

**A Rainbow Technology for a Rainbow People:  
E-Business Capacity Development for the  
CARICOM**

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## Executive Summary

The Internet is surely a rainbow technology, encompassing as it does, so many sectors, zones, domains, areas, regions and technologies. It has so much potential for business and developmental possibilities that are not even clear today. It is one of the fastest developing technologies where potentiality cannot even be measured as the standards to do so are themselves still emerging. The developed world (and its corporate sector) has embraced it in earnest. Despite the ‘dotcom’ crash on the stock market, e-Commerce and the Internet are growing by leaps and bounds. E-Business is the way of the future and e-Commerce has tremendous potential for developing countries, for businesses in the new digital economy and for governments as a tool for development. For the CARICOM region this is as much a reality and fact – both economically and politically. From the compulsions of globalisation to the WTO and the FTAA deliberations and negotiations, issues of e-Commerce must be addressed. As a developmental tool these unique territories – mostly Island states, with such rich mixes of various cultural and economic backgrounds, must fully utilize this new technology and opportunity. Finding the synergy between the rainbow technology and the ‘rainbow’ peoples and cultures is therefore an imperative for studies such as this.

Since e-Commerce already does and will continue more and more to affect the economic relations between and within countries and companies, it has to be seen as a matter of key policy consideration<sup>1</sup>. For developing countries and their enterprises, the biggest issue and fear is not the lack of knowledge and expertise in introducing and engaging in it, but more so of not.

### Why does the CARICOM need capacity development in E-Business?

As e-Commerce growth becomes more and more significant, the CARICOM countries will need not just to understand, but in fact to actively engage in it. Not only for realizing its potential of growth for their trade and industry but also as a means of survival in the new world of e-Commerce-based trade and business. Their ability to do so will depend on several factors, such as their infrastructure, both physical (the telecommunication network), as well as the financial and legal framework, including the business and trade environment conducive to e-Business. It will also depend on the availability and price of hardware (computers, routers, switches etc.) and software, as well as the human resource and education standards of the country.

As in the case of several developing countries, these essential ‘factors of e-production’, so to speak are not necessarily in place or are in limited supply. In order to take active part in the new economy as well as be prepared for the adaptation and use of e-Business for old economy transactions especially for international trade and commerce, these countries and their enterprises need to come up to speed and become e-enabled. Section I of this report outlines the objectives, methodology and rationale for the study and also places in perspective the importance of e-Business for developing countries such as those of the Caribbean. The CARICOM member states also need to prepare for discussions on e-Commerce in the international arena, especially the WTO and FTAA. They need to understand, and assess carefully from their perspective, the pros and cons of the different proposals and issues in this connection that could emerge at these forums. They will thus need to appreciate the

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<sup>1</sup> Singh, A. D., 1999.

possible impact of this new phenomenon on their economies and work out appropriate strategies and responses to it. This section also summarises these issues.

In order therefore to develop an e-Business capacity development strategy, this CFTC Mission, was so designed as to first carry out a diagnostic analysis to assess how e-Ready the CARICOM member states are and then make recommendations towards a possible blueprint for the future.

### **Categories of National E-Readiness**

To do a frank e-Readiness analysis is to look penetratingly through the local window dressing of 'wannabe-websites' and presumptuous portals, to the core global equations of e-Business. Does the country actually have a vibrant e-Business and e-Commerce going on? Does it have the right policies and infrastructure to promote and sustain it? Does it have the e-Professionals to establish and run the e-Businesses? These are the type of questions that need to be first addressed. Section II of this report is devoted to such an analysis and is based on the following framework:

#### **Connectivity: Are networks easy and affordable to access and to use?**

- Availability of communication services, access centres and networked computers
- Existence of effective competition among communication and information services providers.
- Affordability and reliability of network access, including the cost of service.
- Reliability of electrical supply for business-critical computer operations

#### **E-Leadership: Is E-Readiness a national priority?**

- Priority given by government to promoting the development of an e-society on a national level.
- Extent of demonstrated progress on e-government.
- The ease of importing and exporting goods and of transporting them within a country.
- Quality of partnerships between industry and government to improve E-Readiness.
- Level of effort to promote access for all citizens.

#### **Security: Can the processing and storage of networked information be trusted?**

- Strength of legal protections and progress in protecting intellectual property rights.
- Extent of efforts to protect privacy.
- Strength and effectiveness of the legal framework to address and prosecute computer crimes, authorize digital signatures, and enable public key infrastructures.

#### **Human Capital: Are the right people available to support e-business?**

- Quality of and participation levels in the education system, with an emphasis on efforts to create and support a knowledge-based society.
- Culture of local creativity and information sharing within the society.
- Skills and efficiency of the workforce.

#### **E-Business Climate – How easy is it to do e-business today?**

- Transparency and predictability of regulatory implementation, openness of government, rule of law, and general business risk.
- Openness to participation by foreign investors in ICT businesses.
- Ability of the financial system to support electronic transactions.

Based on the above analysis, Section III addresses the need for Regional Initiatives in this area. These are based on the inputs received from the Commonwealth and CARICOM secretariat briefings, discussions with officials and experts during the mission and on literature on the subject.

The conclusion of this study, in Section IV, suggests that electronic commerce affects the business environment at national, regional and global levels, and generates major opportunities, and new challenges, for market growth and development of jobs, industries and services. Consequently, co-ordinated efforts are essential in order to secure the economic benefits of e-Business for all sections of society and the economy. An action plan and e-Business capacity development project is recommended for the CARICOM. This section also encapsulates the key issues and recommendations that strategy-makers can see at a glance.

