurring additional fixed costs, this makes the financial risk-reward proposition of investing in unserved areas or upgraded networks more appealing. Reasons for non-adoption are threefold: affordability (e.g., the cost of broadband service, the cost of a computer), lack of digital literacy skills, and lack of awareness or misconceptions with respect to value.

In order to increase broadband penetration, the following regional actions should be undertaken:

- Key Action 1 Broadband Policy to increase access to and use of broadband
- Key Action 2 Universal access policies and programmes to expand broadband access
- Key action 3 Regulation for convergence

These regional activities need to be complemented by actions at the national in some CARIFORUM countries. Thus, telecommunications liberalization in Guyana, Suriname, Belize needs to be advanced. Furthermore, specific projects to deal with Haiti's special circumstances will be required.

The following sections present the main thrust of the proposed key actions. Further details can be found in the proposed project document in Appendix C.

# 2.1.1 Key Action 1: CARIFORUM Broadband Strategy

The key issues that need to be considered in the formulation of a broadband strategy including policies to increase the access to and use of broadband in CARIFORUM include:

- Who will pay for broadband roll-out (companies or governments, by reallocating universal access funds)? State participation including can take on several roles, from subsidizing roll out to actual involvement in deployment.
- Depending on terrain and demand, what technology should be used? Wireless, landline, etc.
- The order of roll-out (to urban/rural and rich/poor areas).
- The regulatory scheme for broadband (should the providers be regulated like telecom operators or like ISPs? How is VOIP treated?).

Complementary government actions that are needed to facilitate broadband roll-out also include:

- release of spectrum for wireless broadband;
- facilitating permits to lay cable;
- allowing telephone companies to provide broadband over existing cable without unnecessary regulation;
- coordinated development of government networks and ICT-enabled services, such as e-schools, e-health, e-procurement, etc., which can help spur demand and facilitate more efficient network deployment.

Broadband policies must be based upon careful consideration of the market conditions and economic realities of each country and region, and must adapt to the learning curve as well as technical and financial resources available. Some key steps that policymakers should follow are:

International comparison: In developing the details of the broadband strategy, the threads of broadband policies in the U.S., EU and elsewhere should be examined to determine how they apply to the Caribbean situations. For example, several countries worldwide have formulated specific programmes to increase both access to and supply of broadband. These programmes include:

- a) Governmental Support innovative pricing plans by ISPs.
- b) Allow persons on low income user schemes/lifeline to use the "lifeline" for broadband
- c) Promote schemes to help defray the costs of low-income families owning a computer.
- d) Funding of digital literacy programs.
- e) Creation of a digital literacy and broadband adoption clearinghouse.
- f) Passing along cost savings to citizens that use e-government services.

An exploration of the suitability of such (or other) programmes in CARIFORUM States will be useful, taking account of differing market, political, and economic conditions in each case.

<u>Consensus-building</u>: Mobilizing a political and social consensus behind broadband deployment is a critical task. In-country workshops on how broadband will enhance social cohesiveness, promote economic development (especially of SMEs), be used for educational and health-related purposes, etc., would be important to building that consensus. Focusing on demand-side stimulation is an important aspect of this approach, including bringing representatives of both consumers and small businesses, which may have specific needs and concerns for broadband capability, into the policy deliberation process.

# 2.1.2 Key Action 2: Universal access policies and programmes to expand broadband access

Most CARIFORUM States have already achieved high levels of telephone access which has resulted in part from competitive pressures in the provision of both fixed and mobile telephone service. However in some States, notably Suriname, Belize, Guyana and Haiti, the overall penetration is not high and coverage of mobile networks in rural areas is also not very extensive. In States where penetration is high, increasing investment in broadband networks is taking place, but most of this investment tends to focus on the urban areas.

As next-generation broadband networks become increasingly important for the needs of modern economies, and as the information requirements of social and economic activities increase, the importance of broadband connectivity for the growth and development agenda is expanding. In CARIFORUM States, there is a risk of increasing the "digital divide" between rural and urban areas. At the same time, governments are increasingly looking at ways, enabled by broadband, to find more cost-effective ways of delivering government services to rural and remote areas.

The preparation of a rural broadband development strategy will involve the following major activities:

- Taking stock of the deployment of broadband networks in rural areas, including access by priority groups such as health centres and schools;
- Identifying relevant examples of approaches to rural broadband deployment and access from international experience, and
- Developing concepts for programming and/or policy initiatives for CARIFORUM States.

Specifically, the role of Universal Access policy, and UA/US Fund mechanisms, should be central to developing a broadband strategy that reaches out to rural areas and populations. UA/US Funds can provide critical seed money to network providers, especially new technology options such as WiMax or VSAT, in addition to extending 3G mobile wireless and fixed line/fiber optic networks where economically feasible.

Targets of UA/US Fund support should include schools and community centres, where broadband Internet access points, including public telecentres, can be established to introduce local users to the advantages of broadband service, and help stimulate demand.

Such programs can be co-funded by public Ministries such as Education, Health, and local governments, which may take advantage of the facilities to deliver more cost-effective services to end users. UA/US Funds can then be leveraged to help provide local entrepreneurial opportunities in rural areas, for Internet Cafes, small businesses, and other uses of technology. The Funds and supporting programs must take account of the need for capacity building and ongoing public support to ensure sustainability of these services, and promote long-term market development.

It should be noted that the World Bank is in the process of creating a Broadband Strategies Toolkit for developing countries in three phases from 2010-2012. The first Phase, due in April 2011, will involve the creation of a Broadband Strategies Handbook and the first three modules of the Toolkit. The Handbook will comprise extended summaries of all seven planned modules. This Handbook will also lay the groundwork for the full Broadband Strategies Toolkit and will provide an important resource to developing country regulators and policymakers in planning their own national strategies.

# 2.1.3 Key Action 3: Regulation for convergence

Convergence is occurring as a result of the migration to Internet Protocol technology by a range of sectors including telecommunications, broadcasting which now streams programming, cable companies, and terminal equipment manufacturers. This migration is facilitated by and further promotes in a virtuous circle the wide availability of broadband internet service. At the same time demand is further created as business models are developed that exploit the possibilities created by convergence and the increasing availability of broadband. There is now a multitude of convergence including service provider convergence where service providers are able to deliver a multiplicity of services which were formerly unrelated, terminal equipment convergence where terminal equipment can now deliver a range of services including telephony, media and computing; convergence in modes of delivery as providers adopt IP as the platform for their services; and market related convergence as formerly distinct markets are put into direct competition.

The migration to broadband and the various types of convergence that it facilitates has posed a challenge to traditional regulatory systems designed for the analogue world where broadcasting, telecommunications and ICT operated within their well-defined silos and which operated using dedicated delivery mechanisms. Regulators are now being given the task of regulating an environment where convergence is increasingly becoming the order of the day and where the broadcasting and telecommunications industries are able to deliver identical services. A number of models have been developed to regulate this environment.

It is acknowledged that Malaysia has a regulatory system that has gone furthest in accommodating this environment and in the promotion of convergence. The regulatory framework that the Malaysians have developed recognises four distinct markets for which there are four types of licenses, namely Network Facility Providers, Network Service Providers, Application Service Providers, Content Application Service Providers. These licences take the form of class licenses with standardised terms, conditions and obligations.

The regulatory framework developed by the European Union, as set out in the European Commission's Authorisation Directive, specifies a move to general authorisations, general conditions, simplified procedures for market entry and reduced fees. It should be noted that the issues inherent in telecommunications persist in a converged environment. Thus the concerns regarding cross-subsidisation of services, maintenance of networks, cost-based regulation, interconnection, universal service and numbering continue with regulatory systems designed with convergence in mind.

Regulation in a converged environment means that one needs to explore which services are equivalent and, in a thorough way that does not give undue deference to legacy regulation, which types of obligations which be imposed on which service providers. That could involve a review of existing regulations, consultations with local players, an examination of how "technological neutrality" is treated in other countries, and so forth. With respect to "broadband," of course, there are several different technologies, including land line telephone, wireless, cable and satellite. The differences, if any, there are among them must also be explored.

Technological neutrality is a complex subject. One doesn't mean, for example, that a digital broadcaster (or cablecaster or satellite operator) is treated identically to a public telecommunications operator or, for that matter, an ISP, just because all content is indistinguishable at the bit level. An over-the-air broadcaster is subject to its content being regulated--because it acts to select and broadcast content. Pay services may have different (and lesser?) obligations than over the air broadcasters. And, Public Telecommunications Operators might have obligations to respond to emergency calls or to provide universal access that an ISP, including a VOIP operator, might not have. Similarly, an operator that owns a facility, and delivers bits over that facility, might have different obligations (e.g., with respect to physical infrastructure installation and repair) than an operator that delivers bits over a leased network.

With respect to equivalent treatment of services, then, the question is whether the services themselves are equivalent. For instance, a pay television service is probably not equivalent to a free over the air broadcast service. Conversely, is a VOIP service equivalent to POTS and, if so, should the level of regulation be ratcheted up (so that VOIP operators are "regulated" like PTOs) or ratcheted down (so that PTOs no longer have universal service or emergency service obligations)?

The regulatory framework of any country can be evaluated against the current best practices that have been adopted within the respective sector. The actual circumstances of the country, including population size, area of the country, population distribution, country income and level of development and development of the sector in question will have to be examined. Also relevant, although difficult to document, is the capacity, in terms of intellectual capacity and skill sets, that the regulator possesses. The national regulators need to be staffed with competent persons who are knowledgeable of all the major trends regarding the various sectors that it regulates. These persons should also understand the stage of development of these sectors in their jurisdiction and the relevance of international trends and the theories most current to local circumstances.

#### 2.1.4 Complementary national activities

Haiti has its own unique set of considerations and that must be first dealt with in project tailored to deal with the specific environment.

As noted, Guyana, Suriname and Belize have yet to make telecommunications liberalization a reality.

Some developing countries, such as Guyana and Suriname, see their settlement rates as an important part of the revenue through the operator's profitability. In these countries the telecommunications sector is characterised by distorted pricing structures, ineffective policies, and a monopoly service provider, at least partially state owned. While operators in most countries acknowledge that the current system is unsustainable, some developing countries have resisted the pressures for radical change, arguing that it will cause an unbearably large drop in their operators' profitability. Some countries use the international revenues to subsidise their state owned operators or to supplement general revenues. This is unfortunate, as in these countries the net result is that the telecommunications operators are being "subsidised" at the cost of the inhibited development of other sectors in the economy, and indeed the development and innovation specifically because of the feared loss of revenue from international settlement rates.

The challenges posed to the accounting rates system offer only a short-term pressure to the revenues of telecommunications operators, but ultimately offer potential benefit to consumers and the countries' development. In the future, public pressure for reform will increase as the cost of transmitting voice data and images continues to be reduced and depends less every day on distance. In most developing countries, after a transition period of a few years, the loss to the former monopoly's revenue expected to be more than offset by higher traffic volume and efficiency gains generated by new entrants.

# 2.2 Strategy A2: Strategy for Regional Mobile Broadband and M-Payments

Given the high penetration rate of mobile phones throughout the Caribbean region, mcommerce has the potential to be one of the pillars of e-commerce in CARIFORUM (Box 11). Nevertheless, in order to unleash its potential, support to the development of regional mobile broadband, as well as in the development of an m-payments system will be required. This is the subject of the proposed second strategy.

#### Box 11: m-commerce

M-Commerce has been defined as the "use of handheld wireless devices to communicate, interact, and transact via high-speed connection to the Internet."<sup>90</sup>

<sup>&</sup>lt;sup>90</sup> Constantinos Coursaris, Khaled Hassanein & Milena, m-Commerce in Canada: An Interaction Framework for Wireless Privacy, <u>http://www.business.mcmaster.ca/IS/head/Articles/m-Commerce%20in%20Canada-</u> <u>%20An%20Interaction%20Framework%20for%20Wireless%20Privacy.pdf</u>

M-commerce should not only be seen a subset of e-commerce but also as that natural extension of ecommerce that arises from the employment of wireless networks to transmit data between mobile and other devices without needing a wired connection. We could say that m-Commerce acts as another channel through which value can be added to e-Commerce processes. As such, growth in e-Commerce is likely to support further growth in m-Commerce as both are able to leverage off the same infrastructures (Coursaris, Hassanein and Head).

Conducting commerce over wireless networks or mobile devices is likely to increase in conjunction with the increase in uptake of e-Commerce by consumers, and the increased availability and affordability of mobile devices that can access the Internet.

A document prepared by the Consumer Affairs Victoria, Department of Justice<sup>91</sup> states that: Mobile phones incorporate ideal characteristics for performing electronic transactions, and have been identified as the future 'electronic wallet'. The SIM card, which is the identification card in the phone, is one of the only examples of the much-touted 'smart card' and can carry information or store value and provide secure authorisation and identification.

The above statement presents a possibility for dealing with many of the issues that have to do with ecommerce in general, especially those that deal with authentication and trust. For these reasons it is clear that any CARIFORUM policy framework for e-Commerce should also speak to the development of the m-commerce component as well.

It is widely accepted that the factors favouring the development of Robust m-Commerce activity<sup>92</sup> are:

- High-speed/wide-bandwidth Internet connection available to most citizens of the nation at an affordable rate.
- Saturated mobile phone ownership and extremely frequent usage of mobile phones throughout the entire citizenry of the nation.
- Payment system that connects the utility of the mobile phone and the Internet together for the whole nation.

In order to facilitate m-commerce, the following two regional key actions are proposed:

- Key Action: 1 Mobile Broadband Policy Increasing availability /access and uptake of mobile broadband
- Key Action: 2 Regional m-Payments Policy/Strategy The development of secure, regionally accessible and service Provider neutral m-payments system/s.

#### 2.2.1 Key Action 1: Mobile Broadband Policy

Regional penetration of high speed internet, whether delivered through fixed line or wirelessly is still very low averaging a little above 10 per cent in most territories. While mobile penetration is very high, the cost of accessing the Internet through mobile platform is still seen as prohibitive by consumers. Therefore as noted in other sections of this work that the development of high speed wide access (including mobile internet) internet access needs to be made a priority for the development of a robust e-commerce environment as a whole.

<sup>&</sup>lt;sup>91</sup> Consumer Affairs Victoria, Department of Justice. June 2002, <u>http://www.consumer.vic.gov.au/-</u> CA256902000FE154/Lookup/CAV Publications Reports and Guidelines/\$file/mcommerce.pdf

<sup>&</sup>lt;sup>92</sup> Factors that Affect Successful Mobile Commerce, <u>http://www.iacis.org/iis/2003\_iis/PDFfiles/LeeLee.pdf</u>

Penetration rates in the region have already been improving. There is a very high penetration rate for mobile phones and prepaid voice services that in many cases surpasses 100%. While the uptake of mobile internet services among mobile subscribers is relatively low, it is widely known that most the mobile handsets available have capabilities that will allow for access to mobile internet browsing and other services. Thus the region's mobile market is rapidly approaching saturation and there is extremely frequent usage of mobile phones. This situation mirrors that of many developing nations where m-commerce activity has taken off. Currently mobile phones are used mainly for voice and SMS communications.

The implementation of a mobile broadband policy/strategy as part and parcel of any regional broadband initiatives should be made a regional priority. This policy/strategy should look at:

- Developing a seamless access environment for both fixed networks and wireless networks that promotes convergence of fixed networks and mobile networks and the upgrading of IP infrastructure.
- Reducing the cost barriers to businesses and individual mobile device owners.
- Stimulating uptake of mobile broadband services.

# 2.2.2 Key Action 2: Regional m-Payments Policy/Strategy

The development of secure, regionally accessible and service provider neutral m-payments system/s seems to be the main stumbling block for the development of m-commerce and for e-commerce as a whole. Current data does not bear out that there are m-payments systems that are widely available or used. However, it must be noted that prepaid subscribers accounted for approximately 90 per cent share of the mobile market in some territories. The business model used by mobile service providers that allows their subscribers to add value to their accounts or top-up can be extended in the direction of allowing subscribers to transfer value form one person to another.

What needs to happen in order to develop Regional m-commerce is for the deployment of widely accessible, secure and easy to use m-payments systems that can be brought to bear on conducting business transactions regardless of the service provider that a customer subscribes to.

A Regional policy/strategy that moves telecoms, governments, regional banking, local and foreign payments service providers to develop a robust e-payments /m-payments service should be put in place. This process should look, first, at the implementation of an efficient and easily accessible e-payments system for SMEs to make and accept payments. Second, the creation of an internationally compatible and technology neutral legal and regulatory framework needs to be addressed that accommodates rules for commercial transactions:

- A conducive system for the protection of intellectual property rights in cyberspace;
- Security, interoperability and interconnection of information systems;
- Issues relevant to privacy, such as protection for personal information and confidentiality of consumer related matters;
- Financial Issues/Payment Systems (incl. authentication and certification infrastructures),
- Benchmarking, International and Regional Harmonisation,
- Privacy and Consumer Protection, and
- Industry Cluster Groups.

#### 2.3 Strategy A3: Regional IXP/Interconnection Strategy

There needs to be a policy/strategy that speaks to the development of an efficient CARIFORUM internet architecture. As more SMEs move to using e-Commerce business models there will be a corresponding increase in online content and a resulting increase in bandwidth use and data hosting needs.

The optimisation of domestic internet traffic routing by establishing Regional Internet Exchange Points (IXPs) and the development of a significant data hosting capacity within the region is key to building the connectivity and storage infrastructures that would facilitate Regional e-commerce and e-government. This will result in the reduction in cost and latency associated with using the internet and will encourage a number of new business opportunities and industries which require fast and secure access to data and improved traffic transfer between domestic networks.

This strategy deals with the creation of a telecommunications infrastructural environment that will allow for the implementation of enhanced hosting and e-commerce infrastructures within CARIFORUM.

The expected results of this strategy will be:

- An internet architecture within the region that will enable/encourage least-costrouting of national and regional traffic, provide increased resiliency in the instances of extra-regional communication failures and cyber-attacks. It will also decrease internet latency – thus improving the end-user experience of ICT-based services across the region.
- 2. A regional telecommunication infrastructural environment that will encourage the development of domestic "killer applications" such as those related to content and business services: Regional social networking, video and portal applications are likely to emerge but more particularly, domestically domiciled business services such as e-Business, e-Commerce and Electronic Payment services will dramatically increase regional internet usefulness, relevance and penetration. Such developments will liberate the internet paradigm of utilisation in the Caribbean from its current restriction to mainly research and entertainment usage, catapulting it indelibly into the day-to-day economic fabric of the lives of Caribbean citizens.
- 3. The further evolution of Caribbean-based networks to "trans-shipment" facilities North and South America would create opportunities for additional revenue streams for the regional carriers, due to the additional North-South traffic on their networks. Further, such network architecture would further encourage the regional citing of content for application service providers with clientele on both the North and South American continents.

As has been described in Part A of this document, there are a number of submarine fibre facilities which traverse the Caribbean basin, landing on multiple islands before finally culminating in Miami. These existing submarine facilities provide the opportunity for:

- Direct connection between users on different islands through intra-National and/ or intra-Regional points of inter-connectivity between different fibre cables traversing the Region – hence reducing the need to access facilities in Miami to facilitate intra-regional movement of traffic; and extending these facilities south beyond the Caribbean to Latin America – making the Caribbean networks preferred "trans-shipment" routes for bits and bytes moving from North to South America.
- The development of national, if not regional, IXPs which allow the direct interconnection of ISPs within the region, without the use of the North American transit providers. The establishment of at least one IXP will also increase regional ICT network robustness and security by encouraging the regional deployment of complimentary internet infrastructures such as:
  - The expansion of domestic hosting facilities to support the domestic content and application development industries;
  - Internet Root Server(s) to facilitate the mirroring of international content in the region;
  - o Internet time servers; and
  - Regional e-commerce infrastructures to promote increased penetration of domestic economies in the utilisation of the methods of e-trade. This kind of infrastructure located within the Region will encourage least-cost-routing of National and Regional traffic, provide increased resiliency in the instances of extra-regional communication failures and cyber-attacks. It will also decrease internet latency, thus improving the end-user experience of ICT-based services across the Region.

The activities required for the establishment of a regional routing infrastructure are as follows:

- Commission a study to determine the optimal number of national and regional internet exchange points to be deployed in the region, based on traffic generation profiles, existing submarine cable landings, and-epistence of necessary/complementary support infrastructure, thus determining the appropriate architecture of the regional routing system.
- Develop an appropriate business model(s) and framework(s) of administration, including establishing appropriate contracts, agreements and memoranda of understanding, and/ or rules of engagement/ operation which may be needed to engage county, national and/ or regional telecommunications providers in such a way as to support the establishment and continued operation of the IXP-based routing system. This will inclu de the determination of:
  - the infrastructure requirements for the establishment of the IXP's to meet business requirements
  - the appropriate model of participation, identifying the nature of membership, the cost of participation and exclusion, if any, that may apply;
  - the specific implementation frameworks which will guide the selection of specific partners in the provision of hosting and other support facilities as well as accessibility by membership

- the preferred model of governance, including determining the mutually agreed to administrator, that will be undertaken, with a view to minimizing recurrent costs associated with the operation of the core functional elements of the Regional Routing system
- Focused engagements with regulators, trade organisations and other key stakeholders across the region to overcome any challenges with particular concern of trans-regional regulatory oversight that may arise. In that regard, the proposed action shall also provide the necessary training, capacity building, legal and policy support to ensure that all considerations with regard to long term management of operation within the regulatory context is appropriately elaborated upon. This stage will include:
  - o legal establishment of business parameters and operation of the administrator;
  - establishment of frameworks to enshrine obligations of all parties in the operational of the core functional elements
- Manage the initial and ongoing engagements/ discussions/ negotiations with identified key stakeholders to ensure that the initiative is mobilized, with the participation of relevant parties (incl. Governments and regulators) to ensure broad acceptance by participants in the sector. This will incorporate and include establishing:
  - The governance team, its offices, systems and facilities;
  - The Exchange Points, including ensuring connectivity and managing start up;
  - Coordinating routing adjustments among stakeholders/members.

# 2.4 Strategy A4: Harmonisation of Legal Infrastructure for E-Commerce in CARIFORUM

As in any common approach to a legislative or regulatory regime, laws for e-commerce need not be identical, but the basic principles and modes of implementation need to be harmonised. A roadmap for a common legal and regulatory approach to e-commerce in CARIFORUM involves the following three steps:

- Step 1: Identification of areas for legislation and regulatory frameworks
- Step 2: Preparation of model laws
- Step 3: Harmonisation of existing laws to model laws by reviewing and amending existing laws and implementing model laws to close the gaps.

In carrying out these actions one would be able to build on the work already conducted in the HIPCAR project studies.<sup>93</sup> The proposed work plan for developing a common approach to e-commerce regimes in CARIFORUM is therefore as follows:

1) Building on the work of the HIPCAR project (particularly with respect to harmonized policy guidelines to be developed in Phase II), identify areas for legislation and regulatory frameworks.

<sup>&</sup>lt;sup>93</sup> The HIPCAR project "Enhancing Competitiveness in the Caribbean through the Harmonization of ICT Policies, Legislation and Regulatory Procedures" is part of a global ITU/EC project encompassing all ACP countries; see <a href="http://www.itu.int/ITU-D/projects/ITU\_EC\_ACP/hipcar/index.html">http://www.itu.int/ITU-D/projects/ITU\_EC\_ACP/hipcar/index.html</a>.

- 2) Draft Model laws in the identified areas.
- 3) Review existing laws and Bills against the Model Laws and make recommendations for harmonization and approximation to model laws.
- 4) Identify gaps in legislations in various countries and enact the relevant model laws where those gaps exist.

Notwithstanding the work to be done in the first phase of the work plan, certain key provisions to be included in e-commerce legislation will conform the nucleus of e-commerce legislation and can already be listed here. Hence, any legal and regulatory framework must include provisions to address the following:

- Legal support for e-commerce transactions;
- Strong legal protection for processing and storage of data;
- Consumer protection and privacy protection;
- The prosecution of cyber-crimes;
- Authorizing of digital signatures;
- Electronic payment systems including regulations;
- The enabling of public key infrastructures; and
- The protection of intellectual property rights.

Appendix D provides further details about the issues to be addressed in each of these areas.

Furthermore, the harmonised CARIFORUM e-commerce legislation to be developed will have to be based on some basic guidelines and principles:

- Electronic transactions and contracts should be given the same protections as paper transactions under the law;
- Any governing legislation should be technologically neutral to accommodate future technological developments and capacities.

#### 3 STRATEGY AXIS B: SUPPORTING CARIFORUM SMES TO ENGAGE IN E-COMMERCE

#### 3.1 Strategy B1: e-Business Regional Support Agenda

The development of e-business services – i.e. e-government services for business and ecommerce – and the creation of a legal and infrastructural environment conducive to their development, is a matter for each government in CARIFORUM. By nature, these are designed and developed for a unique environment in terms of legal structures, infrastructural constraints, priorities and sequencing, administration and funding.

However, a shared regional agenda, with highest-level political commitment and appropriate national level organisation, can significantly support and reinforce national efforts, through developing agreed benchmarks and targets, exchange of knowledge and resources, sharing of best practice, collaboration on development costs where appropriate, and improving

cross-border SME service provision and interoperability. This agenda will lead to friendly competition between the CARIFORUM countries in relation to achieving the targets.<sup>94</sup>

The objective of the Regional Agenda is to build a momentum at national level for the development of e-Business services (including e-government services for business and e-commerce actions) though a regional inter-ministerial commitment to pursue an agreed e-Business Agenda, including targets, that practical benefits generate benefits through the development of a benchmarking exercise between CARIFORUM countries of e-business services, sharing best practice and experiences; pooling resources for development of service platforms; enabling regional collaboration activities; and encouraging a healthy sense of friendly competition between e-leaders involved in implementing these services.

The proposed actions in relation the Regional Agenda are as follows:

- Form a dedicated regional e-Business Agenda Secretariat to take this forward under CARIFORUM, linked to national e-Business Units.
- Formulate Benchmarking Criteria for e-business services, including the legal and infrastructural foundations, e-government services for business and e-commerce requirements, as a means to compare and contrast progress in each of the CARIFORUM countries.
- Set common targets, agreed in the form of an Agenda at an Inter-Ministerial meeting, in relation to these benchmarks and targets, with a view to convergence over time. There may be a need for a number of different targets, for more and less advanced countries with regard to e-government services.<sup>95</sup> This would be updated periodically.
- Document regional best practice case studies, including not only high-quality provision of specific e-government services but also good practice in strategy development, effective methods of implementation (and gaining 'buy-in' within public administrations and ministries), effective public consultations, and monitoring and evaluation.
- Study visits and exchanges to deepen co-ordination and share expertise, including interregional expert services.
- Development of a database of expertise of service providers in the region with high level capacity in developing services.
- Potential collaborations in service development especially among smaller countries, to reduce software development and other costs. These could also identify joint funding opportunities.
- Regular monitoring and updating of benchmarks and targets, and period renewal of Internet-Ministerial commitments to the Agenda.

The proposed institutional structure is as follows: The **e-Services Board** will comprise of several members whose role will be to guide and direct the implementation of Government and National ICT policy/strategy through overseeing the work of the e-People's, e-Government and e-Business committees. This board will be headed by a Chairman whose mandate is to provide a Vision and strategic direction for the development and implementation of Government and National ICT Policy/strategy in a time-based manner.

<sup>&</sup>lt;sup>94</sup> The eSEE Agenda in the South Eastern European States offers a useful model for this. See http://www.eseeinitiative.org/

<sup>&</sup>lt;sup>95</sup> The EU has done considerable work in Benchmarking. See

http://ec.europa.eu/information\_society/eeurope/i2010/benchmarking/index\_en.htm#eEurope

Associated with the e-Services Board is an **e-Services Secretariat**. This capacity will be the engine for pushing forward any ICT/e-Business agenda and is a capacity that is separate but closely associated with the work of the e-Services Board. This entity will provide a level of permanence and stability to the process because of its function as a kind of institutional memory that persists regardless of the evolving mandate and personnel of the Executive Committees and e-Services board. This secretariat will provide:

- ICT Policy/Strategy and development and implementation Expertise.
- Knowledge and insight into national, regional and international legislation pertaining to and influencing ICTs, data security and e-Business/e-Commerce.
- Benchmarking, measurement and budget oversight.

Ministries/administrative bodies can adapt themselves to the proposed model. The current models are inefficient as they do possess the breadth and depth of expertise. As noted issues involving e-commerce usually go far beyond just SMEs and ICTs and many different players hold the keys not just one. The chances of success increase using this model.

Finally, it should be noted that the e-Services Board and Secretariat need not necessarily mean the creation of new institutions. Rather, existing institutions could assume these functions. During the definitional phase of the strategy, an institutional assessment should be undertaken with the aim of identifying the optimal institutional structure for the Regional Support Agenda.

#### 3.2 Strategy B2: A Regional Support Strategy for the Services Layer

The main focus of this strategy is to provide targeted and focused actions dedicated to encourage the emergence of e-commerce services. The emphasis is on enabling individual firms and consumers to engage in e-commerce.

The strategic approach is to work at several issues at once to create an atmosphere in which e-commerce can begin to take hold and to build a critical mass of content, of users and markets. There are a number of key actions:

- Key action 1: E-Commerce Strategy Development Toolkit for SMEs;
- Key action 2: Regional e-Payment Infrastructure;
- Key action 3: A Regional Tourism Sectoral e-Commerce Strategy;
- Key action 4: Study for an Automated Customs System;
- Key action 5: B2C Caribbean e-Commerce Portal.

#### 3.2.1 Key action 1: E-Commerce Strategy Development Toolkit for SMEs

The research has identified a lack of understanding of e-commerce among CARIFORUM SMEs as a major blockage to implementation of e-commerce. This points to a lack of materials that are readily accessible, easy to understand and useful in this domain. This key action will provide a number of software tools to SMEs to diagnose the benefits and needs

of engaging in e-commerce and develop a strategy tailored to the need of each SME, provide support resources and eventually develop a peer support network.

The specific objective of this key action is to assist SMEs in the development and implementation of individualised strategies for e-commerce. Thereby, it will extend the general familiarity and use of internet interactions among the public and businesses, by offering e-government content and services where clear benefits will accrue.

This key action comprises a set of hardcopy and online information and training packages, designed to introduce SMEs in the region to the basics of e-commerce, assessing the potential benefits to them, to developing a strategy for introducing e-commerce into their firms, to introductions to national expertise for implementation.

The main activities would include:

- 1. Formation of a Stakeholders Steering Committee under CARIFORUM, to oversee the project.
- 2. An introductory set of E-commerce Guides, covering the basic elements and issues arising. It would include examples in different relevant sectors, and would cover a full range of issues from benefits through to concerns about security, payment options, consumer legislation, eMarketing and so forth.
- 3. A Cost/Benefit diagnostic tool, to enable an SME to assess the approximate costs involved, the medium and long term savings, and the potential market growth that might be expected over different time periods, including export markets.
- 4. A Strategy Development tool that would take them through a step by step process of developing a strategy to implement e-commerce in their firm. At each step, resources and expert assistance (remote but also national consultants) would be available.
- 5. A database of approved expert resources, available nationally, that would enable them to implement the Strategy.

Additional elements could be considered, based on the progress and research, such as:

- 6. A Peer Support network, gradually built up over time, in which those SMEs already successfully implementing e-Commerce are enabled and resourced to assist others.
- 7. A partial subsidy/support for the cost of implementing e-Commerce, in direct grants or tax incentives.

The package would be developed centrally, and localised for each of the CARIFORUM countries as required. All the materials would be available on a dedicated Website, with key documents available also in hard copy. The above mentioned tools would, as appropriate, be software supported.

#### 3.2.2 Key action 2: Regional e-Payment Infrastructure

In respect of e-commerce, Article 52 of the Revised Treaty of Chaguaramas<sup>96</sup> states:

<sup>&</sup>lt;sup>96</sup> Revised Treaty of Chaguaramas 2002, ARTICLE 52 - Implementation of Community Industrial Policy; available from: <u>http://www.caricom.org/jsp/community/revised\_treaty-text.pdf</u>.

"The Member States undertake to establish and maintain appropriate macro-economic policies supportive of efficient production in the Community. In addition, they shall undertake to put in place arrangements for, inter-alia:

- (a) effective payment mechanisms;
- (b) the avoidance of double taxation;
- (c) harmonised legislation in relevant areas;
- (d) the elimination of bureaucratic impediments to deployment of investments in industrial enterprises;
- (e) the improvement of infrastructure and co-operation in the areas of air and maritime transport;
- (f) communications systems."

Further, CARIFORUM governments have expressed their intention to create service-based economies and several countries have begun developing and implementing national ICT plans and policies to leverage available technologies. These actions have the ability to move toward the harmonisation of integrated Caribbean economies.

A critical success factor to any e-commerce initiative is the development of an e-payment infrastructure that supports the various electronic payment methods. The development of a Caribbean Automated Clearing House (ACH) to facilitate electronic funds transfer (EFT) can be seen as a foundation step on which further e-payments infrastructure arrangements can be developed for the region.

The specific objective of this key action is the development of an e-payment infrastructure, and all accompanying activities that support the various electronic payment methods across the entire CARIFORUM area. The expected result is to develop a Regional E-Payment Facility that will overcome a major bottleneck for international (within and outside the region) user friendly electronic payment with a number of options.

The activities for developing the e-payment infrastructure would include:

- 1. Formation of a Stakeholders Steering Committee under CARIFORUM, to oversee and monitor the activities.
- 2. E-Payment Infrastructure: The development of a Caribbean Automated Clearing House (ACH) to facilitate electronic funds transfer (EFT) can be seen as a foundation step on which further e-payments infrastructure arrangements can be developed for the region. An ACH Network is a processing and delivery system that will provide for the distribution and settlement of electronic credits and debits among Caribbean financial institutions. Through a regional telecommunications network, each ACH operator will be able to communicate with other ACH operators to exchange entries quickly and efficiently, regardless of geographic distances involved. The ACH Network will be governed by operating rules and guidelines, which will be developed by the actual users of the system, and is administered through a series of agreements among regional financial institutions, customers, trading partners, and local ACH operators.

There are several ACH networks within several Caribbean Territories such as the Bahamas, the Eastern Caribbean and Trinidad & Tobago. The models employed in their implementation and governance/regulation should be expanded to the Caribbean region.

3. Cross border Taxation and Dispute Resolution: With the understanding that, as more businesses and other activities migrate to the internet, governments must work together

to implement policies to eliminate double taxation on goods bought and sold within CARIFORUM using e-commerce.

Also of critical importance is the establishment of mechanisms to resolve disputes that may that arise as a result of an e-transaction. This issue and dispute resolution infrastructure should be tabled as a matter for consideration of the Caribbean Court of Justice (CCJ) which is the regional body for the resolution of Trade disputes.

- 4. Privacy and Security: Privacy concerns must be addressed if CARIFORUM governments are going to persuade citizens and businesses to conduct electronic commerce transactions. In addition to implementing security technologies like encryption and digital signature (PKI -- public key infrastructure), there are also important public policy issues to resolve. Caribbean governments may need to revisit and, if necessary, revise their approach to privacy from two perspectives: as a sovereign entity and as a functional entity, under the following headings:
  - Minimum standards for electronic signatures;
  - Reliability and integrity of electronic signatures;
  - Establishing of CARIFORUM Certification Service Providers;
  - Establishing of a CARIFORUM Registry of certification service providers;
  - Establishing of CARIFORUM Certification Authority(ies)

A set of fair information reporting practices should also be established with important safeguard principles such as:

- Informed consent at the point of collection;
- Limiting collection to required elements;
- Allowing subjects to view and correct information; and
- Obtaining consent for any additional use of information.

#### 3.2.3 Key action 3: A Regional Tourism Sectoral e-Commerce Strategy

The CARIFORUM/EU EPA has identified SMEs in the tourism sector as potentially gaining significant benefits from the implementation of internet marketing strategies and e-commerce activities, and an area for inter-regional cooperation. An overall sectoral approach to supporting e-commerce, as distinct from an approach that targets SMEs in general, has been effective elsewhere by concentrating the resources on sectors that can gain the most and ensuring that each link in the chain is supported. A sectoral approach also offers an example of best practice to other areas that may be then encouraged to become involved.

A sectoral e-commerce approach goes well beyond simply making tourism services available line as a convenient way for customers to view and purchase existing tourism products, though that is one aspect of it. E-Commerce can also enable SMEs identify and reach new markets; facilitate new products through for instance remote itinerary planning; improve the quality of service in the tourism product itself; establish and maintain an interactive relationship with the customers; reduce operating costs; reinforce regional branding; and support new business partnership. The specific objective of this key action is to design and implement a region-wide Sectoral ecommerce Strategy in Tourism, and thereby to increase the number and quality of tourism visitors to the region. The expected result is to support a high-profile 'e-Commerce Champion' sector that can specifically benefit from an extensive e-commerce effort, of relevance to all CARIFORUM countries, and support it as a visible and leading exponent of e-Commerce.

This involves a macro-level analysis of the tourism sector's dynamics in relation to ecommerce, including the intra-sector and extra-sectoral supply chains, and the current level of uptake and potential for growth. This is followed by selection of key firms and micro-level scrutiny of firms exploring the business case for e-commence, and identifying barriers and possibilities. A comprehensive approach is then taken to building an e-commerce dynamic.

The proposed activities are as follows:

- 1. Formation of a Stakeholders Steering Committee under CARIFORUM, to oversee the activities.
- 2. A detailed Tourism e-Commerce Strategy, developed with technical assistance in close co-operation with regional and national private sector tourism interests, including an analysis of the supply chain, current and potential markets, e-commerce requirements, and so forth.
- 3. The identification of a number of high-quality tourism products, spread throughout the region, and their potential for collective branding.
- 4. The identification of a number of partner SMEs willing to engage in e-commerce.
- 5. The creation of a shared Web-based B-C facility or 'Portal' for marketing and selling the products.
- 6. Supply of technical/grant assistance to implement the strategy among an initial key set of SMEs.

#### 3.2.4 Key action 4: Study for an Automated Customs System

Fully automating customs and duties systems, speeding up, simplifying transactions and reducing costs for importers and exporters, is often a critical supporting factor for engaging in international e-commerce. A fully automated system reduces or eliminates paperwork, saves significant time and effort, and enhances reliability of service. It also enables the rapid and efficient collection of duties, and taxes for e-commerce, and ongoing clearance for exports and imports.

The international standard in this area is ASYCUDA (Automated System for Customs Data), developed by UNCTAD and implemented in over 80 countries, including in some CARIFORUM States<sup>97</sup>. ASYCUDA is implemented in components, can be partial or complete, and can link directly to e-government services. The implementation of ASYCUDA in CARIFORUM countries is uneven both in relation to overall levels of deployment and in relation to the extent to which they are geared towards the specific needs of e-commerce. Regionally, the Customs Automated Services (CASE) is a Caribbean developed system

<sup>&</sup>lt;sup>97</sup> See a Case Study of implementation in St Lucia at http://www.asycuda.org/CaseStLucia.pdf

(developed in Jamaica) which is E-commerce ready and heavily used in G2B automated customs processing and payments in Jamaica and Antigua. The transfer of this system to Antigua was done via OAS and ICA and Gateway Developing Foundation, and other International donors. The intention was to transfer the system to the other OECS countries.

Implementing or enhancing a system such as ASYCUDA or CASE in a coordinated and standard manner could significantly facilitate rapid and smooth e-commerce within the region, but also externally with the European Union, the US and elsewhere. Considerable savings may also be generated through sharing the software, training and other costs involved.

The specific objective of this key action is to determine the extent and specific nature of the implementation of ASYCUDA/CASE in the CARIFORUM countries as it applies to e-commerce, to assess the options, costs and benefits of enhancing these, and to make recommendations to CARIFORUM countries.

The study to be prepared under this activity will look at:

- How ASYCUDA/CASE and related systems are utilised in general in the context of e-Commerce, the benefits of their use and the costs in their absence.
- The extent and nature of implementation of such systems in CARIFORUM countries.
- The benefits that would be associated with a more complete implementation, accruing to countries at different levels of development of e-commerce.
- The costs of implementation in each country.

#### 3.2.5 Key action 5: B2C Caribbean e-Commerce Portal

A business-to-customer e-commerce portal allows a group of producers in similar or overlapping sectors to market their goods on a single platform, an international online 'shop window'. Where it may not be viable for each SME to develop such a facility, grouping together can reduce costs of both marketing and transport, enable access to specialist expertise and services, build a common brand, and support market analysis and outreach. Examples might include skilled artisanal products such as jewellery, textiles or ceramics, which have the advantage of being relatively small, non-perishable and of high value.

The specific objective of this key action is to build a common e-commerce platform in one or more related products to enable international sales of high quality Caribbean goods under a single brand. A medium term aim is for it to become an SME-owned cooperative enterprise, sustained through a proportion of sales revenue.

This involves the construction of an SME e-Commerce Portal in a selected sector, or set of sectors, that initially takes leading SMEs with existing proven ability to produce quality products, and showcases their goods. It will also comprise a marketing campaign, offer easy and secure payment options, and safe delivery options. As its capacity to secure sales rise, it will open out to other SMEs who can demonstrate they produce good quality and can deliver reliably. Initially funded with a grant, the goal would be to establish a sustainable enterprise collectively owned by the users.

The proposed activities for the establishment of the portal are:

- 1. Initial assessment of potential producers, based on known high quality SMEs across CARIFORUM countries, and identification of potential product sectors and SMEs in each.
- 2. International assessment of potential markets for these products.
- 3. Cost-benefit analysis of building the Portal, based on the selected sectors and SMEs.
- 4. Development of brand and market targeting tools.
- 5. Development of Portal, including payment, transportation and other agreement.
- 6. Launch of Portal.
- 7. Review of progress and sustainability, after an agreed period.

# 3.3 Strategy B3: Regional Ecommerce Capacity Building and E-commerce Solutions Strategy

The results of the SME survey and consultation process held for the preparation of this document raised serious concerns about the level of knowledge and awareness of e-commerce in general and the lack of availability of e-commerce solutions. The research clearly points to the need for major efforts in terms of public awareness and education programs aimed at SMEs.

In this regard, a long-term, sustained approach, using seminars and workshops customized with local experts' content and participation, where possible is suggested. There should be local logistic support for immediate and long-term sustained education and public awareness campaigns about the importance of e-commerce.

In addition to education and public awareness, one must address the issue of the building blocks of e-commerce in general, and develop or suggest ways to lower the barriers to entry. Current barriers to entry of e-commerce include website hosting costs, website development costs and lack of trust in the security of the system.

The research has shown that a large number of the SMEs which have a website have a basic website giving some information only. Interventions are required to bring more basic websites into the full realm of transacting business online. To bring the masses of SMEss up the beginner's level of e-commerce, one needs to get them to the stage of actually having an active website on the Internet, preferably with a local, unique domain name. In an effort to assist in the development of local branded e-commerce, one needs to work on the development of the local registries and get them to provide local incentives for using local domain names with the aim to bring costs to local SMEs down to less than US \$20 per domain name per year. The development of a website hosting and development package that costs around US \$10-20 / month.

The objective of this strategy is to bring CARIFORUM SMEs to at least the beginner's level of e-commerce where actual transactions are conducted online.

In order to achieve this, the following six key actions are proposed:

Key action 1: Public Awareness program

- Key action 2: Local domain name "buy local" campaign and registry outreach
- Key action 3: Building Public Key Infrastructure (PKI) infrastructure within CARIFORUM
- Key action 4: Technical Training in Web/Internet Technologies
- Key action 5: E-Commerce solutions development/promotion
- Key action 6: Country Specific and Regional Content Aggregators

#### 3.3.1 <u>Key action 1: Education and Public Awareness Programs for CARIFORUM</u> <u>States</u>

The results of the survey and research suggest that there is a serious lack of understanding and awareness of E-Commerce in general, and the various building blocks of E-Commerce in particular. In light of these findings it is imperative that public awareness and education campaigns be carried out to address this situation.

The specific objective of this key action is to create a culture of E-Commerce within CARIFORUM, with the specific goal of assisting more SMEs to integrate E-Commerce into their businesses.

#### 3.3.2 <u>Key action 2: Develop local Internet registries and make set up costs for</u> <u>local SMEs affordable</u>

The local country code top-level domain (ccTLD) registries were originally designed to ensure that each country/region had unique representation within the global domain name space. The generic registries (gTLDs) were designed for all people to have representation within a global context without being unique.

The results of the survey show that most people in the Caribbean do not know much about their own, unique and quite valuable domain names. Therefore, they gravitate to the .com, .net, etc. and must now compete with over 100 million domain names worldwide, and are now subject to the US based International coordinator of the Internet (ICANN). Their websites are subject to monitoring, they must conform to international dispute resolution, and they may actually lose their names and online business because a bigger more financed company around the world wants their domain name. In addition, they must be creative in their names, and must have long, less catchy names, as most of the shorter, more marketable names have already been taken. Any marketing advantage of a shorter name or a unique name is lost.

The specific objective of this key action therefore is to help develop the local internet registries within CARIFORUM, and obtain reduced domain name pricing for locals.

#### 3.3.3 <u>Key action 3: Establishment of a Trust infrastructure within each</u> <u>CARIFORUM State</u>

The results of the surveys and the consultations show clearly that the majority of SMEs believe that the number one problem limiting the growth of e-commerce in CARIFORUM is limited trust. Furthermore, most SMEs also believe that there needs to be more data privacy and consumer protection laws, which in turn would allow consumers to have greater trust in online purchasing.

Authentication of individuals and businesses on the internet is far more difficult than in the real world, where driver's licenses, passports, national IDs and other official government issued IDs can easily be used to identify and authenticate a physical entity that is present. In CARIFORUM, the ability of remote persons to identify members is further exacerbated by the lack of online trusted official, publicly available lists of individuals, companies and other public information.

The two main areas within CARIFORUM that would need development are the areas of the Registration Authorities and the local domain name registries WHOIS output. Existing Commercial CAs rely on these two entities to verify company name and information, as well as ownership of domain names and websites. To establish trust, particularly in E-commerce activities, one needs a digital certificate, which the CAs provide only after being satisfied with both the Registration Authority's and the WHOIS report for the relevant country or area. Given the difficulties and significant barriers to becoming a trusted CA with its entry within the root CA of existing major browsers, it would be more beneficial within CARIFORUM for persons to become resellers of large commercial CAs, and for both government and the local ccTLD operator to develop their respective operations to allow for online, automated identity searches and verification required by commercial CAs before issuing digital certificates.

Against this background, the specific objective of key action 3 is to create a system of trust when doing business online, through the establishment of Certificate Authorities (CA) in a Public Key Infrastructure (PKI).

#### 3.3.4 Key action 4: Training and Capacity Building Program

SMEs within CARIFORUM note that limited understanding of e-commerce has resulted in limited e-commerce growth within the region. Two-thirds of all SMEs within the region think that governments should launch a public awareness e-commerce program. Nearly a quarter of all SMEs also noted that limited skill is a significant barrier to embracing e-commerce.

The e-commerce survey and stakeholder consultations revealed that there were only a few highly trained individuals within the region, few web developers, few hosting providers, few e-commerce experts, no domain name registrars, very few DNS experts, and very few application developers. This limited capacity has further stifled the growth of e-commerce within the region.

Therefore the objective of key action 4 is to develop and greatly enhance the human resource capacity with respect to e-commerce and web technologies in general, through effective and efficient hands-on training programs.

Through a combination of step-by-step manuals, computer based training programs (CBTs), case studies, lectures, and a "Train the Trainers" program, this key action will ensure that there is a significant amount of trained and qualified persons who can assist SMEs with various Internet and e-commerce technologies.

#### 3.3.5 Key action 5: E-Commerce solutions development/promotion

The results of the survey also revealed that only few SMEs are actively utilizing e-commerce infrastructure in their business, due in part to a general lack of e-commerce solutions and providers within CARIFORUM.

The specific objective of this key action therefore is to identify and develop e-commerce solutions within each CARIFORUM State. This will include the development of new or existing e-commerce software solutions, encouraging financial institutions to offer e-merchant accounts alongside traditional merchant accounts for SMEs, and identifying gaps in e-commerce infrastructure.

E-Commerce solutions specifically targeted will include:

- Payment Gateways
- E-Merchant Accounts
- Integrated Bill Payment Systems
- Shopping Carts
- Automated Clearing House systems (ACHs).

#### 3.3.6 Key action 6: Country Specific and Regional Content Aggregators

The majority of SMEs within this study that have websites list their websites with search engines, as a first step to building website traffic. This shows that they clearly understand the importance of search engines as a starting point for most Internet users. Overall, nearly 60% of all Internet users use search engines to find information online, thus making the search engines extremely important as content aggregators. Global search engines like Google and Yahoo collect links from all over the world, sometime resulting in difficulties finding specific local information. For example, a search of "content aggregator" on Google yielded over 3 million results.

There is a need for localized content aggregators that would allow for more country-specific searches for relevant information. Within CARIFORUM, most country specific online directories and search engines are highly focused on mostly tourism related content, and also charge for listings. In addition, many businesses that have no website are not usually listed. This leaves a large section of businesses that cannot be found via online searches.

This creates a situation of limited exposure and marketing for businesses without websites or for those that cannot afford paid online marketing and advertisement.

The specific objective of key action 6 is to develop country-specific and regional search engines for each CARIFORUM State.

#### 3.4 Strategy B4: Software Development Training and Universities

Software Development (SD) requires a broad range of skills and the term itself may have varying shades of meaning depending upon the context it is used. Software development typically includes research, new development, modification, reuse, re-engineering, maintenance, or any other activities that result in software products. For larger software systems, usually developed by a team of people, some form of process is typically followed to guide the stages of production of the software. Especially the first phase in the software development process may involve many departments, including marketing, engineering, research and development and general management.

In the Caribbean region, many human resource (HR) personnel do not fully understand the skills requirements necessary for SD positions. It is not uncommon for Regional businesses and State sector organisations to seek Information Technology (IT) graduates to fill Software development positions and the deployment of persons suited for SD to IT systems installation and maintenance tasks. There needs to be more precise and targeted education to properly communicate the differences between disciplines and the skills that education and training in these different areas impart to both potential students/trainees and to HR personnel and decision makers in the private and state sectors.

Software development skills, at the undergraduate level, are typically imparted through the Computer Science<sup>98</sup> and Software Engineering<sup>99</sup> courses in much of the world, including the Caribbean. Universities are particularly challenged by software education. Not only is a rapidly changing technology and methodology hard to capture in the curriculum, but also is practical experience with software projects as important as the theory. Much of the important knowledge has not been codified and can only be taught by experienced practitioners<sup>100</sup>. Hence the need for students and graduates to participate in software development projects in government and industry as part of their curriculum, or as a form of internship. It must be noted that many software developers throughout the world, particularly those with programming skills learnt through the many certification courses outside of the university context or are self-taught. The more important fact about such

<sup>&</sup>lt;sup>98</sup> Computer science is the study of the theoretical foundations of information and computation, and of practical techniques for their implementation and application in computer systems. It is frequently described as the systematic study of algorithmic processes that create, describe, and transform information. Skills imparted include programming; software development, testing and analysis; and algorithm design/analysis.

<sup>&</sup>lt;sup>99</sup> Software engineering is a profession dedicated to designing, implementing, and modifying software so that it is of higher quality, more affordable, maintainable, and faster to build. Skills imparted include software analysis, design, development, testing, maintenance, configuration management, engineering management, and architecting.

<sup>&</sup>lt;sup>100</sup> Shirley Tessler, et al., National Software Industry Development: Considerations for Planners, 2003, http://www.ejisdc.org/ojs2/index.php/ejisdc/article/viewFile/84/84

individuals is that their skills are usually honed by entry level industry experience, apprenticing and or mentoring from experienced developers.

CARIFORUM governments will need to strengthen the linkages between the state sector, Computer science/IT and Computer Engineering departments of regional universities and other institutes that teach software development skills, and the private sector. Such linkages will be focused on:

- Developing the regional software development industry. Governments using local developers and firm to develop their software will significantly growth industry.
- Forming academia-business and academia-government arrangements that will allow form student mentoring and internships.
- Develop funding arrangements for important research and development activities in Software development that governments and businesses can leverage for their benefit.
- Developing the capacity to take advantage of and anticipate future market opportunities.
- Pursue collaborative research projects between academic institutions, governments and the private sector.
- Promote and fund private software education and training in collaboration/partnership with regional software development firms, to supplement university training to provide skilled developers.

The region should move to developing a network of software developers that can be leveraged to provide:

- Mentorship to Software Development trainees and graduates.
- Strategic and technical advice to regional governments businesses and academic in matters of software development.
- Provide a database of skill training advice and resources.

Pursue a policy to facilitate regional higher education accreditation authorities to ensure that:

- SD students and graduates participate in Software development projects in government and industry as part of their curriculum, or as a form of internship.
- SD curricula (Computer Science, Software Engineering etc.) must include subjects like patents and Intellectual Property in order to make students knowledgeable and literate in the issues regarding Regional and international Software Patents and IP rights.

#### Box 12: Education, Training and Mentoring

For training and education (T&E) programs to be successful a careful distinction between the two concepts must be recognised by all stakeholders. Training is the process by which people gain tangible skills that they can start applying immediately. Education, on the other hand, is process by which people gain knowledge and understanding<sup>101</sup>. Training and education can occur in class room settings, in mentoring sessions, or through apprenticing. Both training and education are needed to help round out the skills trainees and graduates.

After initial training is complete developers are qualified to be mentored by someone experienced in the subject. The objective of mentoring is to have someone who is experienced guide novices through the learning process, showing them how to use the new techniques in practice. The mentoring effort should be performed on an actual development project, one in which the trainee is given the opportunity to apply and evolve the skills that they received during training. The best mentors have several years of experience in the technique,

<sup>&</sup>lt;sup>101</sup> <u>http://www.ambysoft.com/essays/trainingAndEducation.html</u>

have mentoring experience, and have good communication skills.

Mentoring is in addition to training and education, not a replacement for it. Caribbean nations should move to developing a network of software developers that can be leveraged to provide such mentorship to SD trainees and graduates.

#### 4 CREATING A CARIFORUM GOVERNANCE STRUCTURE TO SUPPORT E-COMMERCE

At present there is no governance structure for e-commerce strategies and implementation in the region. Such a governance structure would provide a better framework and environment that would benefit SMEs in adopting e-commerce, as there would be leadership, vision, national impetus, and national focus on e-commerce. The rising tide of eservices within both the private and public sectors would ultimately benefit SMEs in adopting e-commerce and e-business activities.

While the focus of this e-commerce strategy is on SMEs, SMEs do not exist in a vacuum, and therefore the entire framework under which they currently operate needs to be considered. A formal governance structure to support e-commerce in CARIFORUM could consist of the following elements:

- Formation of a Regional Inter-Ministerial Council on E-Services, consisting of ministers in charge of e-government and e-commerce in each country;
- Formation or development of a Regional E-Services Secretariat;
- Consolidation of all e-services under an E-Services Commission in each country that would be the implementation arm within each country for e-business, e-commerce and e-government projects. Commissioners should represent both public and private sectors;
- Creation of an E-Services Unit under the Commission, with an E-Services Director, which would actually do the work of the Commission;
- Creation or consolidation of existing e-business, e-commerce, e-government and elegislation units under the E-Services Unit.

The institutional challenge for the CARIFORUM e-commerce strategy stems from the fact that at the CARICOM level an institutional entity already exists, i.e. the CARICOM E-Commerce Unit, but does not cover the Dominican Republic. Therefore, it will need to be discussed to what extent a modus operandi could be found for an "extended" unit which would also cover the Dominican Republic.