## Section I: The Rationale

### 1.1 Introduction – Background, Objectives, Rationale and Methodology

*“The old ways of doing business just aren’t working anymore; we have to wake-up and find new ways to work.”*

(Words of a Caribbean business leader quoted in Caribbean Export News, June 2001, Vol: 7 No. 1, Barbados)

E-Business is perhaps one of those ‘new ways’. Today it is a fast emerging reality and an imperative that no developing country can anymore ignore or avoid. For the CARICOM economies experiencing a profound transition under the new compulsions of globalisation, it is an important alternative for survival. Despite being blessed with excellent climates, abundant natural resources and significant human talent, the region is becoming poorer on average over the last few years<sup>2</sup>.

The Caribbean economy is a highly globalized economy especially from the point of view of the high proportion of trade and tourism as a percentage of GDP. In the fast changing and volatile global environment, vulnerability of the small economies shows up in not so good economic performance over the last few years. Much of the CARICOM region has experienced instances of negative growth in the past ten years<sup>3</sup>.

According to business leaders in the region, the transactional cost of doing business in the CARICOM is generally high. Virtually everything is imported (and taxed), transportation, both shipping and air-cargo, is limited and expensive, bank charges are high, as are wages compounded with low productivity and old technology in many sectors.

In order to address the changing global environment, the CARICOM member states need to get 'e-ready'. It is for this purpose that the CARICOM Secretariat with assistance from CFTC launched on the present study to do a diagnostic analysis of the prevailing situation in the member states and make recommendations for further initiatives in the region.

#### **Country Infostructure Framework**

For success in the new “digital economy” and actualizing the potential of e-commerce and e-business, it is not enough just to have the physical infrastructure. Once the infrastructure is in place, an optimal environment would require the availability of inexpensive computer hardware and software, wide and unrestricted access to the Internet at inexpensive rates, reliable electric power, and a banking system supportive of entrepreneurship. What is essential is an ‘info-structure’ which encompasses, amongst other requirements, the appropriate legal and financial framework; a political and business environment conducive to its development; and the human resource capacity to participate in it. It is therefore important to assess each country’s e-

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<sup>2</sup> Fairbanks, M., Cornish, J. and Salehi, N. H., 2001, *Creating the New Competitive Advantage of the Caribbean*, Caribbean Export News, June 2001, Barbados

<sup>3</sup> CARICOM, 2001

readiness on such a framework so that in doing so, the gaps would become apparent and strategies for action evident.

### **Terms of Reference**

The present study has been commissioned by the CFTC on a request from the CARICOM Secretariat. The terms of reference for this study provide for a report with the following output:

1. the pattern of development of E-Business in the world economy and in the regional economy;
2. an indication of the nature, trends, volume and scope of E-Business activity in CARICOM, including the number of persons having access to the Internet, the number of transactions, monetary value of transactions, businesses and sub-sectors involved, the number of CARICOM-based-business websites, etc.
3. options for development of the E-Business sector in CARICOM in light of the cross jurisdictional issues which derive from the Community policies on Free Movement of Capital, stock and capital market integration, direct commerce between consumers and suppliers and between businesses in goods and service markets in the context of the policies of Free Movement of Goods and Services;
4. identification and documentation of policies and institutional development initiatives which have been taken by CARICOM States at the national level;
5. elements of a CARICOM policy on E-Business, to include treatment of revenue-loss issues, consumer protection, dispute settlement, selected sub-sectors in both goods and service markets that hold potential for taking advantage of the opportunities presented by E-Business;
6. identification of areas amenable to regional cooperation;
7. verification of existence and scope of legislation already in place in Member States of CARICOM to regulate E-Business;
8. the state of relevant technology in the region and additional requirements, if necessary, to facilitate E-Business transactions;
9. the curricula of CARICOM regional and national tertiary institutions in the area of communications, technology, business education, and computer science;
10. recommendations for positioning the Region to take advantage of the opportunities provided by E-Business given the strengths of CARICOM in certain areas of economic activity.

## Methodology

The CARICOM mission launched for this purpose followed a multi-level methodology for the research required for this study. The main components of which were:

1. Desk based research of existing documentation and work in the area, especially that of a regional focus. (A list of the major references is enclosed)
2. Questionnaire based analysis. (Two questionnaires were circulated in member states).
3. A Country Framework Analysis of e-Readiness of each member state. (summaries of the data analysis of each state are at Annex 1).
4. Field research during June-July 2001 carried out by the CARICOM Mission in each of the member states. (This included interaction with several stakeholders in the public and private sectors. A semi-structured interview format based on the framework analysis was used. A list of persons interviews is attached at Annex, as is the field research schedule of the mission).

The mission also benefited from detailed briefing and de-briefing sessions at the CARICOM and Commonwealth Secretariats, that helped focus the objectives and purpose of the study. Interaction, assistance and data from the CARICOM E-Business Capacity Development project co-ordinators/focal points at each of the member states was crucial in successful completion of the mission.

This methodology followed is so designed as to on the one hand address the requirements of the terms of reference, and on the other to come up with a report that is a step towards a comprehensive strategy for e-Business for the CARICOM. The analytical framework has been created with this output in mind. It analyses the field situation in each member state and in doing so highlights the gaps or requirements for e-Business capacity development that need to be addressed at the national and regional level.

## 1.2 E-Commerce/E-Business in the new economy

### The Internet

E-Commerce and e-Business are both, products of the Internet. The Internet is basically a vast and ever increasing network of computers across the globe that are interconnected over existing telecommunication networks. Simply described, it is a, or *the*, network of networks. It is estimated that the number of persons connected to the Internet today well surpass 500 million, closing the gap on the 700 million or so connected to the telephone<sup>4</sup>. It is calculated that there are over 90 million Internet hosts<sup>5</sup> world-wide, facilitating a dramatic increase in the volume of trade and information available online. The economic rationale of the Internet comes from e-Business and its developmental and moral platform will come from its impact in areas such as e-Government.