#### **APPENDICES**

Appendix A: List of Caribbean Institutions that Support SMEs and E-Commerce Initiatives/Incentives

#### List of Caribbean Institutions that Support SMEs and E-Commerce Initiatives/Incentives

Country	Institution	Website Address	Summary Information
Antigua & Barbuda	Antigua & Barbuda Investment Authority	http://www.investantiguabarbuda.or g/abia/	The Antigua & Barbuda Investment Authority was created by the government of Antigua & Barbuda to promote and attract domestic and foreign investment in the nation.
Bahamas	Ministry of Finance, Data Processing Unit.	www.bahamsa.gov.bs/finance	The primary responsibility of the Ministry of Finance is the care and management of the Government's financial resources. This responsibility involves providing support and advice on the most appropriate fiscal, tax and economic policies with the aim of maximizing sustainable economic growth and development with full regard to equity and social policies. The development and management of the Government Budget is a major aspect of the Ministry's function.
			The Economics Section advises on economic policy issues and prepares briefs and periodic reports on such matters. The Section also assists on matters relating to trade and e-commerce. The Section liaises with International Organizations ( <u>IMF</u> , <u>IDB</u> , <u>OECD</u> , <u>CDB, World Bank</u> , etc.) on local projects and policy development.
Bahamas	Bahamas Investment Authority (BIA)	http://www.bahamas.gov.bs/bahama sweb2/home.nsf/vContentW/2DDDBE EA125778EA852573D800539A17	It is therefore the mandate of The Bahamas Investment Authority (BIA) to ensure that all investors in The Bahamas receive the support that is essential for the success of their investments.
			<ul> <li>Operating from the Office of the Prime Minister, the BIA has been designated a "one-stop shop" designed to simply investing in The Bahamas. The Agency has a four-fold mandate to:</li> <li>Develop investment policies</li> <li>Promote investment</li> <li>Evaluate project proposals</li> <li>Monitor projects and provide support</li> </ul>
Bahamas	Bahamas Trade Commission	http://www.bahamas.gov.bs/bahama sweb2/home.nsf/vContentW/TBTC Welcome Trade+Commission+Homepage!Open document	To canvas the Bahamian business community to understand their concerns with regard to various agreements where there is a potential that The Bahamas would be a party to (WTO, EU-EPA and successor agreements to the CBI and CaribCan) and to inform them about the developments in the negotiations regarding membership. The commission also educates the wider public about trade negotiations and the Government's participation in them.
			Specific Duties:
			• Receiving regular confidential briefings from public officials and Ministers about matters of concerns with respect to the various trade negotiations.
			• Arranging private and confidential meeting with representatives of the business community and individual business to understand what their concerns are about the various trade arrangements.
			• Presenting periodic reports to the Minister with responsibility for Trade about matters of concern among the business community.
			<ul> <li>In close cooperation with the Ministry of Finance, leading a public awareness campaign about trade agreements and trade negotiations.</li> </ul>
Barbados	The Barbados Small Business Association	http://www.sba.org.bb/cms/	The Barbados Small Business Association (BSBA) is the island's non-governmental, non-profit representative body for micro, small and medium enterprises.
Barbados	Enterprise Growth Fund Limited (EGFL)	http://egfl.bb/_	Enterprise Growth Fund Limited (EGFL) provides dynamic, small and medium-sized Barbadian companies in the productive sectors with, loan financing, venture capital (equity financing), business advisory services and technical assistance. This is a limited I
Barbados	Business Development Unit - Ministry of Trade,	<u>http://www.commerce.gov.bb/agenc</u> y/bdu/default.asp	<ul> <li>The functions of the BDU include the following:</li> <li>Developing a legislative framework for small and medium sized enterprises;</li> </ul>

Country	Institution	Website Address	Summary Information
	Industry and Commerce		Undertaking and organising projects aimed at providing international SME competitiveness in order to enable small
Barbados	Barbados Investment & Development Corporation	http://www.bidc.com/	Mission Statement To be a dynamic Business Development Agency contributing to the successful and sustained development of the Manufacturing and Small Business sectors in Barbados.
			Vision Statement A Barbados with vibrant, competitive Manufacturing and SME Sector.
Barbados	Caribbean Export Development Agency	http://www.carib-export.com/	This agency works towards fostering an enabling environment for trade and investment within the region through regional integration, cooperation and advocacy initiatives. These are designed to position the region more effectively in the world economy.
Barbados	Barbados Coalition of Service Industries (BCSI)	http://www.bcsi.org.bb/	<ul> <li>The main aims of the BCSI have been 'to develop and diversify the services sector and to prepare service providers to manage the challenges and opportunities which will be presented in an era of expanding global markets'. Some of the objectives of the organization are:</li> <li>To promote the further development and competitiveness of Barbados' service sector;</li> <li>To ensure that the highest industry standards are met by all Barbadian service providers;</li> <li>To provide Barbadian service providers with knowledge of export opportunities and to promote export activities.</li> </ul>
Belize	Belize Chamber of Commerce & Industry	http://www.belize.org/bcci/	BCCI works to foster the economic growth and social well being of the nation through the free enterprise system at all levels, by promoting and protecting, both nationally and internationally, commerce, and all sectors of industry which includes agri-business
Belize	Belize Trade and Investment Development Service (Beltraide)	http://www.belizeinvest.org.bz/	The mission of Beltraide is to promote economic development through investment promotion, entrepreneurial development, marketing and policy recommendation.
Belize	Belize Youth Business Trust	http://www.youthbusiness.bz/home- top	Youth Business Trust Belize is a pilot initiative of the Youth Business International network, a programme organisation of the International Business Leaders Forum. The aim is to support or create viable and sustainable business that would contribute to the development of the Nation's economy.
Dominica	Dominica Invest Authority	http://www.investdominica.dm/	The purpose of this Authority is to facilitate and actively promote investment opportunities in Dominica by assisting Government in the formulation and execution of national policies and providing support that exceeds our clients' expectation.
Dominica	Ministry of Employment, Trade, Industry, and Diaspora Affairs - Small Business Service Unit	<u>http://www.dominica.gov.dm/cms/in</u> <u>dex.php?q=node/199</u>	The Ministry of Employment, Trade, Industry, and Diaspora Affairs has responsibility for formulating and implementing Dominica's domestic and external trade policies. This includes export development and promotion, regional integration in CARICOM and the OECS, external trade negotiations, industry development, investment promotion, consumer protection, standards management and meteorology and Diaspora relations. The Ministry is primarily made up of a number of different functional units, namely:
			Consumer Affairs Unit
			Dominica Bureau of Standards
			Dominica Export Import Agency (DEXIA)
			Invest Dominica Authority
			Trade Division
Dominican Republic	Cyber Park of Santo Domingo	http://www.summitcircuit.com/cyber park.html	The new fund is called the "Cyber Park Incubator Investment Fund." The Cyber Park will invest in firms that are developing creative high technology solutions that have commercial potential in various high technology sectors. This new park is specialized in Information Technology (IT) and related industries including information services exports, software development and computer design, as well as of manufacturing technology products.
Dominican Republic	The RED AGENCY TO SUPPORT MICRO, SMALL	http://rsta.pucmm.edu.do/biblioteca/ bvds/moderconare.htm	The RED AGENCY TO SUPPORT MICRO, SMALL AND MEDIUM ENTERPRISES (REDIMYPE) is the main forum for communication and space for dialogue and collaboration between actors Dominican MSME sector. In the months of July, August and September 2001,

Country	Institution	Website Address	Summary Information
	AND MEDIUM ENTERPRISES (REDIMYPE)		<ul> <li>business organizations, private institutions of technical and financial support, and Government agencies included in the network, with financial backing from Bank Inter-American Development Bank, conducted a series of activities in pursuit of:</li> <li>Reviving the dialogue on development policies for micro and small enterprises;</li> <li>Identifying actions and ideas of priority projects aimed at mobilizing resources and capabilities into this vital sector of the economy, and finally;</li> </ul>
			<ul> <li>Defining and commit themselves to implementing an agreement to unify the action that enables wills and focus the actions of key players in the industry with the aim to achieve specific objectives for the advancement of micro, small and medium enterprises national in the coming years</li> </ul>
Dominican Republic	PymesDominicanas.com	http://www.pymesdominicanas.com/ home.php	PymesDominicanas.Com is the channel of e-business intelligence for small and medium enterprises worldwide. LACC is parent company for PymesDominicanas.Com. LACC is based in Houston, Texas, USA
			PymesDominicanas.Com has developed a network of more than 58,000 businesses and executives, SME Bulletin subscribers. Weekly our site receives more than 108,000 actual visits weekly. Clients include business leaders and government, professional and business associations, chambers of commerce, among others.
Dominican Republic	The National Institute of Technical and Vocational Training (INFOTEP).	http://www.cinterfor.org.uy/public/e nglish/region/ampro/cinterfor/ifp/inf otep/index.htm	The National Institute of Technical and Vocational Training (INFOTEP). This organisation has several programs aimed at training and development workers and employers.
Grenada	EcomGrenada	http://www.ecomgrenada.com/	An e-commerce website for Grenadian businesses including SMEs. Similar to an online mall the businesses are allowed to sign up and build their own e-commerce site.
Grenada	Business Development Centre- Grenada Industrial Development Centre (GIDC)	http://www.grenadaworld.com/	<ul> <li>GIDC's primary goal is to increase private sector investments. Specifically, through the following:</li> <li>Attracting new foreign direct investment</li> <li>Increasing the number of indigenous, innovative, efficient and profitable small businesses registered.</li> </ul>
Guyana	Institute of Private Enterprise Development (IPED)	http://www.ipedgy.com/	The Institute of Private Enterprise Development (IPED) provides supervised loans and Business Development Services to groups and individuals of the Micro and Small Business Sectors countrywide.
Guyana	Small Business Development Finance Trust(SBDF)	http://www.psc.org.gy/aboutpsc/prof iles/sbdf.htm	Private- Professional guidance and personalized investment advise to entrepreneurs in making sound decisions Technical training in the following areas: Business Management Record Keeping Entrepreneurial Skills Marketing and Product Packaging
Guyana	Small Business Council	http://www.competitiveness.org.gy/a gencies/small-business-council	The Small Business Act also provides that the Minister shall establish the Development Fund, which will provide for: a) Support and access to financing for small businesses b) Non-financial services and assistance to help small businesses improve pr
Guyana	The Guyana Office For Investment (GO-Invest)	http://www.goinvest.gov.gy	The Mission of Go-Invest is to contribute to Guyana's economic development by promoting and facilitating local and foreign private-sector investment and exports in accordance with the country's approved investment and export strategies.
Guyana	New Guyana Marketing Corporation (GMC)	http://www.newgmc.com/	The Guyana Marketing Corporation (GMC) is a government corporation established to work to promote the cultivation and export of Guyana's non-traditional agricultural crops to Regional and Extra-Regional markets.
Guyana	Ministry of Tourism, Industry and Commerce	http://www.mintic.gov.gy	To formulate and provide an effective mechanism for the implementation, evaluation and improvement of policies, the aim of which will be to facilitate economic and social improvement through coordinating actions in areas of Commerce, Tourism, Industrial Development and Consumer Affairs.
Jamaica	Jamaica Business Development	http://www.jbdc.net/	The Jamaica Business Development Centre (JBDC) was established and mandated to lead the process of the development of MSMEs and to provide advice to the government on policy issues relating to

Country	Institution	Website Address	Summary Information
	Corporation		industrial development.
Jamaica	Jamaica Trade Facilitation Portal	http://www.jamaicatradepoint.com/	Jamaica Trade Point is Jamaica's trade facilitation portal where both exporters and importers can carry out their trade-related transactions with the relevant organizations online and in a seamless manner. This initiative was borne out of the Jamaican gov
Jamaica	Jamaica Investment & Export Promotions Agency (JAMPRO)	www.investjamaica.com	Provides details of opportunities for trade, investment and production. They also provide grants and gives import and export licensing.
Jamaica	Ministry of Industry, Technology, Energy and Commerce (MITEC)	www.mct.gov.jm	Promotes business development, provides jobs, fund projects
Jamaica	JN Small Business`	www.jnbs.com	Provides loans for small/micro businesses in Jamaica. They also fund business training done by JBDC.
Jamaica	Micro Enterprise Financing Limited (MEFL)	www.mefljamaica.com	Provides financial assistance for micro enterprises in designated inner city and other urban communities of Jamaica.
Jamaica	National Development Foundation of Jamaica (NDFJ)	www.ndfj.com.org	Loans for micro, small and medium sized businesses. Venture Capital Financing (Public Sector Company)
St Kitts & Nevis	St. Kitts Investment Promotion Agency (SKIPA)	http://www.stkittsipa.org/	Investment Promotion: SKIPA proactively markets St. Kitts, internationally, regionally and locally as an attractive investment location that offers an array of investment opportunities. The investment promotion efforts of the agency are geared towards attracting the right type of investor that will positively contribute to the long term development of St. Kitts.
St Lucia	Ministry of Commerce, Industry and Consumer Affairs -Small Enterprise Development Unit (SEDU)	http://www.commerce.gov.lc/depart ments/view/1	The Small Enterprise Development Unit (SEDU) was established in the Ministry of Commerce, Industry and Consumer Affairs in 1994 with the mandate to facilitate the sustainable development of the micro and small business sector.
St Lucia	Office of Private Sector Relations	http://www.opsr.org.lc/	The overall mission of the OPSR is to stimulate and promote business growth and development in the Saint Lucian economy. One of their main objectives is to assist in the creation and sustaining of a strong business environment.
Suriname	Suriname business Development Centre (SBD)	http://www.sbc.sr/smartcms/default. asp	Supports SMEs through Seminars and training in many areas including ICTs and web development.
Trinidad & Tobago	Ministry Of Trade and Industry	http://www.tradeind.gov.tt/	The Ministry's core responsibility is the promotion and development of trade activities, with an emphasis on generating sustainable export-led growth and development, by securing enhanced access to foreign markets for local companies.
Trinidad & Tobago	Ministry of labour, Small and Micro Enterprise Development	http://www.labour.gov.tt/	The Ministry of Labour and Small and Micro Enterprise Development provides a host of services for employers, Labour Unions, and individual workers. These functions include Administrative Services, Conciliation Services, Occupational Safety and Health Issues, Labour Inspectorate Services, Library Services, Research and Planning Services, Trade Union Services, and, Friendly Societies Services. In addition, Co-operative Activities and Employment Services are also provided by the Ministry
Trinidad & Tobago	National Entrepreneurship Development Company Limited (NEDCO)	http://www.nedco.gov.tt/	The National Entrepreneurship Development Company Limited (NEDCO) is a Limited Liability State-Owned Organization mandated to be the implementing agency for Government's policy on small and micro enterprise development.
Trinidad & Tobago	Business Development Company (BDC) Ltd.	http://www.bdc.co.tt/	Company Limited (BDC) is the implementing agency for the Government of Trinidad and Tobago's policy for enterprise development.

Country	Institution	Website Address	Summary Information
Trinidad &	Rusiness Development	http://www.smeychange.com/	The BDC is also the official trade promotion organization of Trinidad and Tobago, assuming the International Business Promotion This BDC initiative The smeXchange com online B2B platform. The smeXchange com also allows SMEs to access the online o
Tobago	Company (BDC) Ltd. SMEXchange - SME B2B Marketplace	http://www.smexchange.com/	business guide, examine case studies, upload company and product information, retrieve a list of e-business service providers, compare prices etc.
Regional	Commonwealth Telecommunications Organisation (CTO)	http://www.cto.int/	The Commonwealth Telecommunications Organisation (CTO) is an international development partnership between Commonwealth and non-Commonwealth governments, business and civil society organisations. It provides the international community with effective means to help bridge the digital divide and achieve social and economic development, by delivering to developing countries unique knowledge-sharing programmes in the use of Information and Communication Technologies (ICT) in the specific areas of Telecommunications, IT, Broadcasting and the internet. CTO has been and is currently involved in providing strategic advice and training programmes that are focused on regional business development.
Regional	Caribbean Community Secretariat (CARICOM)	http://www.caricom.org/	An organization of 15 Caribbean nations and dependencies. CARICOM's main purposes are to promote economic integration and cooperation among its members, to ensure that the benefits of integration are equitably shared, and to coordinate foreign policy. Its major activities involve coordinating economic policies and development planning; devising and instituting special projects for the less-developed countries within its jurisdiction; operating as a regional single market for many of its members (Caricom Single Market); and handling regional trade disputes.
			The International Telecommunication Union (ITU) and CARICOM Secretariat has launched a project "Enhancing Competitiveness in the Caribbean through the Harmonization of ICT Policies, Legislation and Regulatory Procedures" (HIPCAR). The aim of this project is to "enhance competitiveness and socio-economic development in the Caribbean through the harmonization of ICT policies, legislation and regulatory procedures. This project has been conceived by ITU and the <u>Caribbean</u> <u>Community</u> (CARICOM) Secretariat in response to requests from CARICOM States and other ICT stakeholders."
			The HIPCAR Project is part of a global project funded by the European Commission (EC) and ITU covering Africa, the Caribbean and the Pacific Group of States (ACP). See <u>http://www.itu.int/ITU-D/projects/ITU_EC_ACP/</u> .
			The Caribbean Telecommunications Union (CTU) is also collaborating on this project with respect to the Caribbean.
Regional	Caribbean Association of National Telecommunication (CANTO)	http://www.canto.co.cu/	CANTO's objective is 'to establish a forum through which Caribbean Telecommunication Organizations may exchange information and expertise pertaining to the telecommunications field, generate inputs for orderly growth of the sectors, formulate policy and consider matters of mutual interest to its members'.
Regional	International Telecommunication Union (ITU)	http://www.itu.int	The ITU's mission is to enable the growth and sustained development of telecommunications and information networks, and to facilitate universal access to the emerging information society and global economy. The ITU assists in mobilizing the technical, financial, and human resources required by such development. A major priority of the ITU is bridging the so-called "digital divide" by building adequate and safe information and communication infrastructure and developing confidence in the use of cyberspace through enhanced online security.
Regional	The Caribbean Telecommunications Union (CTU)	http://www.ctu.int/	The CTU has launched on-line Caribbean Internet Governance Forum (CIGF) to engage stakeholders in the development of policies and structures for Internet governance (IG) in the Caribbean. This forum has been launched by the CTU at the request of the CARICOM Secretariat which has lead responsibility for the coordination of policy matters related to information and communications technology (ICT) in the region.

#### Appendix B: SME E-Commerce Questionnaire

#### **Appendix C: Project Documents**

#### SME e-Commerce Questionnaire

Submit Form

# 1) How long has your company been in operation? Tick one value

Less	han a year	1.	-5 Years		6-10 Years		11-15 Years		Over 15 Years
------	------------	----	----------	--	------------	--	-------------	--	---------------

Agriculture
Construction
Culture and Entertainment
Finance and Insurance
Fishing
Hotel
Information Technology
Legal
Manufacturing
Medical and Pharmaceutical Services
Real Estate and Rentals
Sport
Tourism and Recreation
Retail Trade
Restaurant
Telecommunications
Tour Operators
Transportation
Wholesale Trade
Other

3) How many employees were in your company as at March 1st 2010 (including temporary, permanent and casual workers) Tick one value
1 – 5 5-25 26-100 Over 100
4) How much revenue did your company make in the last financial year? Tick one value
Less than US \$10,000         Between US \$10,000 and US \$100,000
Between US \$100,000 and US \$1 million Over US \$1 million
5) Who are your primary customers? Tick one value
Individuals Businesses Government
6) Where are most of your products/services sold? Tick one value
Customers with your own country/state
Caricom (excluding your own country/state)
Elsewhere
7) Where do most of your customers come from? Tick one value
Caricom (excluding your own country/state)
Section 2: Computers Instructions
1) How many computers do you have in your company? Tick one value. <i>If value is 0 go to end</i>
0 1-10 11-50 51-100 More than 100

2) Who are the main users of the computers in your company? Tick all applicable values

Senior Management	Middle Management
Operational Staff	Secretarial Staff

3) What do you use your computers for? Tick all applicable values
Office Applications (word processing, spreadsheets etc)
Point-of-sale
Payroll
Finance and Accounting
Purchase Orders and Inventory
Programming and System Development
Library
Other
4) Where did you purchase your computers? Tick all applicable values
Locally
5) Does your company have a computer network? Tick one value
Yes No
Section 3: Internet Usage Instructions
1) Do the computers in your company have access to the Internet? Tick one value <i>If value is NO go to section 4</i>
Yes No
2) What percentage of your computers has Internet access? Tick one value
0% 1-25% 26-50% 51-75% 76-100%
3) What types of Internet connection do your computers have? Tick all applicable values
Dial-up Dedicated Leased line
DSL Wireless Cable

4)	What does your company use the Internet for? Tick all applicable values
	E-mail
	Business Research
	Online Sales
	Purchasing Supplies Online
	Customer Services Support
	Software Downloads
	Intranet/Extranet/VPN
	News & Reference
	Online Government Services
	It is not used
	Other
5)	Who is given access to the Internet in your company? Tick all applicable values         Senior Management         Operational Staff    Secretarial Staff
6)	What percentage of staff has Internet access in your company? Tick one value
	Less than 25% 26 – 50%
	51 – 75% 76 – 100%
7) va	Are your company's computers protected by a Firewall or Anti-Virus software? Tick one alue
	Yes No
8)	Does the company have an Intranet₅? Tick one value. If value is NO go to section 4YesNo

Collaboration (meeting notes, calendars, discussion forums etc)
Human Resource Information
Organized access to external Internet sites
Sales and marketing information
Teleconferencing
Other
Section 4: Website Information
1) How many websites does your company have? Tick one value <i>If value is 0 go to</i>
question 15
0 1 2 3 More than 3
2) Do you have any website registered through your local domain name Registry (e.g .AG, .LC, .DM, .DO, .GD, .JM, .KN, .TT, .VC)?
No Yes
3) What were the main reasons for setting up your website? Tick all applicable values
To provide general information on the company
To enhance your company's image
To enhance your company's image To market or advertise your products
To provide general information on the company         To enhance your company's image         To market or advertise your products         To improve customer service
<ul> <li>To provide general information on the company</li> <li>To enhance your company's image</li> <li>To market or advertise your products</li> <li>To improve customer service</li> <li>To retain existing customers and acquire new ones</li> </ul>
<ul> <li>To provide general mormation on the company</li> <li>To enhance your company's image</li> <li>To market or advertise your products</li> <li>To improve customer service</li> <li>To retain existing customers and acquire new ones</li> <li>To extend your company's geographic reach and break into new markets</li> </ul>
<ul> <li>To provide general mormation on the company</li> <li>To enhance your company's image</li> <li>To market or advertise your products</li> <li>To improve customer service</li> <li>To retain existing customers and acquire new ones</li> <li>To extend your company's geographic reach and break into new markets</li> <li>To keep up with your competitors</li> </ul>
<ul> <li>To provide general mormation on the company</li> <li>To enhance your company's image</li> <li>To market or advertise your products</li> <li>To improve customer service</li> <li>To retain existing customers and acquire new ones</li> <li>To extend your company's geographic reach and break into new markets</li> <li>To keep up with your competitors</li> <li>To enable direct selling of goods and services over the Internet</li> </ul>
<ul> <li>To provide general mormation on the company</li> <li>To enhance your company's image</li> <li>To market or advertise your products</li> <li>To improve customer service</li> <li>To retain existing customers and acquire new ones</li> <li>To extend your company's geographic reach and break into new markets</li> <li>To keep up with your competitors</li> <li>To enable direct selling of goods and services over the Internet</li> <li>To conduct business with your suppliers</li> </ul>
<ul> <li>To provide general mormation on the company</li> <li>To enhance your company's image</li> <li>To market or advertise your products</li> <li>To improve customer service</li> <li>To retain existing customers and acquire new ones</li> <li>To extend your company's geographic reach and break into new markets</li> <li>To keep up with your competitors</li> <li>To enable direct selling of goods and services over the Internet</li> <li>To conduct business with your suppliers</li> <li>To support your company's purchasing process, including payments</li> </ul>
<ul> <li>To provide general information on the company</li> <li>To enhance your company's image</li> <li>To market or advertise your products</li> <li>To improve customer service</li> <li>To retain existing customers and acquire new ones</li> <li>To extend your company's geographic reach and break into new markets</li> <li>To keep up with your competitors</li> <li>To enable direct selling of goods and services over the Internet</li> <li>To conduct business with your suppliers</li> <li>To support your company's purchasing process, including payments</li> </ul>
<ul> <li>To provide general information on the company</li> <li>To provide general information on the company</li> <li>To enhance your company's image</li> <li>To market or advertise your products</li> <li>To improve customer service</li> <li>To improve customer service</li> <li>To retain existing customers and acquire new ones</li> <li>To retain existing customers and acquire new ones</li> <li>To extend your company's geographic reach and break into new markets</li> <li>To keep up with your competitors</li> <li>To enable direct selling of goods and services over the Internet</li> <li>To conduct business with your suppliers</li> <li>To support your company's purchasing process, including payments</li> </ul>

5) What year was your website set up? Tick one value
Before 2000         2000 - 2005         2006 - 2008         2010
6) Is your website hosted in your own country? Tick one value
Yes No
7) If your website is hosted outside of your country, what is the reason for doing so? Tick all applicable values
Cost
Speed of access
Security
Too few local Internet Service Providers
Too few local E-Commerce Service Providers
Other
8) How do you promote your web site? Tick all applicable values
We do not promote our website
With advertising banners on other websites
With targeted mail/e-mail to potential customers
Listing in search engines like Google
By giving online advantages such as coupons, discounts
Through the newspapers, magazines, TV and radio
Other
9) How frequently do you update your website? Tick one value
Every day Every week
Every month     As often as the need arises
10) Do you track the number of visitors to your website? Tick one value. <i>IF VALUE IS NO GO TO QUESTION 10</i>
Yes No
11) On average, how many visitors do you receive on your website per month? Tick one value
Less than 100 100-500 501-1000 1001-5000 Over 5000

12) <b>va</b> l	) Do you think that your website has increased your company's revenue? Tick one lue. <i>If value is NO go to question 14</i>
$\square$	Yes No
13) <b>va</b> l	) If your revenue has increased, what percentage does this increase represent? Tick one ue
	Less than 10% 11% - 50% 51% - 100% More than 100%
14) <b>ap</b>	) How has your website changed the geographical sources of your revenue? Tick all plicable values
М	ore Local Revenue More Regional Revenue More International Revenue
15) on	) Does your company have any concerns about doing business on the Internet? Tick e value
	Yes No
If	value is NO go to Section 5
16) val	What are your main concerns about doing business on the Internet? Tick all applicable lues
$\square$	Expense of setting up a website to do business
$\square$	Protecting my financial and other transactions whilst on the Internet
	Setting up a reliable payment system to receive monies for goods sold over the Internet
	Products are not easily sold using the Internet. Customers must see the products first.
$\square$	How to get my goods to my overseas clients in a timely and cost effective manner
	Existing business systems cannot support e-commerce
	Do not want to change existing systems and procedures in my business
	The cost of changing existing business systems and procedures
	Employees are not "Internet-Ready"
	Doing business on the Internet is not corporate priority
	There is a lack of understanding by management about doing business on the Internet
	Other

#### Section 5: E-Commerce Activity

#### 1) What statement best describes your company's Electronic Commerce strategy?

A strategy has been developed and implemented

A strategy has been developed but has not yet been implemented

No strategy but we plan to develop one in the future

No strategy and there are no plans to develop one

2) Did your business <u>place</u> orders (make purchases) for goods and services via the <u>Internet</u> during 2009? (<u>include</u> via Web sites, specialized Internet marketplaces, extranets, EDI over the Internet, Internet–enabled mobile phones but <u>exclude</u> orders submitted via conventional e-mail)

Yes

No

3) Did your business <u>receive</u> orders (make sales) for goods or services via the <u>Internet</u> during 2009? (<u>include</u> via Web sites, specialized Internet marketplaces, extranets, EDI over the Internet, Internet–enabled mobile phones but <u>exclude</u> orders submitted via conventional e-mail, <u>also include</u> orders received on behalf of other organizations and others received by other organizations on behalf of your business)

Yes

INO
-----

4) Which of the following benefits, if any, did your business realize through Internet selling during 2009? Tick all applicable values

	Reduced transaction time
	Increased quality of customer service
	Lower business costs
	Increased sales volume and/or number of customers
[	Keeping pace with competitors
	Able to better target customers individually
ſ	Other (please specify)

No benefits realized

#### Section 6: E-Commerce Issues

## 1) Which of the following factors, if any, limited or prevented Internet selling by your business during 2009? Tick all applicable values

	Products of your business are not well suited to sale via the Internet
	Security concerns
	Privacy concerns
	Prefer to maintain current business model e.g. face to face interaction
	Customers' or suppliers' computer systems are incompatible with yours
	Insufficient level of customer demand for purchasing via the Internet
	Uncertainty concerning legal/regulatory framework for selling over the Internet
	Cost of development and/or maintenance is too high
	Lack of skilled employees to develop, maintain or use the technology required
	No limitations to selling over the Internet
ne	Not relevant – as selling over the Internet is currently under development or planned for the ear future
	Other (please specify)

### 2) What are the factors affecting the development/growth of electronic commerce in your country? Tick all applicable values

Lack of trust or familiarity with electronic commerce
Lack of understanding of electronic commerce
Unavailability of skilled workers
Existing internal business processes
Cost of implementation
Emerging regulations in such areas as tax and privacy
Limitations of technology
Insufficient corporate budget
No barriers to electronic commerce
Other
Don't know
---
1

No

Yes

Submit Form

Don't know

# **BROADBAND PROJECT DOCUMENT**

# 1 INTRODUCTION

Broadband is being increasingly recognised as being a basic foundation for communication in technologically advanced societies. The number of devices that can utilise broadband networks is growing exponentially, both in the wireless sphere – e.g. smart phones such as Blackberries and iPhones –, through broadband connected televisions and traditional personal computers, and through wireless connected notebooks and netbooks and the recently released iPad.

Convergence is increasingly becoming an expectation in technologically advanced societies where internet enabled devices are able to deliver similar services to traditional media, including audio and video recording, playback and transmission, communication over the internet and computing. To provide such functionality, devices rely on a combination of accepted technical standards, regulatory frameworks and business models. These developments represent a shift from the way traditional media, telecommunications and equipment providers operate as well as a shift in industry business models and regulatory systems.

Convergence is occurring as a result of the migration to Internet Protocol technology by a range of sectors including telecommunications, broadcasting which now streams programming, cable companies, and terminal equipment manufacturers. This migration is facilitated by and is further promoted in a virtuous circle of an increasing availability of broadband internet service. At the same time demand is continually being created as business models are developed that exploit the possibilities created by convergence and the increasing availability of broadband. There is now a multitude of convergence including service provider convergence where service providers are able to deliver a multiplicity of services which were formerly unrelated, terminal equipment convergence where terminal equipment can now deliver a range of services including telephony, media and computing; convergence in modes of delivery as providers adopt IP as the platform for their services; and market related convergence as formerly distinct markets are put into direct competition. The mode of regulating the related industries and services that serve to promote convergence is most important to the degree of converged services being offered in a country.

Small and medium sized enterprises (SMEs) collectively form the largest employer in CARIFORUM countries. They also form a significant portion of these economies. The efficiency, productivity and dynamism of these countries are dependent on the efficiency, productivity and dynamism of the SMEs in these countries. The adoption of broadband enabled computing and converged technologies by SMEs offer the possibility of the social and economic transformation of Cariforum countries, as these countries gain by using the most advanced means of production in competing with the rest of the world.

Europe 2020 sets out a vision to achieve high levels of employment, a low carbon economy, productivity and social cohesion, to be implemented through concrete actions at EU and national levels. This is because of the high levels of dynamism and innovation inherent in the sector, and the enabling role the sector plays in changing how other sectors do business. At the same time, the social impact of ICT has become significant – for example, the fact that there are more than 250 million

daily internet users in Europe and virtually all Europeans own mobile phones, has brought significant change to the world view and lifestyle of Europeans. Other key issues addressed in Europe 2020 are the lack of digital literacy and skills, sustainable healthcare and ICT-based support for dignified and independent living, promoting cultural diversity and creative content and eGovernment.

# 2 STRATEGIC CONTEXT AND PROJECT JUSTIFICATION

Like most developing countries, CARIFORUM Member States have made efforts at liberalising the telecommunications sector, introducing second or third providers, particularly for mobile and ISP services. There is the need to now move beyond policies for basic connectivity and ICT readiness to encourage the rollout of affordable quality broadband networks to underpin the competitiveness and growth of ICTs.<sup>1</sup> Where the need has been identified, States should develop universal access policies and programmes to expand broadband access to remote areas and identified underserved groups.

South Korea and Japan illustrate successful model of delivery of the highest speeds of broadband and converged services to an accepting public.

# Component 1 Broadband development strategy for CARIFORUM States

Most CARFORUM Governments do not have a broadband policy. For example, in Trinidad and Tobago, the state majority owned TSTT has not been given any directive by the Government for the wide delivery of broadband service. At the same time the cost of the service is not cheap by international standards. At the other end, countries such as Guyana and Suriname have not even reached full liberalisation of basic telecommunications services, far less to consider the promotion of broadband. The concept of universality must incorporate access to broadband

Internationally, the countries with the greatest broadband penetration with the lowest cost and highest speeds are those countries with expressed broadband policies with state participation in the delivery of broadband service. The principal goal of a broadband strategy is to increase the number of individuals and businesses that use broadband Internet in effective ways to increase productivity, enhance quality of life, and benefit society.

An effective broadband strategy entails policies to both expand the supply of broadband infrastructure and increase the demand for broadband service. Demand side policies can spur adoption and use of broadband. Increased adoption can play an important role in spurring deployment, including deployment of next generation networks. If broadband infrastructure providers can sell their services to more customers without incurring additional fixed costs, this makes the financial risk-reward proposition of investing in unserved areas or upgraded networks more appealing. Reasons for non-adoption are threefold: affordability (e.g., the cost of broadband service, the cost of a computer), lack of digital literacy skills, and lack of awareness or misconceptions with respect to value.

## International Comparisons

<sup>&</sup>lt;sup>1</sup> See <u>www.oecd.org/dataoecd/32/28/34228733.pdf</u>.

While many individuals and businesses in CARIFORUM look to the United States for comparison, all data suggests that the United States lags behind a number of nations in broadband adoption. There are a number of factors that play a role in determining international ranking, including the extent of broadband network deployment. While supply is an issue (e.g. Japan and South Korea is around 99% of households, comparisons between the two countries have shown that demand factors play a more important role in determining national adoption rates.

South Korea is recognized as being the nation with the most comprehensive policies to promote broadband adoption. South Korea put in place a wide range of well-funded programs to spur broadband adoption. South Korean Government has created a number of demand-side programs to target affordability and usability, including digital literacy programs that target population groups that otherwise would be less likely to use the Internet. The South Korean government provides subsidies to around 1,000 private training institutes for the purpose of educating housewives, in order to create demand in households. The government provided subsidies for the purchase of personal computers by low-income citizens. The Personal Computer Diffusion Promotion established in 1999, aimed to provide personal computers at low-prices, partly through a personal computer purchase installment plan using the government-run postal savings system. The following year the government purchased 50,000 personal computers and provided them to low-income families on a reasonably priced 4-year lease, with full support for broadband free for 5 years. Other nations have also established similar programs which have been proved to be successful.

A Digital Agenda for Europe, one of the flagship plans under the Europe 2020 Strategy was issued in May 2010. The European Union's five year plan for the digital economy include measures relating to technology standards, elimination of regulatory barriers, encouraging electronic payments and simplification of digital copyright management and licensing. The European Union intends to double their annual spending on research and development, undertake a major overhaul of telecoms law, and work towards harmonization of the way mobile broadband is rolled out across Europe.

#### Component 2 Rural broadband development strategy for CARIFORUM States

Most CARIFORUM States have already achieved high levels of telephone access which has resulted in part from competitive pressures in the provision of both fixed and mobile telephone service. However in some States, notably Suriname, Belize, Guyana and Haiti the overall penetration is not high and coverage of mobile networks in rural areas is also very extensive. In States where penetration is high, increasing investment in broadband networks is taking place. Most of this investment tends to focus on the urban areas.

As next-generation broadband networks become increasingly important for the needs of modern economies, and as the information requirements of social and economic activities increase, the importance of broadband connectivity for the growth and development agenda is expanding. In CARIFORUM States, there is a risk of increasing the "digital divide" between rural and urban areas. At the same time, governments are increasingly looking at ways, enabled by broadband, to find more cost-effective ways of delivering government services to rural and remote areas.

It should be noted that the World Bank is in the process of creating a Broadband Strategies Toolkit for developing countries in three phases from 2010-2012. The first Phase, due in April 2011, will involve the creation of a Broadband Strategies Handbook and the first three modules of the Toolkit. The Handbook will comprise extended summaries of all seven planned modules. This Handbook will also lay the groundwork for the full Broadband Strategies Toolkit and will provide an important resource to developing country regulators and policymakers in planning their own national strategies.

# 3 PROJECT RATIONALE

# 3.1 Objectives

# 3.1.1 Overall Objectives

The objectives of this consultancy are to (a) articulate a broadband strategy for CARIFORUM States and (b) assist in the preparation of a rural broadband development strategy.

# 3.1.2 Specific Objectives

The specific objectives are to (a) Formulate a policy to increase the access to broadband (b) Provide highly relevant and practical input for CARIFORUM States' rural broadband development strategy by using international experience to help develop and assess strategic options suitable for CARIFORUM States.

3.1.3 Expected Results

# 3.2 Stakeholders (Implementing Agency, Beneficiaries, Target Groups)

CARIFORUM as a whole can spearhead this project's implementation. The collaboration of individual territorial governments, regional telecommunications services providers and regulatory authorities are important. There are a number of key stakeholders that will be engaged to implement this programme. These include:

- 1. Telecommunications services providers across the region.
- 2. Government and Regional Regulatory Authorities with oversight for telecommunications
- 3. The Caribbean Telecommunications Union (CTU) which is the regional agency charged with oversight and harmonisation of the telecommunications space, in conjunction with regulatory authorities and other stakeholders. As a key partner in the harmonization of rules and regulations, the CTU shall be critical with regard to addressing any regulatory questions that may need to be addressed to implement the initiative. Particular focus will be required with transregional aspects such as treating with the owners/ administrators of submarine cables within the region.

## 4. Other Important Regional Stakeholders

This group will primarily include important policy and legal advisors from each of the Caricom territories with insight into Regional telecommunications laws, e-Transactions, e-Commerce etc.

# 3.3 Risks and Assumptions

3.4 Cross-cutting Issues

1. The issue of broadband should be a consideration in the Telecommunications Liberalisation efforts in CARIFORUM States not yet de facto liberalised (Guyana, Belize, Suriname) 2. Regulation for a converged environment. Convergence is being facilitated by a host of new underlying regulatory frameworks, industry standard protocols, business models and technologies which have been developed in mature markets in North America, Europe and Asia. However, convergence presents a challenge to the traditional models of regulation which were developed to govern traditional telecommunications and broadcasting industries and services. A number of models have been developed in attempting to regulate this converged environment. Experience has demonstrated that the fostering of convergence depends on regulatory systems designed for a converged environment.

# 5 PROJECT IMPLEMENTATION STRATEGY

#### 5.1 Project Components

5.1.1 Component 1: Formulate a policy to increase the access to and uptake of broadband.

5.1.2 Component 2: Assist in the preparation of a rural broadband development strategy.

#### 5.2 Plan of Main Activities for Implementation of the Project

CARIFORUM States are in various stages of telecommunications liberalisation with various degrees of success. Many countries presently have active competition in wireless telephony and some competition in fixed line telephony and internet service. However, generally wireless service in most countries is being provided by a duopoly; and where there is a third provider, the market share of the third provider is very small. While prices have been reduced from when there was a monopoly they are still not as low as in a truly competitive market. Further, these providers are not delivering the most advanced wireless broadband technologies and the prices for wireless internet service are relatively high, while speeds are low and service spotty. With respect to wireline service, CARIFORUM States are not provided with the high speeds and low prices which are being offered in Asia. In many countries broadband access is not readily available in rural areas.

While an in depth and comprehensive diagnosis of the existing broadband environment of each country is not the objective of this project, small scale assessments will take place in approximately eight selected countries, to be undertaken in four phases of two countries per phase. Countries selected for each phase will represent the range of broadband development within the region, from those at the more rudimentary stages of e-government to those with more advanced stages of broadband development. In addition, surveys will be sent to the remaining 6 countries in which an assessment mission will not take place.

The consultant will examine the critical policy and regulatory issues to be considered in the formulation of a broadband strategy containing policies to increase the access to and use of broadband in CARIFORUM. The key issues that are to be addressed include:

1. a) An examination of who will pay for broadband roll-out (companies or governments, by reallocating universal access funds). An elaboration of the role of State participation including subsidizing roll out to actual involvement in deployment.

b) Depending on terrain and demand, an elaboration on what technology should be used-Wireless, landline, etc.

c) Analysis of the order of roll-out (to urban/rural and rich/poor areas).

d) A discussion of the regulatory scheme for broadband (should the providers be regulated like telecom operators or like ISPs).

e) An elaboration of the complementary government actions that are needed to facilitate broadband roll-out (e.g., release of spectrum for wireless broadband; facilitating permits to lay cable; allowing telephone companies to provide broadband over existing cable without unnecessary regulation, etc.)

International comparison: in examining the critical policy and regulatory issues, the consultant should consider how these issues are dealt with in other countries that have had a successful broadband roll-out, including South Korea, Singapore and Japan, and note what have been the obstacles in other countries (including, most notably, the U.S. and Europe) The consultant will also examine the various threads of broadband policies in the U.S., EU and elsewhere and see how they apply to the Caribbean situations.

2. Specific Programmes. The consultant will examine and elaborate on the viability of specific programmes to increase both access to and supply of broadband. These programmes include but shall not be limited to:

- a) Governmental Support innovative pricing plans by ISPs.
- B) Allowing persons on low income user schemes/lifeline to use the "lifeline" for broadband.
- c) Promoting schemes to help defray the costs of low income families owning a computer.
- d) Funding of digital literacy programs.
- e) Creation of a digital literacy and broadband adoption clearinghouse.
- f) Passing along cost savings to citizens that use e-government services.

3. Strategy for increasing awareness: the consultant will elaborate a strategy for mobilizing a political and social consensus behind broadband deployment.

Activities include but are not limited to in-country workshops on how broadband could:

- Enhance social cohesiveness.
- Promote economic development (especially small and medium sized businesses).
- Be used for educational and health-related purposes.

The consultant will meet with stakeholders and hold consultative workshops in at least 5 States.

#### Component 2 Rural broadband development strategy for CARIFORUM States

The consultant will assist in the preparation of a rural broadband development strategy that will involve

(a) taking stock of the deployment of broadband networks in rural areas, including access by priority groups such as health centres and schools;

(b) identifying relevant examples of approaches to rural broadband deployment and access, from international experience, and

(c) developing concepts for programming and/or policy initiatives for CARIFORUM States.

In order to achieve this objective, the consultant will undertake the following tasks:

- a. Develop a typology of international practice comprising different approaches and instrumentalities that governments have used to promote rural broadband development.
- b. Identify and elaborate key technological and economic factors that will affect rural broadband development strategies in CARIFORUM States.
- c. Develop an inventory of access to broadband services in rural areas by high priority groups such as schools and medical clinics.
- d. Consult with key experts and stakeholders in CARIFORUM States with respect to key issues and strategic options for rural broadband development.
- e. Identify rural broadband development opportunities in CARIFORUM States. Develop and recommend specific strategies.
- f. Identify successful innovative approaches to promote efficient private sector participation in the effective promotion of rural broadband development.
- g. Take a lead role in organizing and arranging a Workshop.
- 5.3 Sustainability Issues
- 5.4 Arrangements for Monitoring & Evaluation
  - 5.4.1 Performance indicators and targets
  - 5.4.2 Institutional arrangements
  - 6 INSTITUTIONAL AND RESOURCE FRAMEWORK FOR PROJECT IMPLEMENTATION
- 6.1 Project Organisation and Institutional Arrangements
- 6.2 Resource Requirements

Component 1: 3 or 4 experts 250 man days

80 days on mission

Component 2: 2 or 3 experts 100 man days

40 days on mission

# ANNEXES

# Annex A: Logical Framework Matrix Annex B: Project Work Plans Annex C: Detailed Budget

Component 1: Broadband development strategy for CARIFORUM States	Cost (Euros €)
Consultant	200,000
Travel and workshop expenses	50,000
Other activities	20,000
Total	270,000

Component 2: Rural broadband development strategy for CARIFORUM States	Cost (Euros €)
Consultant	100,000
Travel and workshop expenses	40,000
Total	140,000

Annex D: Related Donor Funded Projects

# Regional Ecommerce Capacity Building and E-commerce Solutions Project

# 1 Introduction

The Small Medium Enterprise (SME) survey and consultation process is very instructive in understanding the overall climate that one faces in many member states in CARIFORUM. The climate has to change if the region is going to achieve the desired state with e-commerce. The results of the research raised serious concerns about the level of knowledge and awareness of e-Commerce in general and the lack of availability of e-commerce solutions. The research clearly points to the need for major efforts in terms of public awareness and education programs aimed at SMEs.

In this regard, a long-term, sustained approach, using seminars and workshops customized with local experts' content and participation, where possible is suggested. There should be local logistic support for immediate and long-term sustained education and public awareness campaigns about the importance of e-commerce.

In addition to Education and Public Awareness, one must address the issue of the Building Blocks of E-Commerce in general, and develop or suggest ways to lower the barriers to entry. Current barriers to entry of E-Commerce include website hosting costs, website development costs and lack of trust in the security of the system.

He reserch has shown that a large number of the SME's which have a website have a basic website giving some information only. Interventions are required to bring more basic websites into the full realm of transacting business online. To bring the masses of SMEs up the beginner's level of e-commerce, one needs to get them to the stage of actually having an active website on the Internet, preferably with a local, unique domain name. In an effort to assist in the development of local branded e-commerce, one needs to work on the development of the local registries and get them to provide local incentives for using local domain names with the aim to bring costs to local SMEs down to less than US \$20 per domain name per year. The development of a website hosting and development package that costs around US \$10-20 / month.

# 2 Strategic Context and Project Justification

Six major interventions within this are proposed, namely:

- (1) Public Awareness program
- (2) Local domain name "buy local" campaign and registry outreach
- (3) Building Public Key Infrastructure (PKI) infrastructure within CARIFORUM
- (4) Technical Training in Web/Internet Technologies
- (5) E-Commerce solutions development/promotion
- (6) Country Specific and Regional Content Aggregators

# 2.1.1 Component 1: Education and Public Awareness Programs for CARIFORUM States

The results of the survey and research suggest that there is a serious lack of understanding and awareness of E-Commerce in general, and the various building blocks of E-Commerce in particular. In light of these findings it is imperative that public awareness and education campaigns be carried out to address this situation.

# 2.1.2 Component 2: Develop local Internet registries and make set up costs for local SMEs affordable

The local country code top-level domain (ccTLD) registries were originally designed to ensure that each country/region had unique representation within the global domain name space. The generic registries (gTLDs) were designed for all people to have representation within a global context without being unique.

The results of the survey show that most people in the Caribbean do not know much about their own, unique and quite valuable domain names. Therefore, they gravitate to the .com, .net, etc. and must now compete with over 100 million domain names worldwide, and are now subject to the US based International coordinator of the Internet, (ICANN). Their websites are subject to monitoring, they must conform to international dispute resolution, and they may actually lose their names and online business because a bigger more financed company around the world wants their domain name. In addition, they must be creative in their names, and must have long, less catchy names, as most of the shorter, more marketable names have already been taken. Any marketing advantage of a shorter name or a unique name is lost.

# 2.1.3 Component 3: Establishment of a PKI infrastructure within each CARIFORUM state

The results of the surveys and the in-country experiences show clearly that the majority of SMEs believe that the number one problem limiting the growth of E-Commerce in CARIFORUM is limited trust. Furthermore, most SMEs also believe that there needs to be more data privacy and consumer protection laws, which in turn would allow consumers to have greater trust in online purchasing.

Authentication of individuals and businesses on the Internet is far more difficult than in the real world, where driver's licenses, passports, national IDs and other official government issued IDs can easily be used to identify and authenticate a physical entity that is present. In CARIFORUM, the ability of remote persons to identify members is further exacerbated by the lack of online trusted official, publicly available lists of individuals, companies and other public information.

# 2.1.4 Component 4: Training and Capacity Building Program

SMEs within CARIFORUM note that limited understanding of E-Commerce has resulted in limited E-Commercee-commerce growth within the region. Overwhelmingly, two-thirds of all SMEs within the region think that Government should launch a public awareness E-Commerce program. Nearly a quarter of all SMEs also noted that limited skill is a significant barrier to embracing e-commerce.

The e-commerce survey and stakeholder consultations revealed that there were only a few highly trained individuals within the region, few web developers, few hosting providers, few E-commerce experts, no domain name registrars, very few DNS experts, and very few application developers. This limited capacity has further stifled the growth of e-commerce within the region.

## 2.1.5 Component 5: E-Commerce solutions development/promotion

The results of the survey also revealed that only a few SMEs are actively utilizing e-commerce infrastructure in their business, due in part to a general lack of e-commerce solutions and providers within CARIFORUM.

#### 2.1.6 Component 6: Country Specific and Regional Content Aggregators

The majority of SMEs within this study that have websites list their websites with search engines, as a first step to building website traffic. This shows that they clearly understand the importance of search engines as a starting point for most Internet users. Overall, nearly 60% of all Internet users use search engines to find information online, thus making the search engines extremely important as content aggregators. Global search engines like Google and Yahoo collect links from all over the world, sometime resulting in difficulties finding specific local information. For example, a search of "content aggregator" on Google yielded over 3 million results.

There is a need for localized content aggregators that would allow for more country-specific searches for relevant information. Within CARIFORUM, most country specific online directories and search engines are highly focused on mostly tourism related content, and also charge for listings. In addition, many businesses that have no website are not usually listed. This leaves a large section of businesses that cannot be found via online searches. This creates a situation of limited exposure and marketing for businesses without websites or for those that cannot afford paid online marketing and advertisement.

# 3 Project Rationale

# 3.1 Objectives

## 3.1.1 Overall Objectives

The objective of this project is to bring the masses of SMEs to at least the beginner's level of ecommerce where actual transactions are conducted online.

## 3.1.2 Specific Objectives

1. The specific objective of Component 1 is to create a culture of E-Commerce within CARIFORUM, with the specific goal of assisting more SMEs to integrate E-Commerce into their businesses.

2. The specific objective of Component 2 is to help develop the local Internet Registries within CARIFORUM, and obtain reduced domain name pricing for locals.

3. The specific objective of Component 3 is to create a system of trust when doing business online, through the establishment of Certificate Authorities (CA) in a Public Key Infrastructure (PKI).

4. The specific objective of Component 4 is to develop and greatly enhance the human resource capacity with respect to E-commerce and web technologies in general, through effective and efficient hands-on training programs.

5. The specific objective of Component 5 is to identity and develop E-Commerce solutions within each CARIFORUM state.

**6.** The specific objective of Component 6 is to develop country-specific and regional search engines for each CARIFORUM state.

# 3.1.3 Expected Results

- 1. Creation of a culture of E-Commerce within the region, with the specific goal of assisting more SMEs to integrate E-Commerce into their businesses.
- 2. The development of the local Internet Registries within CARIFORUM, and obtain reduced domain name pricing for SMEs.
- 3. Establishment of a PKI infrastructure within each CARIFORUM state.
- 4. Through a combination of step-by-step manuals, computer based training programs (CBTs), case studies, lectures, and a "Train The Trainers" program, Component 4 will ensure that there is a significant amount of trained and qualified persons who can assist SMEs with various Internet and E-Commerce technologies.
- 5. Identification and development of E-commerce solutions including development of new or existing E-Commerce software solutions, Encouraging financial institutions to offer E-merchant Accounts alongside traditional merchant accounts for SMEs and Identifying gaps in E-Commerce infrastructure.

E-Commerce solutions specifically targeted for component 5 will include:

- (1) Payment Gateways
- (2) E-Merchant Accounts
- (3) Integrated Bill Payment Systems
- (4) Shopping Carts
- (5) Automated Clearing House systems (ACHs)
- 6. Component 6 is expected to further the development of country-specific and regional search engines for each CARIFORUM state.

# 3.2 Stakeholders (Implementing Agency, Beneficiaries, Target Groups)

The implementation of the project will be best expedited through the collaboration of Regional telecommunications services providers and regulatory authorities, at least the members of The Caribbean Association of National Telecoms Operators (CANTO), but ultimately all telecommunications providers operating within the Caribbean Basin. However, individual territorial governments or CARIFORUM as a whole can spearhead this project's implementation.

There are a number of key stakeholders that will be engaged to implement this programme. These include:

#### Regional Businesses (Caribbean SMEs)

The goal is to reduce the barriers that regional Businesses, particularly SMEs, currently face in conducting e-Business and expanding their reach and their ability to access markets across the Region. This stakeholder group is of primary concern in this endeavour and is the group to directly benefit from the success of this project.

#### **Regional Business Development and Facilitation Companies**

These are organizations that facilitate the development of businesses by providing their clients with training, financial support, international business promotion, consulting and business advisory services. Within the Caribbean, many of these entities are supported by the state and mandated to develop local businesses. This stakeholder group will have considerable insights into the local and Regional SME and business climate and would be uniquely positioned to market the platform to their clients and facilitate business authentication and registration services for the B2B marketplace.

#### Regional Governments (CARIFORUM Governments)

Government and Regional Regulatory Authorities with oversight for telecommunications and ecommerce will need to be engaged to ensure that activities that fall under this initiative are harmonised within their regulatory frameworks.

#### **Regional ICT/Technology companies**

This group includes Regional ICT and technology companies that have expertise in web hosting, web development, e-Commerce, e-Business and e-Payments services. These businesses will have the expertise to determine the specific technology requirements, costs, development timelines and appropriate business and administration models for the development and deployment of the e-Business Marketplace.

## Regional Business Chambers.

Chambers of Industry and Commerce throughout the Caribbean, stand to benefit their members and their own profiles through participation in this initiative. Business Chambers generally have a deep and broad understanding of the regional business climate and the specific issues that their members face with regards to ICTs and e-Business. Thus the insights and linkages of this stakeholder group will be sought, in addition to their assistance in reaching out to the business community at large for the promotion and uptake of the platform.

## **Regional Banks and Financial Institutions**

E-Business requires that parties are able to pay for and receive payment for goods and services rendered. Regional banks and financial institutions must be onboard so that solutions regarding electronic transactions, e-Payments, and the related policy and legislative issues that may be encountered as a result of conducting e-Business across Caribbean territories can be explored and implemented.

#### Educational Institutions and academia

These will include the University of the West Indies, technical and Community Colleges as well as private educational institutions.

# Other Important Regional Stakeholders

This group will primarily include important policy and legal advisors from each of the Caricom territories with insight into Regional trade and commerce laws, data protection, e-Transactions, e-Commerce etc.

# 3.2 Risks and Assumptions

**3.2.1** These projects entail getting support from public and educational institutions, with it attending vagaries. The main risk is that some of the interventions need to be properly funded in terms of equipment set up, human resources and continuing operational costs and the local governments and other institutions need to co-operate to fund and support the related activities.