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<sup>4</sup> Cairncross, F., 1997.

<sup>5</sup> Computers and networks connected to the Internet.



## Defining e-Commerce and e-Business

It is important to elaborate on the definitions of e-Commerce and e-Business as that will help determine the scope and perspective of this analytical paper. E-Commerce has been simply defined as conducting business on-line. In the World Trade Organisation (WTO) Work Programme on Electronic Commerce, it is understood to mean *the production, distribution, marketing, sale or delivery of goods and services by electronic means*. Broadly defined, electronic commerce encompasses all kinds of commercial transactions that are concluded over an electronic medium or network, essentially, the Internet. Electronic Commerce is a new way of doing business. It is transacting or enabling the marketing, buying, and selling of goods and/or information through an electronic media, specifically the Internet<sup>6</sup>.

From a business point of view, e-Commerce is not limited to the purchase of a product. It includes, besides e-mail and other communication platforms, all information or services that a company may offer to its customers over the Net, from pre-purchase information to after-sale service and support<sup>7</sup>. There are essentially two major uses of e-commerce. The first is to use it to reduce transaction costs by increasing efficiency in the use of time and procedures<sup>8</sup> and thus lowering costs. The other is to use it both as a marketing tool to increase sales (and customer services) as well as to create new business through it -- for example, IT enabled business<sup>9</sup>, call-centres<sup>10</sup>, software and maintenance services etc. as well as 'digital commerce'<sup>11</sup>. It is thus a tool for both existing businesses as well as an opportunity for new business, both for existing companies as well as for new entrants. E-Commerce is seen as being B2C (business to consumer), B2B (business to business) and B2G (business to government). Of these three, B2B has been the most successful though recent reverses in the stock market valuations of high-tech stocks and the slowing down of the U.S. economy in particular is casting doubts on this. In future perhaps the major gains and usage of e-Commerce and the Internet will come from 'old economy' enterprises using it, governments using it (e-Government), and social sectors using it (e-education and e-health).

## e-Business

E-Business is the application of Internet technologies to business processes. However it is more than information technology tools or straight e-commerce. It also implies that the organisation, especially its managers, are willing and receptive to radical changes that such new business techniques and tools bring. It implies organisational process and organisational culture re-engineering, for a true transition into the new economy. Its benefits come not just from the efficiencies and automation of a

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<sup>6</sup> Caribbean Export Development Agency, 1999, E-commerce project Information paper, CEDA, Barbados

<sup>7</sup> Dufour, A, 1999.

<sup>8</sup> This ranges from the use of email and instant chat on the net to EDI (Electronic Data Interchange) and automated supply chains. EDI has a role here both at the level of business to business as well as by governments in providing quicker and smoother trade transaction efficiencies for business by using EDI for customs clearance, trade procedures, etc.

<sup>9</sup> Business that is based on information technology and linked through a network for digital transmission and exchange.

<sup>10</sup> Network linked service centres that customers can access through the Internet for information, guidance, maintenance and services such as bookings, reservations, software support etc.

<sup>11</sup> Digital commerce is the term used to describe goods, services and digitised transactions that are completed and supplied on-line

company's internal processes but from its ability to spread the efficiency gains to the business systems of its suppliers and customers<sup>12</sup>.

An *e-Enterprise* (participating in e-Business) is defined as an enterprise prepared to conduct commerce in this new economy. This means it has created and embraced a business strategy informed by changing economics, new opportunities, and new threats. It has laid down the necessary technology infrastructure to support new business processes. It has used information technology to hone internal processes such as human resources, work flow management, and training. Thus prepared, the enterprise is able to conduct e-Commerce: "the commercial exchange of value (money, goods, services, or information) between an enterprise and an external entity (an upstream supplier, a partner, or a down-stream customer) over a universal, ubiquitous electronic medium." <sup>13</sup>

In order to appreciate the relevance of e-Business and its potential to impact on business and development, it is important to understand that e-Commerce and e-Business are more than just electronics and commerce/business added together. They represent an entirely new way of doing business (including that of government) over a medium that changes the very rules of doing that business. They are therefore far more about strategy and management than they are about technology<sup>14</sup>. In order to appreciate the importance of e-Business and its implications for developing countries such as those of the CARICOM, it is important to see it from the perspective of the transactional aspects of e-Business, those that represent the business between the different players, as well as the framework aspects, those basic requirements that are needed in the CARICOM member states for it to develop.

For the purpose of this study therefore, E-Business is taken as the extension of business on to the Internet; the re-engineering of business processes for digitising of the transactions; the restructuring of the frameworks, both private and public to carry out the transactions seamlessly; and the development of the capacity in society and enterprises for this.