# 3.3 Cross-cutting Issues (Gender, Environment, HIV, Poverty Reduction)

# 4 **Project Implementation Strategy**

# 4.1 **Project Components**

## 4.1.1 Component 1: Education and Public Awareness Programs for CARIFORUM States

Component 1 will foster the development and execution of a sustained program of E-commerce education and public awareness programs aimed specifically at SMEs, but also at the general population as well. Once fully developed, this program would be launched on a pilot scale within one smaller country where one could expect more buy-in would occur, or a country which shows more readiness or willingness to receive this program. Eventually, the program would be rolled out to the various CARIFORUM states and continued for a period of two to three years.

# 4.1.2 Component 2: Develop local Internet registries and make set up costs for local SMEs affordable

This Component involves getting agreement with CARIFORUM local Internet Registries for development of a stable, dependable, efficient and world-class Internet Registries. In turn, local Internet Registries would agree on special local domain name pricing that would be affordable to all.

## 4.1.3 Component 3: Establishment of a PKI infrastructure within each CARIFORUM state

This Component will assist SMEs in embracing E-Commerce via the establishment of a PKI infrastructure within each CARIFORUM state. This entails (a) The creation of a system of unique identifiers, which would also allow back-end verifications that would go much further in proving identity than public lists, and allow governments to have a secure method of rolling out E-Government services to individuals and businesses online. and (b) The preparation of laws that

provide for electronic transactions and PKI components (such as CAs and digital signatures), laws that govern electronic funds transfers, and other laws that protect consumers from identity theft, etc.; and well as laws that allow for electronic publication of non-private information on persons, businesses, etc. for the purpose of authentication and verification of identity.

# 4.1.4 Component 4: Training and Capacity Building Program

This Component will identify, develop and teach curricula for the most important Internet technologies that will greatly increase the number of skilled Internet technology personnel within each member state within CARIFORUM.

# 4.1.5 Component 5: E-Commerce solutions development/promotion

This Component comprises two parts. The first part will entail the identification and documentation of existing E-Commerce solutions and providers within CARIFORUM states, while the second part would involve the development of a vibrant, robust, and extensive E-Commerce infrastructure within the region.

# 4.1.6 Component 6: Country specific and regional content aggregators

This Component will provide technical assistance to set up and operate one country specific search engine/website directory for each CARIFORUM state, plus on additional regional meta search engine for all CARIFORUM states combined. Only local companies of each state would be listed in each search engine, and all basic listings would be free of costs to the local business. Each business owner would be provided password access to change or update his/her listings, and premium (paid) listings would be allowed to support the search engines over time.

# 4.2 Plan of Main Activities for Implementation of the Project

Component 1: **Education and Public Awareness Programs** for CARIFORUM States will include the following activities:

- 1. Strategic Seminars on E-Commerce (definition, types, models, benefits, etc.)
- 2. E-Commerce Workshops
- 3. Weekly Newspaper Articles on various aspects of E-Commerce
- 4. Television Programs on E-Commerce
- 5. Slogans and Essay Competition on E-Commerce
- 6. Awards for Best or most Innovative E-Commerce Solutions
- 7. Centralized coordinating office within the region

# Component 2: Develop local Internet registries and reduce hosting costs to local SMEs

Activities: The package would include:

- 1. Meeting with each local CARIFORUM Internet Registry Operator
- 2. Complete analysis of the present state of each local Internet Registry
- 3. Identifying which local Internet Registry requires assistance
- 4. Development of local Internet registries into world class platforms
- 5. Providing training in DNS operations and Registry Operations
- 6. Building a regional network of local Internet Registries
- 7. Obtaining agreements with local Internet Registries to offer affordable, reliable and stable domain names to locals.

8. Funding and Coordinating a "buy local domain" marketing and promotions campaign

#### Component 3: Establish a PKI infrastructure

Activities: The establishment of the following is required:

- (1) Registration Authorities that can verify business names and ownership.
- (2) Laws that allow the establishment of CAs, e.g. The Electronic Transaction Act, laws for electronic publication of non-private information on persons, businesses, etc. and for the purpose of authentication and verification of identity.
- (3) Schedules and Guidelines under which CAs operate or are licensed.
- (4) Online publication by RAs of business names and status.
- (5) ccTLDs publicly available WHOIS information that show website owners.
- (6) A system of Unique Identifiers for businesses and persons (national IDs).
- (7) A system of Trust between the RAs and CAs, and between the CAs and International security auditing firms such as WebTrust.

#### Component 4: Training and Capacity Building Program

Activities: The training and capacity building program will include:

- (1) Curricula development of web technology courses.
- (2) Development of subject manuals or identification of existing course books or manuals.
- (3) Development of CBTs or use of existing relevant CBTs.
- (4) Short-term courses at local schools, colleges, Universities.
- (5) Identification of relevant Case Studies to show proof of concept.
- (6) Lectures that provide overview and a cohesive framework for all programs.
- (7) Train The Trainers Program
- (8) Short-term and long-term scholarship programs within and outside the region where applicable.

Specific subject areas would include:

- (1) Introduction to the Internet and WWW
- (2) Introduction to HTML
- (3) Intermediate HTML
- (4) Advanced HTML
- (5) Web Servers
- (6) Webmaster 1
- (7) Webmaster 2
- (8) Hosting Providers
- (9) Domain Name System (DNS)
- (10) Web Databases and Applications Servers
- (11)Common Web Tools and Technologies (mySQL, PHP, ASP, Java, JavaScripts, CGI/Perl, etc.)
- (12)E-Commerce

#### Component 5: E-Commerce solutions development/promotion

Activities: will include:

- (1) Identifying all existing E-Commerce solutions within CARIFORUM
- (2) Documenting all E-Commerce solutions within CARIFORUM
- (3) Identifying and documenting all Financial Institutions that support E-Commerce.

- (4) Working with existing E-Commerce solutions providers to port solutions to other member states where possible.
- (5) Development of new or existing E-Commerce software solutions.
- (6) Encouraging financial institutions to offer E-merchant Accounts alongside traditional merchant accounts for SMEs.
- (7) Identifying gaps in E-Commerce infrastructure.

E-Commerce components specifically targeted for component 5 would include:

- (1) Payment Gateways
- (2) E-Merchant Accounts
- (3) Integrated Bill Payment Systems
- (4) Shopping Carts
- (5) Automated Clearing House systems (ACHs)

#### Component 6: Country Specific and Regional Content Aggregators

Activities: This project would include:

- (1) Identifying and obtaining suitable search engine software.
- (2) Registering appropriate domain names for each country-specific search engine.
- (3) Obtaining Database Hosting Solution for each search engine.
- (4) Installing and configuring each Search Engine on each website.
- (5) Setting up initial links for each major category of businesses in each search engine.
- (6) Marketing and Promoting FREE search engine listings.
- (7) Developing Advertising and Marketing of premium listings to support search engines.

# 4.3 Sustainability Issues

# 4.4 Arrangements for Monitoring & Evaluation

- 4.4.1 Performance indicators and targets
- 4.4.2 Institutional arrangements

# 5 Institutional and Resource Framework for Project Implementation

# 5.1 Project Organisation and Institutional Arrangements

# 6 ANNEXES

# 6.1 Annex A: Logical Framework Matrix

6.2 Annex C: Detailed Budget

Estimated Budgets						
	Venue	Speakers/				
Component 1: Education and Public Awareness Programs	Rental	Consultants	Flights	Other		Totals
1. Strategic Seminars on E-Commerce (definition, types, models, benefits, etc.)	€19.500,00	€18.000,00	€6.750,00	r		€44.250,00
2. E-Commerce Workshops	€34.500,00	€72.000,00	€27.000,00	I		€133.500,00
3. Weekly Newspaper Articles on various aspects of E-Commerce				€ 30.000,00	i	€30.000,00
4. Television Programs on E-Commerce				€ 30.000,00	1	€30.000,00
5. Slogans and Essay Competition on E-Commerce				€60.000,00	J	€60.000,00
6. Awards for Best or most Innovative E-Commerce Solutions				€60.000,00	1	€60.000,00
7. Centralized coordinating office within the region				€ 55.200,00	1	€55.200,00
					Totals	€412.950,00
Component 2: Develop local Internet registries and bring costs to locals down						
1. Meeting with each local Cariforum Internet Registry Operator	€1.600,00	€9.600,00	€22.500,00	€ 12.500,00	1	€46.200,00
2. Complete analysis of the present state of each local Internet Registry		€18.000,00	€6.750,00	€ 3.750,00	1	€28.500,00
3. Identifying which local Internet Registry requires assistance		€5.000,00				€5.000,00
4. Development of local Internet registries into world class platforms				€75.000,00	1	€75.000,00
5. Providing Training in DNS operations and Registry Operations	€1.600,00	€4.800,00	€11.250,00	€ 12.500,00	1	€ 30.150,00
6. Building a regional network of local Internet Registries	€1.600,00	€4.800,00	€11.250,00	€ 12.500,00	1	€ 30.150,00
7. Obtaining agreements with local Internet Registries to offer affordable,		€18.000,00				€18.000,00
8. Funding and Coordinating a "buy local domain" marketing and promotions		€ 10.000,00		€ 10.000,00	1	€20.000,00
					Totals	€253.000,00
Component 3: Establishment of a PKI infrastructure within each Cariforum states						
(1) Registration Authorities that can verify business names and ownership.				€75.000,00	1	€75.000,00
(2) Laws that allow the establishment of CAs, e.g. The Electronic Transaction Act.				€ 30.000,00		€ 30.000,00
(3) Schedules and Guidelines under which CAs operate or are licensed.				€ 30.000,00		€ 30.000,00
(4) Online publication by RAs of business names and status.				€ 19.200,00	1	€19.200,00
(5) ccTLDs publicly available WHOIS information that show website owners.				included		€0,00
(6) A system of Unique Identifiers for businesses and persons (national IDs).				€25.000,00		€25.000,00
(7) A system of Trust between the RAs and CAs				€25.000,00	·	€25.000,00
					Totals	€204.200,00

Component 4: Training and Capacity Building Program						
(1) Curricula development of web technology courses.		€14.400,00				€14.400,00
(2) Development of subject manuals or identification of existing course books or manuals.		€14.400,00				€14.400,00
(3) Development of CBTs or use of existing relevant CBTs.		€14.400,00				€14.400,00
(4) Short-term courses at local schools, colleges, Universities.		€50.000,00				€ 50.000,00
(5) Identification of relevant Case Studies to show proof of concept.		€6.000,00				€6.000,00
(6) Lectures that provide overview and glue for all programs.	€22.500,00	€72.000,00	€6.750,00	€ 3.750,00		€ 105.000,00
(7) Train The Trainers Program		€72.000,00				€72.000,00
(8) Short-term and long-term scholarship programs				€ 30.000,00		€ 30.000,00
					Totals	€ 306.200,00
Component 5: E-Commerce solutions development/promotion						
1. Identifying all existing E-Commerce solutions within Cariforum		€18.000,00	€6.750,00	€ 3.750,00		€28.500,00
2. Documenting all E-Commerce solutions within Cariforum		€24.000,00	€6.750,00	€ 3.750,00		€34.500,00
3. Identifying and documenting all Financial Institutions that support E-Commerce.		€12.000,00	€6.750,00	€ 3.750,00		€22.500,00
4. Working with existing E-Commerce solutions providers to				€ 50.000,00		€ 50.000,00
5. Development of new or existing E-Commerce software solutions.				€150.000,00		€150.000,00
6. Encouraging financial institutions to offer E-merchant Accounts		€18.000,00	€6.750,00	€ 3.750,00		€28.500,00
7. Identifying gaps in E-Commerce infrastructure.		€12.000,00	€6.750,00	€ 3.750,00		€22.500,00
					Totals	€ 336.500,00
Component 6: Country Specific and Regional Content Aggregators						
<ol> <li>Identifying and obtaining suitable search engine software.</li> </ol>		€5.000,00		€4.000,00		€9.000,00
2. Registering appropriate domain names for each country-specific search engine.		€3.200,00		€ 800,00		€4.000,00
3. Obtaining Database Hosting Solution for each search engine.		€1.600,00		€2.880,00		€4.480,00
<ol><li>Installing and configuring each Search Engine on each website.</li></ol>		€38.400,00				€38.400,00
5. Setting up initial links for each major category of businesses in each search engine.		€ 38.400,00	€6.750,00	€ 19.200,00		€64.350,00
6. Marketing and Promoting FREE search engine listings.		€3.200,00		€ 128.000,00		€131.200,00
7. Developing Advertising and Marketing of premium listings to support search engines.		€3.200,00		€ 32.000,00		€35.200,00
					Totals	€286.630,00

# Regional e-Business Roundtable – Private Sector Lead Partnership with CARIFORUM States.

# 1 Introduction

This project proposal is for the establishment of a Regional (CARIFORUM) e-Business Roundtable; a private sector led partnership with CARIFORUM that aims to map out a strategy for the Region's economic growth and success by focusing on leadership, opportunity recognition, innovation and revenue generation through the use of Information and Communication Technologies (ICT's) in business.

This e-Business Roundtable will consist of high-level business executives, technology experts and academics from throughout the Region, and will serve as a "think-tank" to guide and challenge the implementation of the associated CARIFORUM e-commerce policy/strategy and the associated projects. This executive committee team will draw on its expertise in the private sector to advise and assist CARIFORUM in developing the Regional economy; with specific emphasis being placed on laying the appropriate foundation for developing existing enterprises as well as encouraging the birth of new businesses and opportunities.

The e-Business Roundtable will work with various Industry Associations to explore the potential for ICT to be used as a catalyst for the further enhancement of foundation industries such as Services, the Financial Sector, Energy, Culture/Entertainment and Tourism, as well as Fisheries Management and Agriculture.

# 2 Strategic Context and Project Justification

The successful implementation of a Regional e-commerce policy/strategy is depends upon the efficient and effective collaboration of all Regional stakeholders. In particular, the collaboration between Regional governments and the private sector.

Regional companies in the fields of telecommunications, banking and technology are most aware of the regional challenges to e-business and hold many of the keys that will enable the development of robust regional e-commerce industry. It is crucial that synergies between these regional payers, Regional governments and Academia be created and exploited in order to deliver on the promise of e-commerce.

# 3 Project Rationale

# 3.1 Objectives

# 3.1.1 Overall Objectives

To establish a private sector led partnership with CARIFORUM member states, that aims to map out a strategy for the Region's economic growth and success by focusing on leadership, opportunity recognition, innovation and revenue generation through the use of Information and Communication Technologies (ICT's) in business.

## 3.1.2 Specific Objectives

- 1. To influence Regional Government's ICT policies/strategies and facilitate the development of CARIFORUMS Internet economy.
- 2. To act as a pool of private sector expertise available to assist in the development of existing enterprises as well as the identification and promotion of new domestic, regional and international business opportunities.
- 3. To work with the various Industry Associations in the Region to explore the potential for ICT as a sector-level catalyst for the enhancement of foundation industries such as, Financial services, Energy, Services (including tourism), Culture/Entertainment, Fisheries Management and Agriculture.
- 4. To inspire CARICOM businesses and citizens to grasp the opportunities presented by network technologies, including the Internet.
- 5. To identify new and emerging human capital development requirements (business, technical, engineering, science etc.) and make recommendations as to the delivery of those skills that will be required to support increased levels of ICT-driven innovation in CARIFORUM territories.
- 6. To identify areas in which business houses need support to embrace technology for innovation and greater productivity.

# 3.2 Stakeholders (Implementing Agency, Beneficiaries, Target Groups)

There are a number of key stakeholders that will need to be represented. These are:

- 1. Regional Telecommunications providers,
- 2. CARICOM/CARIFORUM,
- 3. Caribbean Government Ministries and/or State Sector entities with the mandate of developing SMEs and ICT infrastructures/services,
- 4. Regional Regulatory Authorities (Telecommunications and Finance/Trade),
- 5. The Regional Business Sector (including SMEs),
- 6. Academia,
- 7. Youth Community,
- 8. Regional Business Development and Facilitation Companies,
- 9. The Regional Banking and Financial Institutions Sector,
- 10. Regional Media and Broadcasting Sector,
- 11. Regional Chambers of Commerce.

# 3.2 Risks and Assumptions

It is vitally important that the proposed e-Business Roundtable demonstrate its expertise and commitment to the development of the Region's e-Business industry. The visibility of this Roundtable and its work/initiatives needs to be made a priority in order to consolidate support and confidence in its vision, and buy-in from governments and the private sector, that is crucial to the implementation e-commerce and ICT related projects.

# 4 Institutional and Resource Framework for Project Implementation

# 4.1 Project Organisation and Institutional Arrangements

## 4.1.1 The e-Business Roundtable

The e-Business Roundtable is to be formally established with a clear Charter, member guidelines and regular meeting schedule. This Committee will be charged with overseeing the implementation of the e-commerce strategy, and in particular the scoped projects. The following are the characteristics of the Roundtable:

- 1. The Roundtable will be chaired by a Caribbean Export Development Agency Representative
- 2. This Roundtable should comprise of 12 individuals who represent the various stakeholders who are most affected, or who can most contribute to the success of the agenda, suggested as follows:
  - Representative of Telecommunications providers across the region(possibly CANTO or CTU representative),
  - Representative of CARICOM/CARIFORUM,
  - Representative of a Caribbean Government (a Minister or Permanent Secretary),
  - Representative of Regional Regulatory Authorities,
  - Representative of the Business sector,
  - Representative of Academia (UWI, UTech, UTT, etc.),
  - Representative of the Youth community,
  - Representative of Regional Business Development and Facilitation Companies,
  - Representative of the Regional Banking and Financial Institutions Sector,
  - Representative of Regional Media and Broadcasting Sector.

- 3. An aggressive promotion and awareness campaign will need to be launched to seek buy in from relevant stakeholders and attract much needed programme funding. Aspects of the promotion and awareness campaign will include lobbying and stakeholder engagements, ministerial briefings, PR, online marketing and media events.
- 4. Organisations funding projects will have first preference to sit on the e-Business Roundtable so that they have first-hand knowledge and influence on how their contributions are being disbursed.
- 5. The committee will meet once per month to determine relevant matters and make decisions towards assuring the successful implementation CTC.

# 4.1.2 Action Groups

The members of the Roundtable will be provisioned across several Action Groups to oversee the implementation of each of the specified CTC projects. Namely

- Financial, Institutional, Logistical & Legal
- <u>Technology & Infrastructure</u>
- Heritage & Arts, New Media & Local Content
- <u>Promotion, Communications & Awareness</u>
- Special Focus Sectors
- Education, Training & Development

Guidance and accountability for implementation of the individual CTC projects will rest with the responsible Action Groups – coordination, strategic advice and implementation capacity across all Groups being provided by the Project Management Secretariat.

- Each Action Group should consist of a minimum of three (3) Roundtable members.
- The Action Groups will meet as often as necessary to achieve its goals.
- Face-to-face Action Group Meetings should be held, at minimum, monthly, with Meeting Decision Request Reports generated through the Secretariat entity.
- The e-Business Roundtable is to report to the CARICOM secretariat.
- Additional Action Group members can be co-opted as and when required.
- Action Groups will report to the plenary Roundtable at its monthly Committee meeting.

## 4.1.3 Project Management Team

The Purpose of this Team is to provide strategic advice & coordination services to the e-Business Roundtable as follows:

- 1. This Project Team will be engine of the Roundtable process providing strategic advice, stakeholder liaison, implementation capacity and <u>administrative support to the Roundtable and</u> <u>the individual Action Groups.</u>
- 2. The Project Team will:
  - Provide expert advice on project implementation and best practices.
  - Facilitate and coordinate communication between parties and stakeholders internal and external to CANTO and the Steering Committee.
  - Monitor the progress across the various action lines, and will itself be responsible for delivering certain aspects of the CTC as will be determined at contracting.
  - Report to the e-Business Roundtable chair and CARICOM Secretariat.

# 5 Project Implementation Strategy

# 5.1 Plan of Main Activities for Implementation of the Project

This action plan outlines the activity schedule and goals to be achieved in implementing the first six (6) months of implementing this project.

# 5.1.1 Action 1 – Seek Mandate from CARICOM Secretariat and Relevant Stakeholders.

The CARICOM Secretariat must be engaged in order to receive a mandate to pursue the first six (6) months of this project. This engagement can showcase the key projects and initiatives as well as the associated budgets. This opportunity should also be used to obtain funding endorsements and in-kind contributions from individual stakeholders.

## 5.1.2 Action 2 – Implement e-Business Roundtable Governance Structure

Two key components of the Governance Structure will be:

- e-Business Roundtable to oversee and guide the implementation of proposed e-commerce strategy and associated projects.
- A Project Management Team this project team will be engine of the process providing strategic advice, stakeholder liaison and implementation capacity to the Roundtable.

## 5.1.3 Action 3 - Commission Three (6) Steering Committee Action Groups

These Action Groups will oversee the implementation of each of the key initiatives (projects) outlined in the e-commerce strategy. The Groups will be supported by the Project Management Team. The proposed Groups are as follows:

- Financial, Institutional, Logistical & Legal
- <u>Technology & Infrastructure</u>
- Heritage & Arts, New Media & Local Content

- <u>Promotion, Communications & Awareness</u>
- Special Focus Sectors
- Education, Training & Development

# 5.1.4 Action 4 – Commission Feasibility Studies and Consultancies as Appropriate

Once the full Governance Structure is in place the various business strategy and optimization studies can be commissioned and managed by the Roundtable, through the Project Team.

# 5.2 Resource Requirements

- 5.2.1 This Roundtable should comprise of 12 individuals who represent the various stakeholders who are most affected, or who can most contribute to the success of the agenda, suggested as follows:
  - Representative of Telecommunications providers across the region(possibly CANTO or CTU representative),
  - Representative of CARICOM/CARIFORUM,
  - Representative of a Caribbean Government (a Minister or Permanent Secretary),
  - Representative of Regional Regulatory Authorities,
  - Representative of the Business sector,
  - Representative of Academia (UWI, UTech, UTT, etc.),
  - Representative of the Youth community,
  - Representative of Regional Business Development and Facilitation Companies,
  - Representative of the Regional Banking and Financial Institutions Sector,
  - Representative of Regional Media and Broadcasting Sector.
- 5.2.2 The Project Management team should be staffed as follows:
  - a Project Manager;
  - a Project Team (2 persons) with appropriate skills and experience to support each action group
  - two (2) administrative / communications persons.

## 5.2.3 Regional Organisations for consideration for major contributions may include:\*

<ul> <li>Microsoft (Caribbean)</li> </ul>	University of the West Indies
<ul> <li>First Citizen's Bank</li> <li>6 (and other Regional Banks)</li> </ul>	<ul> <li>Inter-American development bank</li> </ul>
<ul> <li>Telecommunication Services of Trinidad and Tobago (TSTT)</li> </ul>	CARICOM
• Telesur	<ul> <li>Telecomunications Authority of Trinidad and Tobago (TATT).</li> </ul>
Caribbean Export Development Bank	<ul> <li>Country Governments / Ministries of Trade</li> </ul>

\*Please note that this is not intended to be an exhaustive list

# 7 ANNEXES

# 7.1 Annex C: Detailed Budget

# 7.1.1 Budget Summary

Overall Budget Summary						
Description		Cost (US\$)				
Project Management Team						
(for 6 Months from implementation launch)						
Support Staff	\$	157,350.00				
Administrative Costs						
(accommodation, stationery, telecommunications etc.)	\$	39,337.50				
Subtotal	\$	196,687.50				
Pre-Launch Marketing for Steering Committee Formation						
Website Development:	\$	2,210.00				
PR and e-Marketing:	\$	3,500.00				
Video Production:	\$	26,000.00				
Marketing Coordination and Steering Committee Process Administration:	\$	12,000.00				
Contingency (10%)	\$	4,371.00				
Subtotal	\$	48,081.00				

Total	\$ 244768.50	

# 7.2 Annex D: Related Donor Funded Projects

# Regional IXPs/Interconnection Project- Re-engineering the Interaction with the Internet Economy.

# 1 Introduction

Information and Communications Technology (ICT) is widely seen as a key facilitator and driver of the 21<sup>st</sup> Century Economy. The Caribbean has been for some time grappling with the transformation of its interactions with the developed economies in a number of spheres of economic endeavour. In that regard, but particularly now with the thrust to Connect the Caribbean, reconsideration of how the movement of information is facilitated – the trade in bits, bytes and bandwidth – is critical to the realization of the developmental aims of the telecommunications, and wider ICT sectors across the Region.

This idea is not entirely new, but the opportunities have also rarely ever been so ripe for harvesting, and the costs of failure rarely ever been so dire. As far back as the mid 1980's, with the thrust to gain individual (international telephone) country codes for each regional jurisdiction, there has been a consistent, though low in intensity, impetus to realign how the Caribbean region interacts with its North American immediate neighbour, and by extension the world at large. This movement led, with some impetus from the World Trade Organisation (WTO), to the subsequent drive for telecommunications market liberalization region-wide, resulting in Jamaica's landmark first steps to opening their telecommunications market to competition in 2000, followed by other jurisdictions liberalizing their domestic and international markets. These bold actions have since precipitated significant investment in on-island and off-island telecommunications infrastructures throughout the region.

# 2 Strategic Context and Project Justification

As more SMEs move to using e-Commerce business models there will be a corresponding increase in online content and a resulting increase in bandwidth use and data hosting needs. The Region's current Internet architecture has the following stumbling blocks:

- A single point of failure. For many CARIFORUM States the single interconnection point in North America represents a single potential point for network failure. A natural disaster or cyber attack that renders this point inoperable would essentially cut access to the internet and web services. Of particular concern would be the inability to send data from one CARICOM State that is destined for another CARICOM State. This situation has ramifications for regional e-Commerce and e-payments systems.
- 2. Data Sovereignty/Security/Policy. The current IXPs and Network Access points are not within CARFORUM's policy or legal jurisdiction. Sending sensitive data across national borders presents a privacy risk to governments and corporations. In light of the US Patriot Act, there are potential implications for Electronic Privacy, Security, e-Commerce, and e-Government. These concerns can have an impact on the uptake of e-commerce and e-Government systems within CARIFORUM and the establishment of Regional e-Payment systems. In summary, the implementation of a Regional routing infrastructure will go some way in dealing with trust issues that regional banks and other institutions have with e-commerce. Keeping local traffic local means that sensitive data is not subject to inspection by other governments.
- 3. **Regional Connectivity Costs.** While on island investments have increased the awareness, variety and modernity of ICT services in respective Caribbean territories, the off island investments have served merely to strengthen the historical paradigm of regional connectivity where island

neighbours are connected to each other primarily through the mediation of extra-regional third parties; particularly the United States' long distance telecoms carriers. In this arrangement, a percentage of every telephone / internet transaction between CARICOM neighbours includes a cost that is paid to US long distance carriers who act as interconnection and transit facilitators.

The current Regional models and architecture result in significant cost and latency drawbacks with few (if any) associated gains to Regional economies. The risk position to CARICOM becomes more dire when one considers this situation in the context of the continued, rapid migration to IP based networks for the carriage of both voice and data traffic - as individual countries embark on ambitious National ICT Plans and the Region as a whole moves toward "Connecting" itself. In fact, the prevailing model has CARIFORUM states as the net payer for both incoming and outgoing minutes and packets of traffic. Currently, due to this model, access to the Internet is provided at a cumulative cost of hundreds of millions of US dollars annually, thus increasing the cost of access to individual Caribbean citizens, businesses and Governments. Accordingly, it can be expected that without reform of how CARICOM members are connected, both to each other and to the wider world, that for every ICT-enabled communiqué , each CARICOM member will continue to have to pay the US intermediaries to facilitate that communication.

# 3 Project Rationale

# 3.1 Objectives

# 3.1.1 Overall Objectives

The overall objective is to create a telecommunications infrastructural environment that will allow for the implementation of enhanced hosting and e-commerce infrastructures within CARIFORUM, that will encourage the development of domestic "killer applications" such as those related to content and business services. Regional social networking, video and portal applications are likely to emerge but more particularly domestically domiciled business services - such e-Business, e-Commerce and Electronic Payment services - will dramatically increase Regional internet usefulness, relevance and penetration. Such developments will liberate the internet paradigm of utilisation in the Caribbean from its current restriction to mainly research and entertainment usage, catapulting it indelibly into the day-to-day economic fabric of the lives of Caribbean citizens.

## 3.1.2 Specific Objectives

- Direct connection between users on different islands through intra-National and/ or intra-Regional points of inter-connectivity between different fibre cables traversing the Region – hence reducing the need to access facilities in Miami to facilitate intra-regional movement of traffic; and extending these facilities south beyond the Caribbean to Latin America – making the Caribbean networks preferred "trans-shipment" routes for bits and bytes moving from North to South America.
- 2. The development of national, if not regional IXPs which allow the direct interconnection of ISPs within the region, without the use of the North American transit providers. The establishment of at least one IXP will also increase regional ICT network robustness and security by encouraging the regional deployment of complementary internet infrastructures such as:
  - The expansion of domestic hosting facilities to support the domestic content and application development industries;
  - Internet Root Server(s) to facilitate the mirroring of international content in the region;

- Internet time servers; and
- Regional e-commerce infrastructures to promote increased penetration of domestic economies in the utilisation of the methods of e-trade. This kind of infrastructure located within the Region will encourage least-cost-routing of National and Regional traffic, provide increased resiliency in the instances of extra-regional communication failures and cyber-attacks. It will also decrease internet latency, thus improving the end-user experience of ICT-based services across the Region.

#### 3.1.3 Expected Results

- 1. An Internet architecture within the Region that will enable/encourage least-cost-routing of national and regional traffic, provide increased resiliency in the instances of extra-regional communication failures and cyber-attacks. It will also decrease internet latency thus improving the end-user experience of ICT-based services across the Region.
- 2. A Regional Telecoms Infrastructural environment that will encourage the development of domestic "killer applications" such as those related to content and business services. Regional social networking, video and portal applications are likely to emerge but more particularly, domestically domiciled business services such as e-Business, e-Commerce and Electronic Payment services will dramatically increase Regional internet usefulness, relevance and penetration. Such developments will liberate the internet paradigm of utilisation in the Caribbean from its current restriction to mainly research and entertainment usage, catapulting it indelibly into the day-to-day economic fabric of the lives of Caribbean citizens.
- 3. The further evolution of Caribbean-based networks to "trans-shipment" facilities North and South America would create opportunities for additional revenue streams for the regional carriers, due to the additional North – South traffic on their networks. Further, such network architecture would further encourage the regional citing of content for application service providers with clientele on both the North and South American continents.

# 3.2 Stakeholders (Implementing Agency, Beneficiaries, Target Groups)

The implementation of the project will be best expedited through the collaboration of Regional telecommunications services providers and regulatory authorities, at least the members of The Caribbean Association of National Telecoms Operators (CANTO), but ultimately all telecommunications providers operating within the Caribbean basin. However, individual territorial governments or CARIFORUM as a whole can spearhead this project's implementation.

There are a number of key stakeholders that will be engaged to implement this programme. These include:

- 1. **Telecommunications services providers across the region**. This stakeholder group can be segmented into:
  - terrestrial operators (sub-national and national service providers); and
  - submarine facility operators (providers who facilitate international transport).

From the perspective of the terrestrial operators, ultimately, their assent to connect and route traffic at national and regional levels shall be the driver to encourage the submarines' facility owners to

restructure the service provided. However, there are considerable organizational arrangements that must be established before either stage can be effectively implemented.

- 2. The Caribbean Telecommunications Union (CTU) which is the regional agency charged with oversight and harmonisation of the telecommunications space, in conjunction with regulatory authorities and other stakeholders. As a key partner in the harmonization of rules and regulations, the CTU shall be critical with regard to addressing any regulatory questions that may need to be addressed to implement the initiative. Particular focus will be required with transregional aspects such as treating with the owners/ administrators of submarine cables within the region.
- 3. **Government and Regional Regulatory Authorities** with oversight for telecommunications will need to be engaged to ensure that activities that fall under this initiative are not deemed to be in contradiction of the variety of regulatory frameworks across the region. Further, there must be engagement to ensure that all concerns regarding continuous competitiveness of the domestic and regional markets are maintained, if not strengthened.
- 4. **Data Centre Owners/ Managers** will be key stakeholders as the utilization of their existing facilities will:
  - reduce the capital and recurrent cost of the initiative;
  - reduce the time required to implement the initiative; and
  - incentivise downstream activities such as commercial third party and ASP hosting that will benefit from collocation to Exchange Points;

# **3.3 Risks and Assumptions**

3.3.1 The main assumption is that Regional Telecoms see the business benefits of implementing a system of IXP and that they can agree to work their competitors and negotiate reasonable agreements with each other and with Regional Telecoms authorities.

3.3.2 There have been efforts to establish exchange points in the region that have not succeeded due to ineffective implementation that has not resulted in appropriate mainstreaming of the solution. These have not been as successful as anticipated due to a misunderstanding of the business value proposition to the target market, which has resulted in the establishment of costly systems that were unattractive. The willingness and ability of regional entities to share their experiences and the ability to leverage of IXPs and other telecommunications infrastructures that are within the Caribbean region, but are not part of CARIFORUM will have a significant influence in the development and success of this project.

# 3.4 Cross-cutting Issues (Gender, Environment, HIV, Poverty Reduction)

# 4 Project Implementation Strategy

# 4.1 **Project Components**

## 4.1.1 Component 1: Regional IXP Optimisation Study

This involves commissioning a study to determine the optimal number of national and regional internet exchange points to be deployed in the region, based on traffic generation profiles, existing submarine cable landings, and pre-existence of necessary / complementary support infrastructure. The aim is to determine the appropriate architecture of the regional routing system.

## 4.1.2 Component 2: Operational Model Development

Develop an appropriate business model(s) and framework(s) of administration, including establishing appropriate contracts, agreements and memoranda of understanding, and/ or rules of engagement/ operation which may be needed to engage county, national and/ or regional telecommunications providers in such a way as to support the establishment and continued operation of the IXP-based routing system. This will include the determination of:

- 1. the infrastructure requirements for the establishment of the IXP's to meet business requirements;
- 2. the appropriate model of participation, identifying the nature of membership, the cost of participation and exclusion, if any, that may apply;
- 3. the specific implementation frameworks which will guide the selection of specific partners in the provision of hosting and other support facilities as well as accessibility by membership;
- 4. the preferred model of governance, including determining the mutually agreed to administrator, that will be undertaken, with a view to minimizing recurrent costs associated with the operation of the core function elements of the Regional Routing system.

## 4.1.3 Component 3: Training + Market Development

This will involve focused engagements with regulators, trade organizations and other key stakeholders across the region to overcome any challenges with particular concern to trans-regional regulatory oversight that may arise. In that regard, the proposed action shall also provide the necessary training, capacity building, legal and policy support to ensure that all considerations with regard to long term management of operation within the regulatory context is appropriately elaborated upon. This stage will include:

- 1. legal establishment of business parameters and operation of the administrator;
- 2. establishment of frameworks to enshrine obligations of all parties in the operation of the core functional elements.

#### 4.1.4 Component 4: Establishment and Operation

Manage the initial and on-going engagements/ discussions/ negotiations with identified key stakeholders to ensure that the initiative is mobilized, with the participation of relevant parties (incl. Governments and regulators) to ensure broad acceptance by participants in the sector. This will incorporate and include establishing:

- 1. the governance team, its offices, systems and facilities;
- 2. the Exchange Points, including ensuring connectivity and managing start up;
- 3. coordinating routing adjustments among stakeholders/ members

# 4.2 Plan of Main Activities for Implementation of the Project

These are the immediate next steps required to implement the various streams of activity that comprise the Infrastructure component of CTC initiative:

- 4.2.1 Gain approval from stakeholders for overall project.
- 4.2.2 Formally establish the IXP Action Group with a clear Charter, member guidelines and regular meeting schedule; as well as a Project Office to oversee the execution of the programme. This Project Office should comprise of personnel dedicated full time to project implementation.

## Outcomes:

- Establishment of the project team and governance structure
- Project Kick Off
- 4.2.3 Project team to establish the terms of reference (TOR) for the Routing Optimisation, Business Model Studies, as well as Training and Market Development consultancies; obtaining approval / sign-off from the Steering Committee as required.

## Outcomes:

- Approved project scope and TOR documentation for preliminary IXP studies / consultancies
- 4.2.4 Project team to manage the procurement of consultant based on evaluation criteria, ensuring timely agreement and execution of contracts.

## Outcomes:

- Relevant specialists engaged and preliminary studies commenced.
- 4.2.5 Project team to ratify outputs of consultant workshops and stakeholder engagements, consolidating recommendations and ensuring timely and effective completion of deliverables.

#### Outcomes:

• Completion of technical and business strategy studies complete with consultant findings and model recommendations built in light of stakeholder engagements.

4.2.6 Submission of study process and findings to Steering Committee for confirmation, accession to findings and circulation to membership

## Outcomes:

- Recommendation of optimal number and location(s) of Regional/National IXPs
- The achievement of consensus and support for study findings
- Business Model for IXP(s) incl. template MOUs, contracts, governance, dispute resolution procedures.
- 4.2.7 Project team to facilitate the execution of the Training and Market Development consultancies as well as submission of required legal and other documentation to relevant authorities for the establishment of an IXP administrator.

## Outcomes:

- Legal establishment of the IXP administrator and further establishment of rights and obligations of partner stakeholder entities.
- Legal, technical and business training + messaging for telecoms
- The mainstreaming the concept of intra-regional routing and its benefits
- Letters of interest from potential operators, ISPs and value-added businesses
- 4.2.8 Project team to facilitate procurement, installation and commissioning of equipment at agreed routing hub location(s) and facilitate arrangements with hosting provider(s) toward start- up and operations

## Outcomes:

- Equipment and facilities in place to facilitate IXP(s)
- 4.2.9 Ratification of governance frameworks and MOU's developed in preparation for official startup of operations. Administrator enrolment of initial participants at routing hub locations. Members confirm connectivity, address broadcast and other technical considerations. Signing of agreements, MOUs.

#### Outcomes:

- Functional IXP with critical mass of users
- Complementary businesses and internet infrastructure operators generating new streams of revenue by leveraging the presence of the IXP
- 4.2.10 Project Review and Close Out.

## 5. Sustainability Issues

- 5.1 Arrangements for Monitoring & Evaluation
- 5.2.1 Performance indicators and targets
- 5.3.2 Institutional arrangements

# 5 Institutional and Resource Framework for Project Implementation

# 5.1 Project Organisation and Institutional Arrangements

The e-Business Roundtable is to be formally established with a clear Charter, member guidelines and regular meeting schedule. This Committee will be charged with overseeing the implementation of the e-commerce strategy. With regard to this project, the **Technology & Infrastructure Action Group**<sup>1</sup> (of the e-Business Roundtable will take the lead role in administering the implementation.

# **6 ANNEXES**

Phase Outlines	Budget Categories	Timeframe	Major Outputs	Sub-Costs	Total (Euros)
Phase I		(allow one r	nonth for procurement)		
Technical consensus on Regional Routing	Regional IXP Optimisation Study	2 months			34,500
architecture	Workshop Hosting costs			14,500	
	Consultancy to develop Regional IXP optimization Report		Preferred engineering design for holistic regional routing (one IXP or many? How are they configured)	20,000	
Phase 2					
Definition of the how the business of	Operational Model Development	3 months			54,500
routing vill be executed, and the development of frameworks outlining roles of all stakeholders in making the operations	Business and Legal Consultants to develop Business Model and Strategy for IXP(s), template MOU's, dispute resolution procedures etc.		operational model outlining governance, business sustainability parameters for the engineering design. Also develop draft legal agreements, processes etc. to guide operations of administrator in context of its clients	29,500	

# 6.1 Annex A: Logical Framework Matrix

<sup>&</sup>lt;sup>1</sup> (see: Regional e-Business Roundtable – Private Sector Lead Partnership with CARIFORUM States document)

					Total
Phase Outlines	Budget Categories	Timeframe	Major Outputs	Sub-Costs	(Euros)
sustainable	Consultant to develop Market survey to determine market revenue potential for downstream / upstream activities		determination of market opportunities for downstream activity beyond ISP cost savings (App service provider hosting etc.)	10,500	
	Workshop Hosting costs			14,500	
Phase 3					
Capacity building of	Training + Market Development	2 months			62,250
proposea administrator, as well as securing buy-	Workshop hosting costs			29,000	
in from government and regulatory authorities across the region	Legal, technical and business training + messaging (for CANTO and for telecoms)		training in the principles regarding ongoing management of administrator. Builds on outcome of line 9	33,250	

Phase Outlines	Budget Categories	Timeframe	Major Outputs	Sub-Costs	Total (US\$)
Phase 4					
Installation and commissioning of	Establishment and Operation	1 month			121,750
equipment, signing of agreements for a critical mass of users, beginning of operations of the regional routing	Legal support for the facilitation of Legal Establishment of IXP Administrator		<b>contingency cost</b> - required if need identified to register administrator as a legal entity, and supporting legal services	14,500	
Phase Outlines	Budget Categories	Timeframe	Major Outputs	Sub-Costs	Total (US\$)
---------------------------	---------------------	-----------	--	-----------	--------------
architecture			purchase and installation of IXP(s), and		1
	Operationalisation		telecoms equipment to act as terminating		
	of infrastructure -		points of ISP's. Presumes purchase of		
	including IXP and		two sets of same, though ultimately		
	demarcation point		dependent on technical architecture		
	infrastructure		developed out of line 6.	48,250	
			<b>contingency cost</b> - anticipated (max)		
			annual cost for hosting of facility at third		
	Annual hosting cost		party data centre	18,000	
	Support				
	infrastructure		contingency cost - required to support		
	including projected		inter-island communication links to		
	costs for intra-		realise technical architecture developed		
	regional bandwidth		in line 6	29,000	
	Projected Annual		Projected cost for an on-call service to		
	Ops cost		provide for maintenance.	12,000	
Project Administration					
Administration					
	Project Team	monthly		6 months	108,750
	Project Lead	6000		36,000	
	Stream Lead (1)	4000		24,000	
	Technical Officer				
	(1)	2000		12,000	
	Administrative /				
	Communication				
	Officer (1)	2500		15,000	
	Administrative				
	Costs (~25% Costs)			21,750	
	Project Total				381,750

## 6.2 Annex C: Detailed Budget

This activity is expected to take approximately one year to come to completion

### 1. Component 1: Regional IXP Optimisation Study.

The budget is based on:

- (i) Estimated consultancy fees (€ 15,000 or US\$21,750)
- (ii) Travel and accommodation costs (€ 5,000 or US\$7,250)
- (iii) Workshop Hosting costs (€ 5,000 or US\$7,250)

### (2-3 months, € 25,000 or US\$36,250)

### Output:

Recommendation of optimal number and location(s) of Regional/National IXPs (To achieve one vision, consensus and support at the technical level)

### 2. <u>Component 2: Operational Model Development</u>.

The budget is based on:

- (i) Estimated fees Business Development (€ 10,000 or US\$14,500)
- (ii) Estimated fees legal support (€ 20,000 or US\$29,000)
- (iii) Market Development Strategy Report (€ 4,000 or US\$5,800)
- (iv) Travel and accommodation costs (€ 5,000 or US\$7,250)
- (v) Meeting and Seminar Hosting costs (€ 5,000 or US\$7,250)
- (vi) 14% Contingency (€ 6,000 or US\$8,700)

### (2 months, € 50,000 or US\$72,500)

### Outputs:

- 1. Business Model for IXP(s).
- 2. Identification and estimation of new revenue opportunities given an IXP.
- 3. Template MOUs, contracts, governance, dispute resolution procedures, etc.
- 4. Letter's of interest from potential operators, ISPs and value-added businesses.

### 3. <u>Component 3: Training + Market Development</u>:

The budget is based on:

- (i) Estimated fees Training facilitator, technical (€ 25,000 or US\$36,250)
- (ii) Estimated fees Training facilitator, policy and legal (US\$29,000)
- (iii) Travel and accommodation costs (US\$29,000)
- (iv) Seminar & Workshop Hosting costs (US\$14,500)
- (v) 14% Contingency (US\$15,225)

### (2.5 months, US\$124,700)

### Outputs:

- 1. Legal establishment of CANTO as the IXP administrator and further establishment of rights and obligations of partner stakeholder entities.
- 2. Legal, technical and business training + messaging (for CANTO and for telecoms)

### 4. <u>Component 4: Establishment and Operation:</u>

The budget is based on:

- (i) Establishment and operation of Project Management Office (US\$21,750)
- (ii) Infrastructure and equipment IXP (US\$36,250)
- (iii) Estimated fees legal support (US\$14,500)
- (iv) Communications links IXP (US\$29,000)
- (v) 14% Contingency US\$14,210)

(15 months, US\$115,710)

### Outputs:

- 1. Functional IXP with critical mass of users.
- 2. Complementary businesses and internet infrastructure generating new streams of revenue by leveraging the presence of the IXP.
- **6.2.1** Discussion of Recurrent Cost to support the CTC Infrastructure Component: If successfully implemented, the infrastructure component's recurrent cost should be transparent to the coordinating body.\_The IXP itself is a resilient piece of infrastructure that requires minimal support to maintain. Once implemented within the necessary environment, the switch at the core of the IXP requires practically zero maintenance, save when the equipment is being replaced something that will be expected every seven to ten years. Accordingly, the majority of the recurrent cost would be associated with the cost of:
  - leasing the location in which it is hosted. Canny negotiation may facilitate that this cost is minimized. There is much precedent for hosts to provide this service at minimal cost, and sometimes free of charge, due to the ancillary benefits the host is expected to accrue by the placing of the preferred IXP at his facility. If this fails, it can be estimated that this cost should not exceed US\$1200 a month – which would include manned support for the infrastructure as part of the package; and
  - Administration costs outsourced consulting support on retainer plus one additional research officer added to the Secretariat staff dedicated to IXP for the first year and half time, after year 1. (US\$ 30,000 per year)

### **Budget Summary**

Item	Cost (Euros)
optimal mix of internet exchange points	66,250
business model(s), frameworks of administration	72,500

training, capacity building and policy support	124,700
the start-up and on-going engagements	103,455
Recurrent Cost	30,000
Total	396,905

# 6.3 Annex D: Related Donor Funded Projects

6.3.1 Regional e-Business Roundtable – Private Sector Lead Partnership with CARIFORUM States document.

# Regional Online B2B Marketplace Project Document- Reducing the Barriers for the Development Regional e-Business

## 1 Introduction

Many developing countries possess a primary export industry which disproportionately contributes to their GDP and national wealth. Examples of these include the oil industry in Venezuela, precious minerals in Angola, and columbite-tantalite (coltan) in the Congo. In the Caribbean these commodity exports have historically included natural gas, bananas and Tourism, among others.

However, a prototypical feature of these economies is their unstable and unsustainable nature due to changes in preferential market access arrangements, depleting reserves and a host of other possible market structure shocks - which have historically left Regional economies vulnerable to international commodity price fluctuations as well as substitution risk as technology advances and reserves dwindle. These changes invariably have detrimental social and economic affects on the nations and societies in question.

Caribbean territories by-and-large exhibit the characteristic profile of post colonial developing countries which:

- 1. Rely heavily on a single export facing industry to make the major contribution to national wealth and GDP.
- 2. Possess dominant productive sectors which are natural resource-based and have been subject to the fluctuations and vagaries of the world market over the last 30 years throwing the host economies into prototypical booms and slumps.
- 3. The productive sectors are many times foreign investor-led and thus much of the value and returns created by the sector do not remain in-country.
- 4. The local skill base has mainly been developed in the operational and maintenance (low-value added) aspects of the sector, while the strategic managerial, marketing and technology aspects have been provided by external partners.

However, transitioning a traditionally less-developed Region and society forward into one which is based on knowledge and innovation rather than legacy products will entail the adoption of more productive company strategies, requiring more highly skilled people, better information, more efficient business arrangements, improved e-commerce infrastructure, more advanced research institutions and the incorporation of ICT into the core processes of Regional Business, among other things.

Businesses must be encouraged to embrace the internet as a competitive and productivity tool. Small businesses must be encouraged to innovate and increase the knowledge component of their products - grasping the technology-based tools which now allow them to compete in arenas formerly the exclusive domain of Multi-nationals. This is not simply a "nice to have"; for the Caribbean, it is a critical requirement to assure the continued *relevance* of many of its economies.

## 2 Strategic Context and Project Justification

By and large the Region's business culture is generally risk averse, described by many as having a "trading" rather than a truly entrepreneurial mentality. Further, there is a lack of framework and infrastructure for the sharing of best practices amongst the different countries which are at different

stages of ICT/economic development A cultural shift to promote entrepreneurship is therefore critical to the long term development of the region, and ICTs are seen as a vehicle for businesses and in particular Micro Small Medium Enterprises (MSMEs) to gain confidence in entrepreneurial pursuits.

Small businesses and individuals who see the possibilities that software applications and e-business present are unaware of how to take advantage of the opportunities or are discouraged by the costs of setting up and maintaining an ICT or e-Business infrastructures of their own. Medium and Large firms who can afford to implement e-Business do not know what is required and the R&D and ICT expertise required to find out is both expensive and scarce.

Notwithstanding, at the very least, remaining near the technological frontier is a minimum precondition to global competitiveness and associated economic growth. However, many businesses in the Caribbean aren't sufficiently aware of the practical link between ICT their continued economic sustainability (or even relevance).

ICTs can increase operational efficiency, allow businesses to better serve clients, and provide a platform for employee innovation. It is in this use of ICT - incorporating knowledge and insights from the environment into higher value, branded Caribbean products – i.e. working smarter - which lies the key to economic success and sustainability, not only for small business but also for the Regional economy as a whole.

## 3 Project Rationale

## 3.1 Objectives

### 3.1.1 Overall Objectives

The overall objective is to Kick-start the e-business climate amongst the regional business sector by reducing the barriers that hinder or prevent MSMEs from taking advantage of ICT applications and e-Business techniques to grow their businesses – i.e. giving Regional business access to the ICT tools which will expand their ability to access Regional /global opportunities as well as profit from them.

### 3.1.2 Specific Objectives

The implementation of a Regional Electronic Marketplace (e-Marketplace) to facilitate the on-line matching of international business / investment opportunities, and that allows regional exporters to market to regional and overseas buyers is a necessary step reducing the barriers to conducting e-Business, especially for the Region's smaller firms.

This e-Marketplace will provide a common space where buyers, sellers, and other stakeholders can post and exchange products and intellectual capital in real time, and where real opportunities for business growth can be obtained.

The e-Marketplace will also provide quick access to essential Government business information in an effort to reduce the time and cost of doing business with Government. It is recognised that in many Caribbean territories, Government is the largest employer, and that Government-to-Business opportunities are the bread and butter of many firms.

### 3.1.3 Expected Results

- From the buyers point of view an e-Marketplace allows a business to automate its purchasing procedures. This automation allows efficiencies that reduce transaction processing costs, as the process of asking and receiving quotes, enquiries, purchase orders and invoices are all done within a single virtual system. Because the e-Marketplace is essentially a virtual community, Current information of trade leads and products vital for making accurate buying decisions is readily available. This and access to supplier information are efficiently available.
- From the seller's side a low cost, highly functional and easy-to-use sales channel for business is opened. The seller's business and products are now easily visible and available to purchase to new target audiences that otherwise would have been reachable.
- Since the buyers come to e-Marketplace themselves the cost of getting customers through this channel is relatively low in comparison to other traditional channels. Also the sharing of product information is easier and more efficient.
- The results of successfully implementing the regional e-Marketplace should be the reduction in the cost barriers to conducting e-Business in the region and crating the opportunities for businesses to operate a efficiency level that are comparable to those of e-business in the best developed e-business in the world.

## 3.2 Stakeholders

The Implementation Agency of this project will preferably be a Regional Business development Institution such as the Caribbean Export Development Agency. However, individual territorial governments or CARIFORUM as a whole can spearhead this project's implementation.

There are a number of key stakeholders with which will be engaged to implement this programme as follows:

### 1. <u>Regional Businesses (Caribbean MSMEs)</u>

The goal is to reduce the barriers that regional Businesses, particularly MSMEs, currently face in conducting e-Business and expanding their reach and their ability to access markets across the Region. This stakeholder group is of primary concern in this endeavour and is the group to directly benefit from the success of this project.

### 2. <u>Regional Business Development and Facilitation Companies</u>

These are organizations that facilitate the development of businesses by providing their clients with training, financial support, international business promotion, consulting and business advisory services. Within the Caribbean, many of these entities are supported by the state and mandated to develop local businesses. This stakeholder group will have considerable insights into the local and Regional SME and business climate and would be uniquely positioned to market the platform to their clients and facilitate business authentication and registration services for the B2B marketplace.

### 3. <u>Regional Governments (CARIFORUM Governments)</u>

Regional governments have a stake in the success of the B2B e-Marketplace as many of them are pursuing policies and strategies of their own to empower their own business communities to employ ICTs and e-Business processes in their operations. Additionally, the successful uptake of the proposed

platform by SMEs many well depend on its support from these stakeholder governments, demonstrated by their use of the e-Marketplace for their procurement and tendering processes.

### 4. <u>Regional Business Chambers.</u>

Chambers of Industry and commerce throughout the Caribbean stand to benefit their members and their own profiles through participation in this initiative. Business Chambers generally have a deep and broad understanding of the regional business climate and the specific issues that their members face with regards to ICTs and e-Business. Thus the insights and linkages of this stakeholder group will be sought, in addition to their assistance in reaching out to the business community at large for the promotion and uptake of the platform.

### 5. <u>Regional ICT/Technology companies</u>

This group includes Regional ICT and technology companies that have expertise in web hosting, web development, e-Commerce, e-Business and e-Payments services. These businesses will have the expertise to determine the specific technology requirements, costs, development timelines and appropriate business and administration models for the development and deployment of the e-Business Marketplace.

### 6. <u>Regional Banks and Financial Institutions</u>

E-Business requires that parties are able to pay for and receive payment for goods and services rendered. Regional banks and financial institutions must be onboard so that solutions regarding electronic transactions, e-Payments, and the related policy and legislative issues that may be encountered as a result of conducting e-Business across Caribbean territories can be explored and implemented.

### 7. Other Important Regional Stakeholders

This group will primarily include important policy and legal advisors from each of the Caricom territories with insight into Regional trade and commerce laws, data protection, e-Transactions, e-Commerce etc.

### 3.3 Risks and Assumptions

- 3.2.1 The main assumption is that allow the relevant regional stakeholders are willing and able to collaborate in the deployment of an e-Marketplace initiative that aims to penetrate the CARIFORUM region and allow regional businesses to access opportunities further abroad.
- 3.2.2 There are several e-Marketplace operated by state sector entities throughout the Region. It will be necessary to engage the owners of current e-marketplace initiatives in order to garner support and synergies for the implementation of this project.
- 3.2.3 There have been some previous attempts by governments/entities within the Region to implement e-Marketplaces that have not succeeded. The willingness and ability of regional entities to share their experiences and confidence in pursuing a Regional e-Marketplace will have a significant influence in the development of this project.

## 3.4 Cross-cutting Issues (Gender, Environment, HIV, Poverty Reduction)

## 4 **Project Implementation Strategy**

## 4.1 **Project Components**

### 4.1.1 Component 1: Stakeholder Engagement Regional, SME E-Readiness Assessment and International Best Practice Report

The purpose of this first phase is to understand the Regional SME and e-Business environment through consultations with the relevant stakeholders and in particular regional SMEs, and to determine and understand the various models that can be deployed in the Caribbean context. This phase will include:

<u>A Regional SME Assessment/E-Readiness Report</u>, the purpose of which is to, assess and report on the current e-Readiness of Caribbean SMEs to participate in a Regional B2B e-Marketplace, human capacity (skills) and infrastructure needs of SMEs. This will also involve an Analysis and report on the application services demanded within the e-Marketplace.