### **E-Business and Developing Countries**

The information and communication technologies (ICTs) in general and e-Business in particular can bring very important benefits and opportunities for enterprises, and as a matter of fact for whole economies, in the developing world. If this premise be true, this would imply that there is some correlation between Internet usage and development. The diagram below does indeed appear to show a close relationship between Internet host density and human development. While this does not in itself prove causality, the connection must nonetheless be significant. Though the obvious inference is the link between development and penetration of the ICT technologies, the other side of the coin could very well be understood to be the linkage between the prosperous nations and their access to new technologies. It would thus lead to the

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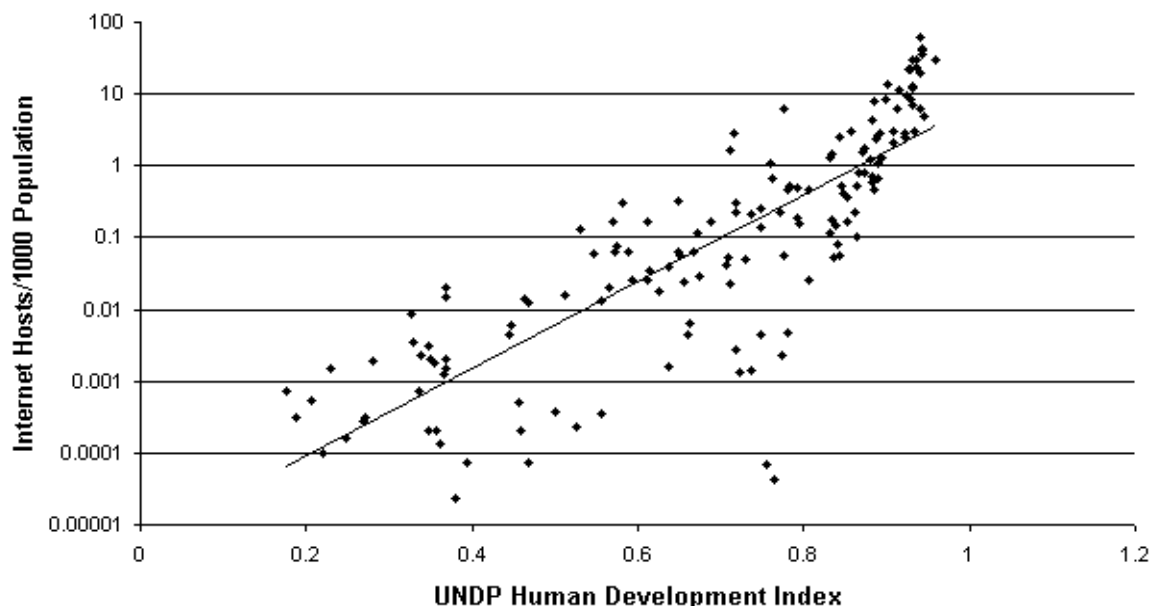
<sup>12</sup> Economist, 1999, The net imperative: Business and the Internet Survey, June 26th, 1999, The Economist, London.

<sup>13</sup> Doyle, C. J., Ferguson, G. T., and Morris, H. F., 2000, *The Net Effect*, Outlook, Accenture at [www.ifc.org](http://www.ifc.org)

<sup>14</sup> Singh, A. D., 2000, Background papers for ITC ExecForum 2000

conclusion that as with every other technological advance, the benefits tend to be derived mostly by the resource rich<sup>15</sup>.

***Correlation between Internet hosts per capita and UNDP Human Development Index<sup>16</sup>***



Such data would appear to indicate that Internet and e-Commerce are both central to business operations in the new economy. The rate of adoption of e-Business by enterprises in developing countries is therefore crucial, if the benefits of the new digital economy are to be spread widely round the globe.

At a global level the variations of adaptation and success with e-Commerce and e-Business is leading to the conclusion that within the category of 'developing country' itself, new gradations are emerging. Where barriers are not in place and e-Commerce actively encouraged the new technologies of Information and Communication (ICTs), can become an integral part of the daily operations of even very small enterprises and the new emerging business models. The benefits of ICTs and e-Commerce can indeed be made available to large numbers of resource-poor people globally in developing countries<sup>17</sup>.

E-Business and the Internet if correctly utilised for development can be major instruments to ensuring future sustainable economic growth. The deep impact of electronic commerce on the economies and societies of the Caribbean will in time

<sup>15</sup> Tanburn, J and Didar-Singh, A., 2001, ICTs and enterprises in Developing Countries: Potential and Challenge in the digital economy, ILO, Geneva

<sup>16</sup> Press, Larry, 2000. The State of the Internet: Growth and Gaps. INET 2000 Proceedings. [www.isoc.org/inet2000/cdproceedings/8e/8e\\_4.htm](http://www.isoc.org/inet2000/cdproceedings/8e/8e_4.htm)

<sup>17</sup> Tanburn, J and Didar-Singh, A., 2001, ICTs and enterprises in Developing Countries: Potential and Challenge in the digital economy, ILO, Geneva

improve economic efficiency, competitiveness and profitability (for those engaging in it) and therefore result in the development of the information society. Within such an environment countries (and enterprises) can benefit by:

- a) increasing internal organisational and management efficiency;
- b) increasing transaction efficiency and reducing transaction costs for both suppliers and buyers;
- c) extending market reach of suppliers and increasing choice for both suppliers and consumers;
- d) providing accurate information to improve service delivery such as in health and other social service provisioning or the providing of information to consumers/citizens.

E-Business and the new emerging digital technologies and services can be real tools for development and help improve the livelihood of millions across the globe, by linking up remote regions and bringing together scientists, administrators, health professionals, managers and people into projects and programmes to promote economic and social development. While success with e-Commerce leads to growth for an economy, utilisation of the resources and power of e-Commerce and ICT can be utilised for addressing the basic issues of poverty reduction, healthcare, universal education and good governance.

### ***Some Obstacles***

There is however no simple strategy or solution as the situation is both many-sided and changing rapidly. The Internet and e-Commerce impact at different levels and therefore must be understood at diverse dimension. They are technologically information intensive and operate simultaneously at both the micro-economic (enterprise) level as well as the macro-economic (societal/national) level<sup>18</sup>. They are resulting in new organizational forms that require a completely new organizational culture and new skills to both operate and design functions. All of these mandate a new perspective and approach to policy planning and strategy, especially in developing countries such as those in the Caribbean where the development of electronic transactions on the Internet are still in their infancy.