<u>An International Best Practice Report – The main aims of which are:</u>

- 1. To examine several Countries' Online B2B Marketplace initiatives in jurisdictions with similar or relevant size and economies to the Caribbean region.
- 2. To identify and provide full details of the various models used, including those models that can be used as a baseline for the Caribbean in developing an appropriate e-Marketplace.
- 3. To layout the appropriate conceptual/legal frameworks under which these models operate.

<u>The Design and Delivery of SME Workshops</u> – This deliverable involves the specific design and delivery of several SME Workshops in several of the most important stakeholder territories, as SMEs are the most important stakeholders in the proposed B2B e-Marketplace initiative.

### 4.1.2 Component 2: Operational Model Development B2B e-Marketplace Business Strategy for Caribbean Implementation

The creation of an integrated and comprehensive e-Business Strategy for the B2B e-Marketplace developed through consultation and participation with the all stakeholders and flowing from the processes and deliverables from **component 1** above. This will include:

- 1. Detailed timelines, identifying and supporting the actions required by the different stakeholders in the public and private sectors;
- 2. Budget and financial plan;
- 3. Capital and development costs, by type of activity and by financing source;
- 4. Operational plan, including managerial costs and financing source
- 5. Organizational plan for the management and operation of the B2B Marketplace including job specifications for key personnel;
- 6. Policy, regulatory and legal issues that must be addressed;
- 7. Performance indicators and milestones; and
- 8. Evaluation methodology and mechanism.

### 4.1.3 Component 3: Training + Market Development Pilot/Prototype SME B2B e-Marketplace

This phase entails\_the development and launch of a Pilot/Prototype B2B e-Marketplace and active trading with at least thirty (30) SME participants drawn from across the Region. This prototype will be a fully functional working application that includes all of the elements of the Business Strategy including financial, technical, marketing and operations of the marketplace.

The prototype will be flexible and scalable as will be modified and evolved into a full B2B e-Marketplace in the medium term.

This will involve focused engagements with regulators, trade organizations and other key stakeholders across the region to overcome any challenges with particular concern of trans-regional regulatory oversight that may arise. In that regard, the proposed action shall also provide the necessary training, capacity building, legal and policy support to ensure that all considerations with regard to long term management of operation within the regulatory context is appropriately elaborated upon. This stage will include:

- 1. legal establishment of business parameters and operation of the administrator;
- 2. establishment of frameworks to enshrine obligations of all parties in the operation of the core functional elements

### 4.1.4 Component 4: Final Deployment of B2B e-Marketplace

This stage involves the evolution of the prototype e-Marketplace of Phase 3 and its public deployment culminating in active trading for Caribbean businesses wishing to employ the platform. This final deployment of the e-Marketplace should begin exactly one (1) year after the commencement of Phase 1 and should publicly available three (3) months after. The objective of which is to implement the regional e-Marketplace bringing to bear the associated administrative, legal, branding, operational and physical infrastructures proposed in previous phases of the project.

### 4.1.5 Component 5: On-going Engagement Post Public Deployment

A clear and appropriate "recurrent" governance framework to support the ongoing management and operation of the e-Marketplace and of eventual business and technology owners. During Phases 1 through 4, ongoing stakeholder engagement, branding, marketing and maintenance of the platform will be necessary. These functions must also be continued after final deployment of the platform. The B2B e-Marketplace platform and its associated governance and administration structures will be reviewed three (3) years after public deployment.

## 4.2 Plan of Main Activities for Implementation of the Project

These are the immediate next steps required to implement the various streams of activity that comprise the different components of the e-Marketplace initiative:

- 4.2.1 Gain approval from the relevant stakeholders for the specific key projects and initiatives defined within as well as the associated budget.
- 4.2.2 Formally establish a Steering Committee with a clear Charter, member guidelines and regular meeting schedule; as well as a Project Office to oversee the execution of the programme. This Project Office should comprise of personnel dedicated full time to project implementation.

### Outcomes:

- Establishment of the project team and governance structure
- Project Kick Off
- 4.2.3 Project team to establish the terms of reference (TOR) for the Design and Delivery of Stakeholder Workshops, SME e-Readiness Assessment Report, International Best Practices Report Online MSME B2B Marketplace Business Strategy; obtaining approval / sign-off from the Steering Committee as required.

### Outcomes:

- Approved project scope and TOR documentation for preliminary e-Business facilitation studies / consultancies
- 4.2.4 The Steering Committee's Project team to manage the procurement of consultant based on evaluation criteria, ensuring timely agreement and execution of contracts.

### Outcomes:

- Relevant specialists engaged and preliminary studies commenced
- 4.2.5 Project team to ratify outputs of consultant workshops and stakeholder engagements, consolidating recommendations and ensuring timely and effective completion of deliverables.

### Outcomes:

- Completion of technical and business strategy studies complete with consultant findings and model recommendations built in light of stakeholder engagement
- 4.2.6 Submission of study process and findings to Steering committee for confirmation, accession to findings and circulation to relevant stakeholders.

### Outcomes:

- Recommendation of suitable network design and technical architecture.
- The achievement of consensus and support for study findings
- Business Model for e-Marketplace incl. template MOUs, contracts, governance, dispute resolution procedures.
- Identification of Business Owner(s)
- 4.2.7 Project team to facilitate the execution of the Training and Market Development consultancies as well as submission of required legal and other documentation to relevant authorities for the establishment of the business owner as required.

### Outcomes:

- Legal establishment of the Business owner as the e-Marketplace administrator and further establishment of rights and obligations of partner stakeholder entities.
- Legal, technical and business training + messaging (for business owner and key stakeholders)
- The mainstreaming the concept of an electronic intra-regional business platform and its benefits
- Letters of interest from potential complimentary vendors, banks, ISPs and other value-added businesses
- 4.2.8 Project team to facilitate development of a pilot marketplace, built based on international best practices as well as Regional stakeholder input.

### Outcomes:

- Pilot platform and arrangements in place to facilitate e-Marketplace
- 4.2.9 Ratification of governance frameworks and MOU's developed in preparation for official startup of operations. Administrator enrolment of initial participants. Signing of agreements, MOUs as required.

### Outcomes:

- Functional Pilot marketplace with critical mass of users
- Complimentary businesses arrangements and internet infrastructure generating operators generating new streams of revenue by leveraging the presence of the IXP
- 4.2.10 Project Review and Specifications for full blown marketplace.

### 5.3 Sustainability Issues

### 5.4 Arrangements for Monitoring & Evaluation

- 5.4.1 Performance indicators and targets
- 5.4.2 Institutional arrangements

## 5 Institutional and Resource Framework for Project Implementation

## 5.1 **Project Organisation and Institutional Arrangements**

The e-Business Roundtable is to be formally established with a clear Charter, member guidelines and regular meeting schedule. This Committee will be charged with overseeing the implementation of the e-commerce strategy. With regard to this project this Roundtable through the following two Action Groups<sup>1</sup> will be involved:

<sup>&</sup>lt;sup>1</sup> (see: Regional e-Business Roundtable – Private Sector Lead Partnership with CARIFORUM States document)

- Financial, Institutional, Logistical & Legal Action Group
- <u>Technology & Infrastructure Action Group</u>

### 5.1.1 Principle Management Roles

Management roles will be defined in accordance with the various (business) activities that occur in the delivery of the service.

Details of the approach may be debated and changed as concrete implementation is being considered. Several managerial and operational roles are required to provide a sustainable service that is relevant, and effect a management environment that is clear and reactive to ongoing and changing needs. The principle roles that need to be fulfilled for ongoing service are as follows:

**Business Owner** – the organization that is the "owner" of the core application software product / service utility and toolkit upon which specific services can be delivered. It is not essential that a business owner have material possession of technology to ensure that it performs in the manner that they want.

**Technology Operator** – the organization that manages the day-to-day operations for such services as promotion, assistance, help calls, administrative functions, abuse monitoring and choices needed. Included here, for convenience of discussion, is the technology hardware, operating systems, utilities and communications.

**Registration Authorities** – organizations that validate and verify that registrants in the service are bone fide clients and of good status. Services include that participants are legitimate and have a standard of business conduct so as to not detract from the public attractiveness of the service.

## 5.2 Resource Requirements

## **6 ANNEXES**

Phase Outlines	Budget Categories	Timeframe	Major Outputs	Sub-Costs	Total
Phase I		(allow one i	nonth for procurement)		
	Regional Business e-Readiness Assessment	2 mths			44,500
Feasibility studies to determine and understand the e- marketplace model(s) that can best be deployed in the Caribbean	International Best Practices Report		A review of successful e-Marketplace initiatives and a recommendation for the deployment of a similar platform in the Caribbean.	14,000	

### 6.1 Annex A: Logical Framework Matrix

Phase Outlines	Budget Categories	Timeframe	Major Outputs	Sub-Costs	Total
context.					
	Design and Delivery of Stakeholder Workshops	,	To orient and solicit feedback from Regional business concerning their requirements of such a platform	14,500	
	e-Readiness Assessment Report		An assessment of the current e-Readiness state of the Regional Business sector and evaluation of the human capacity (skills) and infrastructure needs of SMEs across the Region	16,000	
Phase 2					
The creation of an integrated and	Operational Model Development	1.5 mths			44,000
Business Strategy for the B2B e- Marketplace developed through consultation and participation with the all stakeholders and flowing from the processes and deliverables from Phase 1 above	Consultants to develop Business Model and Strategy for e-Marketplace , template MOU's, dispute resolution procedures etc., incl. the revenue model to determine sustainability of the e-Marketplace initiative		Operational model outlining governance, business sustainability, parameters for the engineering design and market growth opportunities. Also develop draft legal agreements, processes etc. to guide operations of administrator in context of its clients	29,500	
	Workshop Hosting costs			14,500	
Phase 3					
Identification and capacity building of proposed Business	Training + Market Development+ Pilot	3.5 mths			119,5(
owner, as well as securing buy-in from government and	Workshop hosting costs		Cost of travel accommodation, and seminar setup costs across the Region	14,500	
Business communities across	Legal, technical and business training +		training in the principles regarding ongoing management of administrator.	23,250	

Phase Outlines	Budget Categories	Timeframe	Major Outputs	Sub-Costs	Total (
Region. This Phase also includes the actual implementation of the Pilot Platform	messaging (guidance material, for end users, administrators and marketers)		Builds on Market Development done in preceding Phase.		
	Pilot Platform Development		Actual implementation of Pilot e- Marketplace site and other facilitative virtual and non-virtual arrangements	81,750	

Phase Outlines	Budget Categories	Timeframe	Major Outputs		Sub-Co
Phase 4					
	Commissioning, Operation and Enhancement	6 months			114,50
Installation and commissioning of equipment, signing oj agreements for a critical mass of users, beginning of	Legal support for the facilitation establishment of e- Marketplace Business Owner		To register Business Owner as a legal authority, define supporting legal services levels etc, and effect transfer of assets the identified entity.	14,500	
operations of the regional e- Marketplace architecture	Provision for Development updates and Hosting		Anticipated annual cost for hosting costs as well as costs for feature updates during the period	10,000	
	Projected Ops cost		<b>Contingency Cost</b> - Projected cost for operational / Business Owner Support for initial six (6) months. Business Owner will be required to take over operational / marginal costs through the determination of an appropriate revenue model	90,000	

Phase Outlines	Budget Categories	Budget Categories Timeframe Major Outputs				
Project Administration						
	Project Team	monthly		6 months	108,7	
	Project Lead	6000		36,000		
	Stream Lead (1)	4000		24,000		
	Technical Officer (1)	2000		12,000		
	Administrative / Communication Officer (1)	2500		15,000		
	Administrative Costs (~25% Costs)			21,750		
	Project Total				431,2	

## 6.2 Annex B: Project Work Plans

## 6.3 Annex C: Detailed Budget

- 1. Caribbean B2B e-Marketplace Steering Committee / Secretariat Administration Expenses. (12 months, US \$50,000)
- 2. Consulting services to conduct stakeholder engagement workshops and produce the Regional SME E-Readiness Assessment, International Best Practice Report and the B2B e-Marketplace Strategy. (4 months, US \$85,000)
- 3. Deployment of the Pilot/Prototype B2B e-Marketplace and active trading among pilot project participants. (6 months US \$250,000)
- Final Deployment of the B2B e-Marketplace, inclusive of consulting services, software, Hosting, housing, marketing and branding of the platform along with registration and user support.
  (3 months, US \$ 100,000)
- 5. On-going marketing, branding, promotion and support. (3 years, US \$100,000)
- 6. Contingency costs and ongoing maintenance and support for one year. (3 years, US \$100,000)

## 6.3.1 Budget Summary

Component	Cost (US\$)
Steering Committee / Secretariat Administration Expenses	50,000
stakeholder engagement workshops	85,000
Pilot/Prototype B2B e-Marketplace	250,000
Final Deployment	100,000
On-going marketing, branding, promotion and support	100,000
Contingency costs and ongoing maintenance	100,000
Total	685,000

## 6.4 Annex D: Related Donor Funded Projects

6.4.1 Regional e-Business Roundtable – Private Sector Lead Partnership with CARIFORUM States document.

# A Regional Support Programme for the Services Layer

### 1 Introduction

The e-commerce maturity framework (Figure 1) suggests that the starting point for efforts to promote ICT and e-commerce is at the infrastructure level, which has several dimensions. An appropriate legal and regulatory framework must be laid down, accompanied by the hard telecommunication and connectivity infrastructure. But 'softer' infrastructure such as citizen awareness is also a requirement from an early stage.

Once this fundamental platform has been achieved, application and content services begin to proliferate. The availability of relevant services serves as a catalyst to widespread ICT/e-commerce adoption, and a formal ICT industry/sector begins to develop. Once there is in existence an acceptable basic foundational infrastructure, the next pertinent issue is that of encouraging, developing and enabling internet enabled services. These are illustrated in the "services layer" in Figure 1.

Eventually, if appropriate policy actions continue to be pursued, the host economy will ultimately become a net exporter of both knowledge and physical products, enabled by the advanced use of the tools and methods of e-commerce/e-business.



### Figure 1: e-Commerce Maturity Framework<sup>1</sup>

<sup>&</sup>lt;sup>1</sup> This ICT Maturity Framework (2008) copyrighted to Atiba Phillips of INFOCOMM technologies Ltd based on work done to develop various National ICT Strategies for the Government of Trinidad and Tobago.

The main focus of this programme is to provide targeted and focused actions dedicated to encourage the emergence of e-commerce services. The emphasis is on enabling individual firms and consumers to engage in e-commerce.

## 2 Strategic Context and Project Justification

### 2.1.1 Strategic Introduction

The strategic approach is to work at several levels at once, to create an atmosphere in which ecommerce can begin to take hold and to build a critical mass of content, of users and markets. There are a number of components:

### 2.1.2 Component 1: E-Commerce Strategy Development Toolkit for SMEs

The research has identified a lack of understanding of E-Commerce, as a major blockage to implementation among SMEs. This points to a lack of materials that are readily accessible, easy to understand and useful in this domain.

### 2.1.3 Component 2: Regional e-Payment Infrastructure

In respect of e-commerce, the Article 52 of the Revised Treaty of Chaguaramas<sup>2</sup> states:

"The Member States undertake to establish and maintain appropriate macro-economic policies supportive of efficient production in the Community. In addition, they shall undertake to put in place arrangements for, inter-alia:

(a) effective payment mechanisms;

(b) the avoidance of double taxation;

(c) harmonised legislation in relevant areas;

(d) the elimination of bureaucratic impediments to deployment of investments in industrial enterprises;

(e) the improvement of infrastructure and co-operation in the areas of air and maritime transport;

(f) communications systems."

Further, CARICOM governments have, on record, expressed their intention to create service-based economies and several countries have begun developing and implementing national ICT plans and policies to leverage available technologies. These actions have the ability to move toward the harmonisation of integrated CARICOM economies, strengthening initiatives towards an intelligent CSME.

### 2.1.4 Component 3: A Regional Tourism Sectoral eCommerce Strategy

The CARIFORUM/EU EPA has identified SMEs in the tourism sector as potentially gaining significant benefits from the implementation of Internet marketing strategies and e-commerce activities, and an area for inter-regional cooperation. An overall sectoral approach to supporting e-commerce, as

<sup>&</sup>lt;sup>2</sup> Revised Treaty of Chaguaramas 2002, ARTICLE 52 - Implementation of Community Industrial Policy; available from: <u>http://www.caricom.org/jsp/community/revised\_treaty-text.pdf</u>.

distinct from an approach that targets SMEs in general, has been effective elsewhere by concentrating the resources on sectors that can gain the most and ensuring that each link in the chain is supported. A sectoral approach also offers an example of best practice to other areas that may be then encouraged to become involved.

A Sectoral e-commerce approach goes well beyond simply making tourism services available line as a convenient way for customers to view and purchase existing tourism products, though that is one aspect of it. E-Commerce can also enable SMEs identify and reach new markets; facilitate new products through for instance remote itinerary planning; improve the quality of service in the tourism product itself; establish and maintain an interactive relationship with the customers; reduce operating costs; reinforce regional branding; and support new business partnership.

### 2.1.5 Component 4: An e-Government Regional Support Programme

The development of e-government services is a matter for each government. Such services by nature are developed in a unique environment in terms of constraints, priorities and sequencing, administration and funding. However, there is much to be shared among different countries that can be of mutual benefit in terms of implementing best practice, sharing of development costs, improving cross-border service provision both for nationals and non-nationals, and integrating services and enabling cross-border interactions between SMEs and public administrations.

### 2.1.6 Component 5: A Study for an Automated Customs System

Fully automating customs and duties systems, speeding up, simplifying transactions and reducing costs for importers and exporters, is often a critical supporting factor for engaging in international ecommerce. A fully automated system reduces or eliminates paperwork, saves significant time and effort, and enhances reliability of service. It also enables the rapid and efficient collection of duties, and taxes for e-commerce, and ongoing clearance for exports and imports.

The international standard in this area is ASYCUDA (Automated System for Customs Data), developed by UNCTAD and implemented in over 80 countries, including in some CARIFORUM Member States<sup>3</sup>. ASYCUDA is implemented in components, can be partial or complete, and can link directly to e-government services. The implementation of ASYCUDA in CARIFORUM countries is uneven both in relation to overall levels of deployment and in relation to the extent to which they are geared towards the specific needs of e-commerce. Regionally, the Customs Automated Services (CASE) is a Caribbean developed system (developed in Jamaica) which is E-commerce ready and heavily used in G2B automated customs processing and payments in Jamaica and Antigua. The transfer of this system to Antigua was done via OAS and ICA and Gateway Developing Foundation, and other International donors. The intention was to transfer the system to the other OECS countries.

Implementing or enhancing a system such as ASYCUDA or CASE in a coordinated and standard manner could significantly facilitate rapid and smooth e-commerce within the region, but also externally with the European Union, the US and elsewhere. Considerable savings may also be generated through sharing the software, training and other costs involved.

<sup>&</sup>lt;sup>3</sup> See a Case Study of implementation in St Lucia at http://www.asycuda.org/CaseStLucia.pdf

### 2.1.7 Component 6: B2C Caribbean e-Commerce Portal

A business-to-customer e-commerce portal allows a group of producers in similar or overlapping sectors to market their goods on a single platform, an international online 'shop window'. Where it may not be viable for each SME to develop such a facility, grouping together can reduce costs of both marketing and transport, enable access to specialist expertise and services, build a common brand, and support market analysis and outreach. Examples might include skilled artisanal products such as jewellery, textiles or ceramics, which have the advantage of being relatively small, non-perishable and of high value.

## 3 Project Rationale

### 3.1 Objectives

### 3.1.1 Overall Objectives

The overall objective is to work at several levels at once, to create an atmosphere in which ecommerce can begin to take hold and to build a critical mass of content, of users and of markets.

### 3.1.2 Specific Objectives

- 1. The specific objective of Component 1 is to assist SMEs in the development and implementation of individualised strategies for e-commerce.
- 2. The specific objective of Component 2 is the development of an e-payment infrastructure, and all accompanying activities that support the various electronic payment methods across the entire CARIFORUM area.
- 3. The specific objective of Component 3 is to design and implement a region-wide Sectoral ecommerce Strategy in Tourism, and thereby to increase the number and quality of tourism visitors to the region.
- 4. The specific objective of Component 4 is to generate benefits through the development of a benchmarking exercise between CARIFORUM members of e-government services, sharing best practice and experiences; pooling resources for development of service platforms; and encouraging a healthy sense of friendly competition between e-leaders involved in implementing these services.
- 5. The specific objective of Component 5 is to determine the extent and specific nature of the implementation of ASYCUDA/CASE in the CARIFORUM countries as it applies to e-commerce, to assess the options, costs and benefits of enhancing these, and to make recommendations to CARIFORUM members.
- 6. The specific objective of Component 6 is to build a common e-commerce platform in one or more related products to enable international sales of high quality Caribbean goods under a single brand. A medium term aim is for it to become an SME-owned cooperative enterprise, sustained through a proportion of sales revenue.

### 3.1.3 Expected Results

The Expected results are as follows:

First, to extend the **general familiarity and use of internet interactions** among the public and businesses, by offering e-government content and services where clear benefits will accrue. (See Programme Component 1 below.)

Second, to develop a **Regional E-Payment Facility** that will overcome a major bottleneck for international (within and outside the region) user friendly electronic payment ,with a number of options. (See Programme Component 2.)

Third, to identify and **support a high-profile 'e-Commerce Champion'** sector that can specifically benefit from an extensive e-commerce effort, of relevance to all CARIFORUM members, and support it as a visible and leading exponent of e-Commerce. (See Programme Component 3.)

Fourth, to provide a set of **materials**, **resources and incentives to SMEs** to begin to engage with e-Commerce. (See Programme Component 4.)

Fifth, to create **a wider Portal on which a larger number of SME sector** and sub-sectors can gain a presence in e-Commerce, as they reach a level where they can benefit. (See Programme Component 5)

Sixth, **ongoing improvement of the technical infrastructure** for e-Commerce, beginning with a study of the further development of Customs automation. (See Programme Component 6.)

The diagram below loosely represents their relationship of support and reinforcement.



## 3.2 Stakeholders (Implementing Agency, Beneficiaries, Target Groups)

Component 1: CARIFORUM; national business support entities, and private sector associations.

**Component 2**: CARIFORUM; national business support entities, national legislators, regulators and others.

**Component 3:** CARIFORUM, National Tourism Promotion agencies; Tourism SMEs; e-commerce service suppliers; University research centres.

**Component 4:** HIPCAR would seem to be the natural organising agency, in which a small secretariat could support these activities with the nominated senior level officials in each country.

**Component 5:** CARIFORUM members, especially Ministries responsible for trade, and e-commerce.

**Component 6**: CARIFORUM; national business support entities, SMEs, and private sector associations.

## **3.3** Risks and Assumptions

## 3.4 Cross-cutting Issues (Gender, Environment, HIV, Poverty Reduction)

### 4 **Project Implementation Strategy**

### 4.1 **Project Components**

### 4.1.1 Component 1: E-Commerce Strategy Development Toolkit for SMEs

This component comprises a set of hardcopy and online information and training packages, designed to introduce SMEs in the region to the basics of e-commerce, assessing the potential benefits to them, to developing a strategy for introducing e-commerce into their firms, to introductions to national expertise for implementation.

### 4.1.2 Component 2: e-Payment Infrastructure

This involves a number of interdependent and interlocking actions, described in the Activities below.

### 4.1.3 Component 3: A Regional Tourism Sectoral e-commerce Strategy

This involves a macro-level analysis of the tourism sector's dynamics in relation to e-commerce, including the intra-sector and extra-sectoral supply chains, and the current level of uptake and potential for growth. This is followed by selection of key firms and micro-level scrutiny of firms exploring the business case for e-commence, and identifying barriers and possibilities. A comprehensive approach is then taken to building an e-commerce dynamic.

### 4.1.4 Component 4: An e-Government Regional Support Programme

This will involve (a) a Benchmarking exercise in relation to e-government services and (b) The documenting of Best Practice Case Studies that will provide a basis for advising the government on options for e-Government.

### 4.1.5 Component 5: A Study for an Automated Customs System

This component comprises a study that will look at:

• How ASYCUDA/CASE and related systems are utilised in general in the context of e-Commerce, the benefits of their use and the costs in their absence.

- The extent and nature of implementation of such systems in CARIFORUM countries.
- The benefits that would be associated with a more complete implementation, accruing to countries at different levels of development of e-commerce.
- The costs of implementation in each country.

### 4.1.6 Component 6: B2C Caribbean e-Commerce Portal

This involves the construction of an SME e-Commerce Portal in a selected sector, or set of sectors, that initially takes leading SMEs with existing proven ability to produce quality products, and showcases their goods. It will also comprise a marketing campaign, offer easy and secure payment options, and safe delivery options. As its capacity to secure sales rise, it will open out to other SMEs who can demonstrate they produce good quality and can deliver reliably. Initially funded with a grant, the goal would be to establish a sustainable enterprise collectively owned by the users.

## 4.2 Plan of Main Activities for Implementation of the Project

Activities Component 1: The package would include:

- 1. Formation of a Stakeholders Steering Committee under CARIFORUM, to oversee the project.
- 2. An introductory set of **E-commerce Guides**, covering the basic elements and issues arising. It would include examples in different relevant sectors, and would cover a full range of issues from benefits through to concerns about security, payment options, consumer legislation, eMarketing and so forth.
- 3. A Cost/Benefit **diagnostic tool**, to enable an SME to assess the approximate costs involved, the medium and long term savings, and the potential market growth that might be expected over different time periods, including export markets.
- 4. A **Strategy Development tool** that would take them through a step by step process of developing a strategy to implement e-commerce in their firm. At each step, resources and expert assistance (remote but also national consultants) would be available.
- 5. A **database of approved expert resources**, available nationally, that would enable them to implement the Strategy.

Additional elements could be considered, based on the progress and research, such as:

- 6. A Peer Support network, gradually built up over time, in which those SMEs already successfully implementing e-Commerce are enabled and resourced to assist others.
- 7. A partial subsidy/support for the cost of implementing e-Commerce, in direct grants or tax incentives.

The package would be developed centrally, and localised for each of the CARIFORUM countries as required. All the materials would be available on a dedicated Website, with key documents available also in hard copy. The above mentioned tools would, as appropriate, be software supported.

### **Activities Component 2:**

**1.** Formation of a Stakeholders Steering Committee under CARIFORUM, to oversee the project.

**2. E-Payment Infrastructure:** The development of a CARICOM Automated Clearing House (ACH) to facilitate electronic funds transfer (EFT) can be seen as a foundation step on which further e-payments infrastructure arrangements can be developed for the region.

An ACH Network is a processing and delivery system that will provide for the distribution and settlement of electronic credits and debits among CARICOM financial institutions. Through a regional telecommunications network, each ACH operator will be able to communicate with other ACH operators to exchange entries quickly and efficiently, regardless of geographic distances involved. The ACH Network will be governed by operating rules and guidelines, which will be developed by the actual users of the system, and is administered through a series of agreements among Regional financial institutions, customers, trading partners, and local ACH operators. There are several ACH networks within several Caribbean Territories such as the Bahamas, the Eastern Caribbean and Trinidad & Tobago. The models employed in their implementation and governance/regulation can be expanded to for the Caribbean region.

- **3. Cross border Taxation and Dispute Resolution:** With the understanding that, as more businesses and other activities migrate to the internet, governments must work together to implement policies to eliminate double taxation on goods bought and sold within CARICOM using e-commerce. Also of critical importance is the establishment of mechanisms to resolve disputes that may that arise as a result of an e-transaction. This issue and dispute resolution infrastructure should be tabled as a matter for consideration of the Caribbean Court of Justice (CCJ) which is the regional body for the resolution of Trade disputes.
- 4. Privacy and Security: Privacy concerns must be addressed if CARICOM governments are going to persuade citizens and businesses to conduct electronic commerce transactions. In addition to implementing security technologies like encryption and digital signature (PKI -- public key infrastructure), there are also important public policy issues to resolve. CARICOM governments may need to revisit and, if necessary, revise their approach to privacy from two perspectives: as a sovereign entity and as a functional entity, under the following headings:
  - Minimum standards for electronic signatures;
  - Reliability and integrity of electronic signatures;
  - Establishing of CARICOM Certification Service Providers;
  - Establishing of a CARICOM Registry of certification service providers;
  - Establishing of CARICOM Certification Authority(ies)

A set of fair information reporting practices should also be established with important safeguard principles such as:

- Informed consent at the point of collection;
- Limiting collection to required elements;
- Allowing subjects to view and correct information; and
- Obtaining consent for any additional use of information.