As an example, e-Commerce is making it easier for artisans, musicians and other artists in developing countries to access business-to-consumer world markets, cutting out multiple layers of middlemen in the process. The evidence of real benefits in such cases is still scattered and anecdotal, but the trends are clear. Yet daunting obstacles remain. Internet entrepreneurs can take advantage of network benefits only when enough prospective customers and suppliers are online. In addition, the lack of local content does retard the growth of the local user base. Also, access costs are a serious deterrent to wider adoption. Studies show that the most important use of the Internet in developing countries is limited to e-mail services - rather than World Wide Web services - which require minimal time online<sup>19</sup>.

E-Business is a complicated endeavour. Particularly to implement it for a region which includes various countries and territories and a great number of variables, as is

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<sup>18</sup> UNCTAD, 2000

<sup>19</sup> Goldstein, A. and O'Connor, D., July 20, 2000, Bridging the digital divide, Financial Times, at [www.ft.com](http://www.ft.com)

the case in the CARICOM region. The products to be sold usually belong to different manufacturers. These manufacturers may not have the necessary technology to receive the orders from customers and even if they have it their countries mailing and delivery system may not be reliable enough to process the orders in the estimated time of five (5) to six (6) weeks required by United States laws. Also, commercialising products electronically entails on-line credit card verification, graphic displays of the products and the capacity to generate mail orders and delivery. These new types of commercialisation open a Pandora's box of problems. Some of these problems to be addressed are: The responsibility of warehousing and distribution, billing and payment processes, readiness on the part of the participating companies, etc<sup>20</sup>. All this requires elaborate infrastructure and organisation which is still nowhere near the norm in most of the developing countries.

### **The 'digital divide'**

There already exists a huge development gap between the developed and the developing world. Many development specialists feel that this is further being widened in the new digital economy. The fact that only an estimated 5-10% of the content on the Internet is of non-Western origin while the developing world population represents more than half of the world's population indicates how far the Internet is from true cultural and global diversity. This is a serious issue, in view of the potential importance of the Internet for all spheres of life everywhere. This is a serious issue, in view of the potential importance of the Internet for all spheres of life everywhere, and because of the trend for the facility to be increasingly dominated by a few countries and private companies<sup>21</sup>.

E-Commerce today remains mostly a US<sup>22</sup> and Western based activity, though connectivity has significantly improved in many parts of the developing world -- for example, every capital city in South America and Africa enjoys some level of Internet access today. However, there are still significant disparities in the level of Internet penetration across regions, which can have profound implications for an individual country's ability to participate in the global electronic market place. Today 96 per cent of Internet host computers reside in the highest income nations with only 16 per cent of the world's population. *There are more Internet hosts in Finland than the whole of Latin America and the Caribbean*, more in New York City than on the entire continent of Africa<sup>23</sup>.

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<sup>20</sup> Caribbean Export Development Agency, 1999, E-commerce project Information paper, CEDA, Barbados

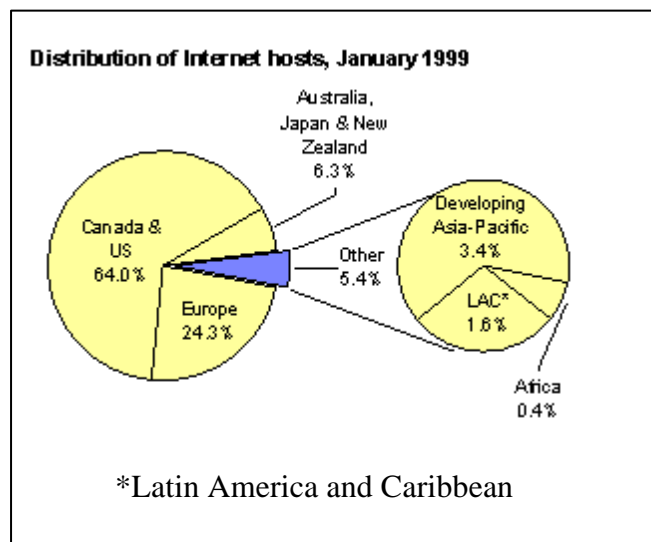
<sup>21</sup> With Internet traffic having overtaken world telephone traffic, the world's 13 biggest Internet access providers are all American, with British Telecom, Europe's biggest, bringing up the rear in 14th place. (Data Communications, Paris, No. 1., October 1998, quoted in Riches on the Information Highway, Le Monde Diplomatique, May, 1999).

<sup>22</sup> US domination of the world economy and its new technological revolution - that of communications, is now a predictable scenario. Several factors explain this advantage. They range from its long history of multi-channel television, low phone line costs, strong intellectual-property industry (movies, music, software), English language and the experience with long-distance mail-order business (Cairncross, 1997).

<sup>23</sup> ODI-UNDP, 2001

This disparity between low and high-income regions is evident from the chart below<sup>24</sup>.

**Figure 3.**



The position of the Caribbean countries clearly shows the glaring gap in development. Many would however tend to underestimate the implications in view of the changed *dotcom* scenario in the US. This position needs to be elaborated upon.

### **The new economy model: Prospects for the future**

All businesses associated with communications, information technology and e-Commerce are encompassed in what is commonly called the "new economy". The implications of this model of economic growth are a matter of heated debate. Recent reversals in the so-far rising stock prices of technological companies as opposed to the declining values of the old economy businesses prove that this model not only holds promise (at least for the west) for ushering in prosperity but could also bring about a period of uncharted and messy change. Similarly, there are several views amongst economists about the fundamentals of the new economy model and how it relates to established doctrines of economic theory. Just as many old theories are being challenged, new developments are raising doubts about the sustainability of the new economy itself. Further empirical evidence is required for either view.

What is clear is that the new "digital economy" will have a major impact on the global economy. National markets, especially in developing countries, may not yet be feeling the changes but the waves of the new global competitive environment is likely to effect enterprises throughout the world. The impact of e-Business for developing countries today is mostly in the international trade sector. But e-Commerce could soon have a vital impact on the services sector, where the potential for offering digitized service and transactions is very high.

<sup>24</sup> ITU, 1999. According to the OECD latest report, the position in fact has worsened and by October 2000, 95.6% of the 94 million Internet hosts were in the OECD area and only 4.4% in the rest of the world. (OECD, 2001)

The recent *dot.com* crash in the stock markets and particularly the falling (or correcting as some say) NASDAQ exchange (the major stock index in the US for technology companies) have shown clearly that the dramatic rise in the stock values of technology companies was not very realistic and therefore the cautious attitude to investment in such ventures has returned. According to some commentators several ICT firms welcome this shakeout in the market as they believe that it would be better for e-Business and the new economy as only the better firms will survive<sup>25</sup>. This scenario is being played out in developing countries too and their governments have to consider the question of norms and rules for venture capital (especially since so much direct assistance has traditionally been provided by the public sector in these countries) as well as for the stock exchanges<sup>26</sup>. The fact of the matter however is that despite rough economic times, especially in the US economy and stock-market upheavals in the last few months, e-Commerce and the Internet growth continues. Many experts attribute this to, on the one hand, the power consumers have found online and on the other, the efficiencies that businesses have found in digitizing their processes. These factors will continue to push e-Business forward regardless of what happens to the US or the world economy in the near future.

### 1.3 International issues

This study looks at the issues concerning e-Commerce that are under discussion and negotiation at international forum that impact on the Caribbean countries. The most important forum is quite obviously the WTO (World Trade Organization). For the CARICOM, the discussions at the FTAA are also important as they impact directly on the region and will have an important geopolitical and trans-economic consequence in the near future.

It is important to note that at each of these forums, including at WCO (World Customs Organization) and ITU (International Telecommunications Union), the deliberations regarding e-Commerce are really at the level of discussions and not formal negotiations. Yet it is important to actually prepare a 'negotiating stand' especially so far as the WTO and FTAA are concerned, as the discussions are essentially negotiatory in nature and in their essence contain issue that could very well end as negotiating arguments in the future. The second point to take note of is the growing importance of the WTO as opposed to the traditional UN organizations that so far determined and discussed these international issues such as ITU, WCO, UNESCO, UNCTAD etc<sup>27</sup>. This represents the changing global economic environment more and more determined by technological issues authored and determined by trans-national corporations, especially in the high-tech and digital world, resulting in the locus of much policy making registering a shift from government to private business.

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<sup>25</sup> IHT, 24<sup>th</sup> April 2000, Internet firms profess to welcome a shakeout, IHT, Paris.

<sup>26</sup> ITC, 2000, Emerging business models in the digital economy, at [www.intracen.org/execforum/docs/ef2000/e\\_brief2000.htm](http://www.intracen.org/execforum/docs/ef2000/e_brief2000.htm)

<sup>27</sup> Hamelink, C., 1999.

## E-Commerce and the WTO

E-Commerce was raised first in the WTO by the United States in February 1998 as a market access issue with the proposal for member states not to impose any customs duties on electronic transmissions. This duty 'standstill' measure accepted for one year till the next General Council got converted into a full-scale study and debate on essentially three major issues,

- the question of agreeing to a permanent 'stand-still' on the customs duty imposition stand,
- the question of classification of e-Commerce, either as a good, service or something else from the standpoint of the existing WTO agreements, and
- the question of protecting IPRs<sup>28</sup> on the Internet.

The then agenda of the US was to achieve a global ban on tariffs on products and services that can be delivered electronically via the Internet. This resulted in the May 1998 WTO Ministerial declaration on global electronic commerce and the on-going WTO work programme on e-Commerce. The Ministerial declaration of 20th May 1999 directed the General Council to establish a comprehensive work programme to examine all trade-related issues relating to global electronic commerce "taking into account the economic, financial, and development needs of developing countries" and report to the third session of the Ministerial Meeting. (Four WTO bodies - The Committee on Trade and Development, the Council on Trade-Related Intellectual Property, the Council on Goods, and the Council on Services – have attempted to review how existing multilateral trade agreements apply to global electronic commerce). It also asked all members to continue their current practice of not imposing customs duties on electronic transmissions until the next Ministerial meeting. This next meeting was the now infamous Seattle Meeting where for several reasons the issue could neither come up nor be decided upon. It is now to be considered at Doha this November.

### *Issues of market access: Customs duty*

Market access is largely determined by tariff regimes and is therefore an important issue for a country's negotiating stance at the WTO in response to the on-going standstill on digital transactions. Positions on possible duty impositions are not so clear cut. For some developing countries such as India, Singapore, Malaysia, etc. where most of the flows of digital services and software (developed domestically) are outwards to other countries, export duty is not an issue because export flows are not taxed. On the import side, software and information inflows for processing in back-end offices<sup>29</sup> and call centres<sup>30</sup> are mostly not subject to duties either - a measure to encourage the IT industry and exports. However, this situation may not hold good for the CARICOM where import and export duty structures are different and where financial and other service transactions are of greater importance to the economy. Hence the question as to whether or not tariffs should be levied needs to be very carefully considered. Customs duties are a very important source of revenue for cash needy governments in poor countries. It is therefore important that the full implications of levying duties or otherwise are studied carefully and time given (for

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<sup>28</sup> Intellectual property rights

<sup>29</sup> Service, maintenance and development centres set up in a different location and linked through an Intranet.