Activities Component 3: This would involve a number of steps:

- 1. Formation of a Stakeholders Steering Committee under CARIFORUM, to oversee the project.
- 2. A detailed Tourism e-Commerce Strategy, developed with technical assistance in close cooperation with regional and national private sector tourism interests, including an analysis of the supply chain, current and potential markets, e-commerce requirements, and so forth.

- 3. The identification of a number of high-quality tourism products, spread throughout the region, and their potential for collective branding.
- 4. The identification of a number of partner SMEs willing to engage in e-commerce.
- 5. The creation of a shared Web-based B-C facility or 'Portal' for marketing and selling the products.
- 6. Supply of technical/grant assistance to implement the strategy among an initial key set of SMEs.

### **Activities Component 4:**

- 1. Formation of a Stakeholders Steering Committee under HIPCAR.
- 2. Agreement of Benchmarking Criteria for e-government services, as a means to compare and contrast progress in each of the CARIFORUM countries.
- 3. The setting of common targets, agreed at Ministerial level in each country, in relation to these Benchmarks, with a view to convergence over time. There may be a need for a number of different targets, for more and less advanced countries with regard to e-Government services.<sup>4</sup> This would be updated periodically.
- 4. The documenting of Best Practice Case Studies, to demonstrate the best in each country, but including not simply high-quality provision of specific eGovernment services, but also good practice in strategy development, effective methods of implementation (and gaining 'buy-in' within public administrations and Ministries, effective public consultations, and monitoring and evaluation.
- 5. Study visits and exchanges to deepen co-ordination and share expertise, including interregional expert services.
- 6. Developing a database of expertise of service providers in the region with high level capacity in developing services.
- 7. Potential collaborations in service development especially among smaller countries, to reduce software development and other costs. These could also identify joint funding opportunities.

Activities Component 5: The initial action here is a comprehensive study that will look at:

- How ASYCUDA, CASE and related systems are utilised in general in the context of e-Commerce, the benefits of their use and the costs in their absence.
- The extent and nature of implementation of such systems in CARIFORUM countries.
- The benefits that would be associated with a more complete implementation, accruing to countries at different levels of development of e-commerce.
- The costs of implementation in each country.

### Activities Component 6: The package would include:

1. Initial assessment of potential producers, based on known high quality SMEs across CARIFORUM countries, and identification of potential product sectors and SMEs in each.

<sup>&</sup>lt;sup>4</sup> The EU has done considerable work in Benchmarking. See http://ec.europa.eu/information\_society/eeurope/i2010/benchmarking/index\_en.htm#eEurop e

- 2. International assessment of potential markets for these products.
- 3. Cost benefit analysis of building the Portal, based on the selected sectors and SMEs.
- 4. Development of brand and market targeting tools.
- 5. Development of Portal, including payment, transportation and other agreement.
- 6. Launch of Portal.
- 7. Review of progress and sustainability, after an agreed period.

The project would utilise expertise within the region.

### 5.3 Sustainability Issues

### 5.4 Arrangements for Monitoring & Evaluation

- 5.4.1 Performance indicators and targets
- 5.4.2 Institutional arrangements
- 5 Institutional and Resource Framework for Project Implementation

### 5.1 Project Organisation and Institutional Arrangements

### **6 ANNEXES**

6.1 Annex A: Logical Framework Matrix

### 6.2 Annex C: Detailed Budget

Component 1 E-Commerce Strategy Development Toolkit for SMEs	Cost
	(Euros €)
Secretariat and Administration Expenses	45,000
Stakeholder input into Design (research, workshops)	25,000
Design and produce Initial e-commerce guides	90,000
Diagnostic tool for SMEs,	15,000
Strategy Development tool	15,000
Development and hosting of Web resources	25,000
Contingency costs and ongoing maintenance	10,000
Total	225,000

Component 3: A Regional Tourism Sectoral e-commerce Strategy	Cost (Euros €)
Secretariat Expenses; Steering Committee Meetings	80,000
Sector Research and Strategy	60,000
Product Identification & Securing Cooperation of SMEs	45,000
Product Development and Branding	80,000
Technical Development of Web based e-Commerce site	100,000
On-going marketing, branding, promotion and support	100,000
Contingency costs and ongoing maintenance	80,000
Total	545,000

Component 4: An e-Government Regional Support Programme	
	· · ·
Secretariat and Steering Committee	25,000
Consultant for Benchmarking and Best Practices	150,000
Study visits and exchanges	100,000
Other activities	25,000
Total	300,000

Component 5: A Study for an Automated Customs System	Cost (Euros €)
Secretariat and Steering Committee	10,000
Consultant for Study	85,000
Total	95,000

Component 6: B2C Caribbean e-Commerce Portal	Cost (Euros €)
Producer and market assessment ands section (including consultation)	75,000
Portal cost/benefits analysis	40,000
Brand development and Market targeting	35,000
Development of Portal	70,000
Promotion, advertising and maintenance	95,000

Contingency costs and ongoing maintenance	50,000
Total	365,000

# 6.3 Annex D: Related Donor Funded Projects

## Appendix D: Suggested Key Provisions to be Included in CARIFORUM ecommerce Legislation

## 1) Commercial Code for Electronic Transactions

- A commercial code for e-commerce transactions, creating a predictable legal environment for e-commerce and e-government transactions.
  - Clearly define the rights and obligations of the transacting parties.
  - Address the legal aspects of electronic contracts, use of digital signatures and concerns for authentication and non-repudiation.
- Removal of barriers to the use of electronic transactions and signatures
  - Identify and eliminate barriers to the use of electronic transactions that arise from the use of legislative language that implies paper documents.
  - Reduce uncertainties related to the enforcement of electronic transactions and to the recognition of electronic signatures.
- Harmonisation: *The global nature of the Internet and e-commerce means that harmonization* is essential to the growth of electronic transactions and the establishment of a predictable legal environment.

### 2) Security and digital signatures

- The laws of certain countries explicitly disallow any form of signature other than the traditional "ink on paper". Even when the law does not explicitly disallow electronic signatures, case-law is not well developed, and many businessmen are justifiably concerned about how the courts will ultimately view electronic signatures.
  - Law to reduce uncertainties related to the enforcement of electronic transactions and to the recognition of electronic signatures
- Parties to electronic contracts must be satisfied that the sender and receiver in the electronic transactions are who they purport to be and that the electronic record can be authenticated and not forged while in transit.
  - Electronic signatures and records should be treated as the equivalent of traditional signatures and paper records if they meet certain criteria; for example, if an electronic signature is sufficiently reliable for the purpose for which the signature is required or if an electronic record is accessible to be useable for subsequent reference.
- Provisions on secure technologies such as digital signatures and digital certificates will also be needed in order to help meet and address some of these challenges.
- Establish a framework for the authentication of computer-based information
- Establish a regulatory structure for recognizing trusted third parties and other certifiers of the authenticity of electronic signatures
- Ensure the cross-border recognition and enforcement of electronic transactions and signatures. The law should avoid the exclusion of signatures authenticated in other jurisdictions and not impose unnecessary requirements that delay recognition of authenticated electronic signatures originating in other jurisdictions. Law should not erect non tariff barriers to trade, e.g. by unnecessary process delays for recognizing electronic signatures.

### **3)** Certification Authorities

- Laws that allow for the establishment and registration of internet security service providers including Certification Authorities and registration of Certification Service providers e.g. The Electronic Transaction Act.
- Laws for electronic publication of non-private information on persons, businesses, etc. and for the purpose of authentication and verification of identity.
- Regulations: Schedules and Guidelines under which Certification Authorities and certification Service providers operate or are registered.

### 4) Liability for intermediaries

Appropriate adjustment of legal liabilities for certain participants in the electronic marketplace:

- Internet service providers and other intermediaries that act as "mere conduits" for electronic information should be assured that no liability will attach to them for content or data that could incur civil or criminal liability.
- To avail themselves to protection from liability Internet service providers and other intermediaries must have no actual knowledge of the alleged activity that was contrary to the law or that they took appropriate action when they learned of it.
- Provisions for appropriate action including "take down" procedures.

### 5) Electronic Government

- Remove the barriers to the introduction of e-government
  - Positive clauses showing that Government is being an enabler by taking the initiative towards e-governance.
  - The law should contain an omnibus provision through which government departments and statutory boards can accept electronic filings and fees without having to amend their respective Acts.
  - The law should also allow public bodies to issue permits and licences electronically.
- Electronic payments
  - The law must allow the Government to make and receive electronic payments in order to improve the efficiency of its payments and receipts systems.
  - Government needs to provide a safe and secure electronic funds transfer environment for the consumer to transact business with Government agencies.
- Electronic Gazetting
  - The Minister can be empowered to, by order, declare the particulars of the official website of every public authority and any publication in the concerned official website of the public authority shall be deemed to be a publication under the authority of the Government in the Electronic Gazette.
  - Alternately it could be clarified that the Gazette under the Interpretation Act includes the gazette in electronic format.

Examples of provisions to enable e-governance follow:

### Box 13: Examples of e-governance provisions

### Singapore Electronic Transactions Act, 2010

"47. Acceptance of electronic filing and issue of documents 47. -(1) Any department or ministry of the Government, organ of State or statutory corporation that, pursuant to any written law - (a) accepts the filing of documents, or requires that documents be created or retained; (b) issues any permit, licence or approval; or (c) provides for the method and manner of payment, may, notwithstanding anything to the contrary in such

written law — (i) accept the filing of such documents, or the creation or retention of such documents in the form of electronic records; (ii) issue such permit, licence or approval in the form of electronic records; or (iii) make such payment in electronic form. (2) In any case where a department or ministry of the Government, organ of State or statutory corporation decides to perform any of the functions in subsection (1) (i), (ii) or (iii), such agency may specify — (a) the manner and format in which such electronic records shall be filed, created, retained or issued; (b) where such electronic records have to be signed, the type of electronic signature required (including, if applicable, a requirement that the sender use a digital signature or other secure electronic signature); (c) the manner and format in which such signature shall be affixed to the electronic record, and the identity of or criteria that shall be met by any certification authority used by the person filing the document; (d) control processes and procedures as appropriate to ensure adequate integrity, security and confidentiality of electronic records or payments; and (e) any other required attributes for electronic records or payments that are currently specified for corresponding paper documents.(3) Nothing in this Act shall by itself compel any department or ministry of the Government, organ of State or statutory corporation to accept or issue any document in the form of electronic records."

### Antigua and Barbuda Electronic Transactions Act

"12. Any public body that, pursuant to any law-

- a) accepts the filing of documents, or requires that documents be created or retained;
- b) issues any permit, licence or approval; or
- c) provides for a manner of payment,

may, notwithstanding anything to the contrary in such law-

- i) accept the filing of such documents, or the creation or retention of such documents in the form of electronic records;
- ii) issue such permit, licence or approval in the form of an electronic record; or
- iii) make or receive payment in electronic form or by electronic means."

### 6) Use of Electronic Records and Digital Signatures in Government and its agencies

(1) Where any law provides for:

- a) the filing of any form, application or any other document with any office, authority, body or agency owned or controlled by the appropriate Government in a particular manner;
- b) the issue or grant of any licence, permit, sanction or approval by whatever name called in a particular manner;
- c) the receipt or payment of money in a particular manner, then, notwithstanding anything contained in any other law for the time being in force, such requirement shall be deemed to have been satisfied if such filing, issue, grant, receipt or payment, as the case may be, is effected by means of such electronic form as may be prescribed by the appropriate Government.

(2) The appropriate Government may, for the purposes of sub-section (1), by rules, prescribe-

- a) the manner and format in which such electronic records shall be filed, created or issued;
- b) the manner or method of payment of any fee or charges for filing, creation or issue any electronic record under clause (a).

The following clauses have been developed by e-legislation experts (first formulated for use in South Africa in 2002, then used in countries from Ghana to Anguilla and Antigua and Barbuda) to make laws technology neutral without having to go through each law and make amendments:

"An expression in a law, whether used as a noun or verb, including the terms "document", "record", "file", "submit", "lodge", "deliver", "issue", "publish", "write in", "print" or words or expressions of similar effect, must be interpreted so as to include or permit such form, format or action in relation to an electronic record unless otherwise provided for in this Act.

### 7) Admissibility and evidential weight of electronic records

Admissibility of electronic evidence. Clause such as:

"In proceedings in a court, tribunal or arbitration, whether of a legal, judicial, quasijudicial or administrative nature, the admissibility of an electronic record or an electronic signature in evidence shall not be denied solely on the grounds that it is an electronic record or an electronic signature."

- Best evidence rule in respect of an electronic document.
- Regulations establishing evidentiary presumptions in relation to electronic documents signed with secure electronic signatures, respecting the association of secure electronic signatures with persons; and the integrity of information contained in electronic documents signed with secure electronic signatures.

### 8) Cybercrime

### Definitions:

"access" means to make use of; to gain entry to; to view, display, instruct, or communicate with; to store data in or retrieve data from; to copy, move, add, change, or remove data; or otherwise make use of, configure, or reconfigure any resources of a computer program, computer, computer system, network, or their accessories or components, whether in whole or in part, including the logical, arithmetical, memory, transmission, data storage, processor, or memory functions of a computer, computer system, or network, whether by physical, virtual, direct, or indirect means or by electronic, magnetic, audio, optical, or other means.

"computer contaminant" means any set of computer instructions that are designed—

- i) to modify, destroy, record, transmit data or programme residing within a computer, computer system or computer network; or
- ii) by any means to usurp the normal operation of the computer, computer system, or computer network;

"computer database" means a representation of information, knowledge, facts, concepts or instructions in text, image, audio, video that are being prepared or have been prepared in a formalised manner or have been produced by a computer, computer system or computer network and are intended for use in a computer, computer system or computer network;

"computer source code" means the listing of programmes, computer commands, design and layout and programme analysis of computer resource in any form;

"computer virus" means any computer instruction, information, data or programme that destroys, damages, degrades or adversely affects the performance of a computer resource or attaches itself to another computer resource and operates when a programme, data or instruction is executed or some other event takes place in that computer resource;

"damage" means to destroy, alter, delete, add, modify or rearrange any computer resource by any means;

### Offences to be created:

- Offences against illegal access to whole or part of a computer
- Offences against the confidentiality, integrity and availability of computer data and systems: These offences would include what would be referred to as Hacking, Cracking or computer trespass.
- Offences against illegal interception: These offences are committed where there is, without right and with dishonest intent, interception of non-public transmissions of computer data to, from or within a computer system, including electromagnetic emissions from a computer. The use of common commercial practices, such as employing cookies, not being an interception without right, would be legal.
- Offences against data interference: Such offences consist of the intentional damaging, deletion, deterioration, alteration or suppression of computer data without right.
- Offences against system interference: Such offences occur where, without right, there is the intentional serious hindering of the functioning of a computer system by inputting, transmitting, damaging, deleting, deteriorating, altering or suppressing of computer data.
- Offences against misuse of devices: These offences are committed where, without right, there is the intentional production, sale, procurement for use, import, distribution or otherwise making available of devices (including computer programs) designed or adapted primarily for the purpose of committing any of the above offences.
- Offences against computer-related forgery: These offences are committed where, without right, and with dishonest intent there is the input, alteration, deletion, or suppression of computer data, resulting in inauthentic data with the intent that it be considered or acted upon for legal purposes as if it were authentic, regardless whether or not the data is directly readable and intelligible.
- Offences against computer-related fraud: These offences consist of the intentional causing of a loss of property to: (a) any input, alteration, deletion or suppression of computer data, or (b) any interference with the functioning of a computer system; with fraudulent or dishonest intent of procuring, without right, an economic benefit for oneself or for another.
- Content-related offences -Offences related to child pornography
  - The offences are committed when the following conduct is committed intentionally:
  - a) producing child pornography for the purpose of its distribution through a computer system;
  - b) offering or making available child pornography through a computer system;
  - c) distributing or transmitting child pornography through a computer system;
  - d) procuring child pornography through a computer system for oneself or for another;
  - e) possessing child pornography in a computer system or on a computer-data storage medium.

"Child pornography" is generally defined as pornographic material that visually depicts: a minor engaged in sexually explicit conduct; a person appearing to be a minor engaged in sexually explicit conduct or realistic images representing a minor engaged in sexually explicit conduct.

## Offences against the commission of acts of terrorism:

Public provocation to commit a terrorist offence as a message to the public "whether or not directly advocating terrorist offences as necessary and justified" should be made a criminal offence. A specific intent is required to incite the commission of a terrorist offence. The provocation must in addition be committed unlawfully and intentionally. Training for terrorism: Making or use of explosives, firearms or other weapons or noxious or hazardous substances, or in other specific methods or techniques. The purpose must be to execute the terrorist offence or contribute to it. The Trainer must have knowledge of that skill or "know how" and intend it to be used for the carrying out of the terrorist offence or for a contribution to it.

### Sanctioning Powers:

- Penalty and compensation for damage to computer, computer system, etc.
- Compensation for failure to protect data
- Punishment for certain computer related offences
- Punishment for sending offensive messages through communication service, etc.
- Punishment for dishonestly receiving stolen computer resource or communication device
- Punishment for identity theft
- Punishment for cheating by personating by using computer resource
- Punishment for violation of privacy
- Punishment for cyber terrorism
- Punishment for publishing or transmitting obscene material in electronic form
- Punishment for publishing or transmitting of material depicting children in sexually explicit act, etc., in electronic form
- Preservation and retention of information by intermediaries
- Power to issue directions for blocking for public access of any information through any computer resource
- Power to authorise, to monitor and collect traffic data or information through any computer resource for cyber security

### Procedural Powers:

- Definitions
- Search and seizure warrants
- Assisting police
- Record of and access to seized data
- Production of data
- Disclosure of stored traffic data
- Preservation of data
- Interception of electronic communications
- Interception of traffic data
- Confidentiality and limitation of liability

### 9) Framework for transfer of money

A framework is necessary to regulate the transfer of money through electronic means, including via computers, online or an electronic terminal, by means of a card or number or
data associated with a card for the purpose of instructing or authorising a financial institution to debit or credit a cardholder's account when anything of value is purchased.

The law needs to create a number of offences related to the theft, forgery and other dishonest use of a credit card, debit card, bank card, smart card, or the number and data associated with such card, and is intended to build user confidence in ecommerce and electronic transfers. At present, existing laws are "stretched" to fit these new technology enabled crimes. The law should be drafted to be technology neutral, so that the same offences, whether committed in a shop in Guyana, at an electronic terminal, or used to purchase goods or services online, apply in a similar manner. This law will close a big gap which exists in the law with respect to the use of credit cards and debit cards, including for online transactions.

Offences to be created include for a person-

- (a) to knowingly give false information to a financial institution to procure the issuance of a card to himself.
- (b) to take possession of a card or the number and data of such card from another without consent or knowingly to receive a stolen card.
- (c) to receive and retain a card or the number and data of such card knowing that it was lost, mislaid or mistakenly delivered to him.
- (d) to receive and retain possession of two or more cards belonging to other persons which he knew were taken or retained illegally
- (e) who is not an issuer, to sell a card to or buy a card from another person other than an issuer.
- (f) to obtain control of a card as security for a debt with intent to commit fraud.
- (g) to make or to alter in any manner a card and he is presumed to have an intent to defraud if he has possession of two or more counterfeit cards.
- (h) to sign the card of another person.
- (i) to obtain anything of value by use of a forged card or a card or the number and data of such card obtained or retained fraudulently.
- (j) to furnish goods and services on a card or the number and data of such card he knew was obtained or retained fraudulently or illegally, or was forged, expired or revoked, or represented to the issuer that he has furnished goods and services when in fact he has not done so or that he knowingly received goods and services obtained under such circumstances
- (k) to knowingly obtain anything of value by use of a false, fictitious, counterfeit, revoked or expired card, card number or other credit device.
- (I) to traffic in counterfeit cards, invoices, etc., or card account numbers of another person, to receive, possess, buy or sell card-making equipment with intent to use it to make counterfeit cards, or to alter in any manner a card invoice after the cardholder has signed that invoice.
- (m) to use the personal or financial data or credit account numbers of another to effect an electronic fund transfer where such an offence is not otherwise provided for under the law.

The law should restrict the liability of a cardholder who has lost possession of his card to a specific sum, provided that notice is given within two days, and where the cardholder, with

knowledge, fails to report the loss after two days, he is deemed to accept liability to any extent for loss to the issuer from illegal use of the card. The law should prevent a financial institution from disclosing the names of cardholders, their addresses and card numbers to any other person without the written consent of the cardholder, except disclosures to another financial institution for credit rating purposes only.

# **10)** Consumer protection

The basic principle in setting standards for consumer protection in electronic commerce is that the rights of the consumer should not be diminished through the use of the technology. The consumer should, as a minimum, retain existing legal rights and protection. Recognition must be given to the fact that existing consumer laws may not capable of being adapted to the peculiarities of the on-line environment, so that electronic commerce will require different protection and redress mechanisms than those currently existing in CARIFORUM

# **Consumer protection principles**

The law should set out basic principles for online vendors. The principles set out by the Consumer Measures Committee, co-chaired by the Director General of the Office of Consumer Affairs, Industry Canada and by the Director of the Consumers' Bureau, Manitoba Finance is instructive in formulating the contents of the law and regulations relating to consumer protection online for CAREIFORUM. These principles, as adapted for CARIFORUM, are set out below.

# Information Provision

Consumers should be provided with clear and sufficient information to make an informed choice about whether and how to make a purchase. Vendors should avoid using jargon and legalese, and use plain language whenever possible; and clearly distinguish the terms and conditions of sale from marketing and promotional material or messages.

The following information should be provided to anyone accessing a vendor's Web site:

- (a) vendor identity, location and any accreditation;
- (b) vendor's legal identity, business name, full street address and telephone number (sufficient to enable consumers to verify the vendor's legitimacy);
- (c) an electronic method of verifying any accreditation claims;
- (d) any geographic limitations on where a product or service is for sale;
- (e) fair and accurate descriptions of products or services for sale;
- (f) security mechanisms available to consumers to protect the integrity and confidentiality of the information being exchanged;
- (g) a complaint procedure i.e. to send email to;
- (h) types of payment that will be accepted, and the implications of each in terms of any extra charges or discounts applied by the vendor.

Vendors should disclose all terms and conditions of sale to consumers prior to the conclusion of any "sales transaction", including the full price to the consumer, including the currency and any shipping charges, taxes, delivery arrangements, including estimated timing, cost and method of delivery; cancellation, return and exchange policies, warranties if

applicable, and any associated costs. All the terms and conditions of sale should be available in one place.

Vendors should provide consumers with their own record of the transaction, including key details, as soon as possible after the transaction has been completed. Where there is a delay between the purchase and delivery of goods, or tickets for the use of a service (for example, airline or theatre tickets), vendors should provide the information set out below to consumers at the time of delivery: cancellation, return and exchange policies, warranties if applicable, and any associated costs; contact information in the event of a complaint; payment arrangements, including any vendor credit terms;

# **Contract Formation**

Vendors should take reasonable steps to ensure that the consumer's agreement to contract is fully informed and intentional and should employ a multistep confirmation process that requires consumers to, specifically and separately, confirm their agreement to purchase, the full price, terms and conditions, details of the order, and method of payment. If an appropriate multistep confirmation process is not used, vendors should allow consumers a reasonable period within which to cancel the contract.

# <u>Privacy</u>

Vendors and intermediaries should respect the privacy principles set out in data protection General Privacy Principles.

# Security of Payment and Personal Information

Vendors and intermediaries should take reasonable steps to ensure that transactions in which they are involved are secure and vendors and intermediaries should safeguard payment and personal information that is exchanged and/or stored as a result of a transaction.

# <u>Redress</u>

Consumers should have access to fair, timely, effective and affordable means for resolving problems with any transaction. Vendors should provide adequate resources to handle consumer complaints efficiently and effectively.

The Government, businesses and consumer groups should work together to develop appropriate standards for dispute resolution mechanisms. The Government should cooperate in the development of clear rules regarding the applicable law and forum, and the mutual enforcement of judgements, in the event of cross-border disputes.

# <u>Liability</u>

Consumers should be protected from unreasonable liability for payments in unauthorised transactions. Credit card issuers should make reasonable efforts to help consumers resolve complaints with vendors in the event of non-delivery or unauthorised transactions.

# Education and Awareness

Governments, business and consumer representatives should work together to educate consumers about electronic commerce, to foster informed decision-making by consumers

participating in electronic commerce, and to increase business and consumer awareness of the consumer protection framework that applies to their online activities.

# **Implementation**

Governments should at the national, regional and international level, and in co-operation with businesses, consumers and their representatives:

- review and, if necessary, promote self-regulatory practices and/or adopt and adapt laws and practices to make such laws and practices applicable to electronic commerce, having in mind the principles of technology and media neutrality;
- encourage continued private sector leadership that includes the participation of consumer representatives in the development of effective self-regulatory mechanisms that contain specific, substantive rules for dispute resolution and compliance mechanisms;
- encourage continued private sector leadership in the development of technology as a tool to protect and empower consumers;
- promote the existence, purpose and contents of the Guidelines as widely as possible and encourage their use; and
- facilitate consumers' ability to both access consumer education information and advice and to file complaints related to electronic commerce.

# Alternative Dispute Resolution and Redress

- Consumers should be provided meaningful access to fair and timely alternative dispute resolution and redress without undue cost or burden.
- Businesses, consumer representatives and governments should work together to continue to use and develop fair, effective and transparent self-regulatory and other policies and procedures, including alternative dispute resolution mechanisms, to address consumer complaints and to resolve consumer disputes arising from business-toconsumer electronic commerce, with special attention to cross-border transactions.
- Businesses and consumer representatives should work to establish fair, effective and transparent internal mechanisms to address and respond to consumer complaints and difficulties in a fair and timely manner and without undue cost or burden to the consumer. Consumers should be encouraged to take advantage of such mechanisms.
- Businesses and consumer representatives should establish co-operative self-regulatory programs to address consumer complaints and to assist consumers in resolving disputes arising from business-to-consumer electronic commerce.
- Businesses, consumer representatives and governments should work together to continue to provide consumers with the option of alternative dispute resolution mechanisms that provide effective resolution of the dispute in a fair and timely manner and without undue cost or burden to the consumer.

# 11) Intellectual Property Law

Electronic commerce is fuelled by creative content that is protected by copyright. The nature of digital network technologies means that electronic commerce can have a tremendous impact on the system of copyright and related rights, and the scope of copyright and related rights in turn can have an effect on how electronic commerce will evolve.

Digital technology makes it possible to make an unlimited number of copies and transmit them to locations around the world in a matter of minutes. This has the potential to disrupt the traditional markets for the sale of copies of programs, music, art, books and movies.

It is imperative that legal rules be formulated and applied appropriately so that digital technology does not undermine the basic tenets of copyright and related rights. The legal system must respond to the new technological environment in an effective and appropriate way in order to ensure the continued furtherance of the fundamental guiding principles of copyright and related rights: giving incentives to creators to produce and disseminate new creative materials; providing appropriate balance for the public interest, particularly education, research and access to information; and thereby ultimately benefiting society, by promoting the development of culture, science, and the economy.

The Government's objective is to achieve an appropriate balance in the law, providing strong and effective rights, but within reasonable limits and with fair exceptions. The issues of enforcement and licensing take on added dimensions and urgency when works are exploited on digital networks.

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