<sup>30</sup> Centres where customers call or connect via the Internet for varied services from reservations to queries.



better technologies to emerge that would make duty valuations possible and enforceable for digital commerce also) before any final decisions are taken on this matter<sup>31</sup>.

#### *The issue of classification*

E-commerce raises some fundamental difficulties before the WTO. First, it blurs the distinction between a good and a service. This matters because WTO rules treat goods and services differently. Goods tend to be subject to tariffs; services are not, but trade in services is limited by restrictions on “national treatment”<sup>32</sup> or quantitative controls on access to foreign markets. So the rules that will be devised for electronic commerce may affect the choice between physical and digital methods of trade<sup>33</sup>.

The WTO discussions on e-Commerce see it as divided into three broad categories for the purpose of policy discussion:

- the searching stage where producers and consumers, or buyers and sellers, first interact over the Internet;
- the ordering and payment stage once a transaction has been agreed upon; and
- the delivery stage.

The new issues relate mostly to products that can be delivered electronically through the Internet (stage iii) transactions), as this is where the most significant policy questions arise. It is being argued that the WTO already has market access regimes<sup>34</sup> in place -- the GATT (the General Agreement on Tariffs and Trade which deals with trade in goods) and the GATS (the General Agreement on Trade in Services). The question that arises is whether either (or both) of these regimes provide an adequate framework for dealing with market access vis à vis electronic commerce. The example below illustrates that this is not a simple question.

So far as trade in goods is concerned, there are some products that can be digitized and sent over the Internet to be again converted into a good. Some examples are: music converted into a CD; information or writings converted into a book; videos and films transmitted digitally and converted to hard copies; graphics, pictures, designs etc. In all such cases the end usage could of course also continue to be in digital format. Even if they are, there would be a problem of valuation. Also in the case of customized writings and music, say for a theatre production, they could very well be treated as trade in services. In other words it would be a non-standardized usage or service<sup>35</sup>.

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<sup>31</sup> Singh, A. D., 1999.

<sup>32</sup> “National treatment” in this context means the giving of equal treatment to international based service providers compared to domestic.

<sup>33</sup> World Trade Survey, Oct 98, ECONOMIST, London

<sup>34</sup> The international agreements on trade that were negotiated and established ostensibly with a view to promote greater (and fair) international trade.

<sup>35</sup> A book or music or software on a CD for mass consumption would be treated as standardised products, whereas customised writings, music, software etc. would be non-standardised products and classified as services.

### Complexities of e-Commerce/e-Business transactions

“The Internet as a means of trade raises several complex issues. The following example helps elaborate the complexities in the types of transactions that are now possible with e-Commerce in relation to a common Anti-virus software programme:

1. A consumer could just buy it at a store near by, packaged in a CD<sup>36</sup>. (This could be an imported product).
2. The manufacturer could send it over the Internet to local or cross-border distributors who then copy the programme on to CDs and sell them at their store to local consumers.
3. A consumer could order it over the Internet from a domestic or cross-border manufacturer and it would be mailed to him.
4. A consumer could order it over the Internet and it could be sent in digitised format directly to the computer of the consumer.
5. A consumer while ordering the software could choose an option whereby the programme is regularly updated through the Internet by the supplier.
6. Another option could be that it would be updated or modified based on interactive and customised requirements of the buyer.
7. A further possibility could be that the consumer makes an illegal copy of the software and either just passes it on to a friend, or in fact sells it further, either in the form of a CD or just as an attachment to an e-mail, for example.

Of the above mentioned seven different variations on the transaction (there could be more) only the first conforms to traditional processes of buying and selling and is fully covered by existing trade agreements. The balance five are all Internet or e-commerce enabled transactions. (In fact even in the first, a consumer may have checked out prices, store locations etc. via the Internet before going to a regular store to purchase the software programme).

Some of the complexities are the following:

Firstly the question of tariff. This becomes an issue in all the cases where the good has not passed through a recognised customs or domestic tax point (when it does, the existing tariff structure would be applicable). In all the other cases, it would depend on the supplier, distributor or consumer to declare the transaction and pay the relevant duty or tax. For governments the issue is not just enforcement but also valuation.

Secondly, this raises the question of whether the trade transaction was for a good (a CD – N°. 1, 2 and 3 above) or was it a service (on-going anti-virus protection – N°. 4 and 5)? And if it is a service was it non-standardised and customised (No. 6)?

Thirdly, the issue of intellectual property protection arises in the last case (N°. 7).

(Variations of this example could be there for any digital transaction.)

All the above scenarios have implications not just on existing international trade agreements but also on future negotiations and positions to be taken by all countries including the developing<sup>37</sup>. (Singh, A. D., 2001)

It is argued by several countries and experts that the agreement on services (GATS) encompasses e-Commerce and that all services are covered by it whether delivered

<sup>36</sup> Compact Disc.

<sup>37</sup> Singh, A. D., 2001,

electronically or otherwise. Today the great bulk of products delivered electronically, like telecommunications and financial services, are covered in the services classification lists. However would this cover all existing services and all digital transactions? Even for existing services there is no compulsory or universally agreed classification system. In many instances the nomenclature used is that based on the provisional Central Products Classification (CPC) of the United Nations. However this classification is not used in a number of sectors, including financial services, telecommunications, air transport and maritime transport. Moreover it must be noted that this classification was last issued in 1989 and therefore today's technological developments and delivery options could not have been foreseen.

It is also being argued that for services the principle of 'technological neutrality'<sup>38</sup> applies and the mode of delivery does not matter. This notion was used in the negotiations on basic telecommunications and does not have legal binding status. Thus it cannot be applied retroactively and automatically to market access and national treatment principles negotiated in earlier services agreements<sup>39</sup>. In this debate about "transport modes" what is important is not the way in which goods services and information is "carried" (whether electronically or by traditional means) but the way in which value is added<sup>40</sup>.

For most products traded in e-Commerce, the distinguishing characteristic is the mode of delivery (whether of the order or the Service). For digitised products, the distinction is not clear e.g. books, music, software are treated as goods as they are delivered in the form of paper, cassettes or discs. If such products can be digitized then no carrier medium is required and then it becomes appropriate to classify these as services. Such intangible goods could then come under the ambit of Intellectual Property Rights (IPRs) and thus trade in such goods would be considered as trade in IPR and not in goods and services.

Despite the debate and the confusion that e-Commerce has created in the existing scenario, the view of the developed world appears to be:

- E-Commerce, comprising physical deliveries is covered under the GATT rule while those comprising electronic deliveries will fall under the GATS.
- All the four modes of supply under GATS will also apply to electronic deliveries.
- All the GATS provisions relating to General Obligations (MFN, national treatment and elimination of QRs) apply to e-Commerce.

Since e-Commerce and e-Business are still developing. All its transactions cannot be limited and classified by definitions of goods or services. They may be either or both or even something more. Developing countries therefore need to be prepared to take up new negotiations in the area of e-Commerce and then decide on the matter of commitments and principles.

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<sup>38</sup> Concept that in the negotiations concerning the GATS agreement, the services or transactions envisaged were not meant to be dependant on the type of technology used nor the mode of delivery.

<sup>39</sup> UNCTAD, 2000.

<sup>40</sup> ITU, 1999, Millennium World Telecom, ITU, Geneva.

### *Intellectual property rights and e-Commerce*

In this area there are two areas implicit. The first concerns the management of the Internet addresses, which essentially means exercising whatever marginal control there is over the medium. The second is that concerning the protection of IP rights over the Internet.

As the Internet is the platform for global e-Commerce, the administration of the “domain names”<sup>41</sup> system is important from both a policy and procedural perspective. The principal players in this are the Internet Corporation for Assigned Names and Numbers (ICANN), and the Domain Name Supporting Organisation (DNSO) that take the few central decisions concerning protocol or for allocating Internet addresses or domain names. These are important issues with the latter having very strong commercial implications for the Trademarks issue<sup>42</sup>. Unfortunately developing countries are not represented on these bodies.

E-Commerce entails the buying and selling of products and services at a distance. It is therefore becoming increasingly important to rely on the reputation attached to trademarks and other distinctive signs. Not only is the question of their protection an issue, but conflicts arise between them and Internet ‘domain names’, which, though designed to serve as addresses, have acquired a further significance as business identifiers<sup>43</sup>. Several addresses containing the trademark names of established companies have been registered as domain names thus leading to disputes over their usage, as well as to allegations of what is referred to as ‘cyber-squatting’<sup>44</sup>. This practise has become so popular that it is today estimated that 98% of the words in Webster’s English Dictionary have been registered as domain names<sup>45</sup>! Selling innovative and interesting names as Internet addresses is one thing, but ‘cyber-kidnapping trade-marks’ of existing businesses is another ball game<sup>46</sup>. The World Intellectual Property Organization (WIPO) has in 1999 issued a report on the issue of trademarks and domain names, recommending practices and guidelines intended to prevent disputes in this area<sup>47</sup>. They also accept complaints in this area and issue judgements from Geneva on the same. This process is however rather cumbersome and very expensive for poor countries and their firms.

There is a related issue here. Each country has a separate Top Level Domain (TLD). Eg. ‘.bb’ for Barbados. The allocation and management of domain names in each

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<sup>41</sup> Domain names are the people-friendly form of Internet addresses (which are actually numbers) designed for computers to recognize the address of a particular site on the network.

<sup>42</sup> Top-level (country) domain names can even have a political significance as in the case of Palestine having recently been granted the “.ps” domain. And countries with interesting and commercially significant Web domain addresses like “.TV” for Tuvalu in the Pacific can sell the rights to commercial enterprises (in this case multi-media companies) to register companies with their suffix, and Moldova can sell registration rights to US doctors to register with their unique suffix – “.MD”.

<sup>43</sup> WIPO Report, 1999.

<sup>44</sup> This is the practice of obtaining well-known people-names or common terms, brand names and trademark names as Internet addresses with the hope of later selling them at a profit.

<sup>45</sup> Wall Street Journal, 25<sup>th</sup> April 2000, WSJ, New York.

<sup>46</sup> A new form of cybersquatting is what is being referred to as the “typosquaters”, where names very similar to existing popular website addresses are registered with the hope that clients would possibly type the wrong address when trying to connect on the Internet and thus land up at the alternative site.

<sup>47</sup> Under the new Uniform Dispute Resolution Policy adopted by ICANN, the first such case filed by the World Wrestling Federation (WWF) was cleared by the WIPO Arbitration and Mediation Centre this January.

country are also of commercial significance. All Caribbean countries should ensure that their domain name registry is nationally owned and managed in a transparent manner. Many are not. For example, the domain name registries for St Kitts and Nevis, St Lucia and Dominica are managed by the University of Puerto Rico<sup>48</sup>. Due to this most websites and email addresses in the region are tending to use '.com' or be sub-sets of existing addresses and servers outside the region. This does not help with the developing of a regional or local brand equity.

To protect IPRs requires that governments and the private sector develop and implement an appropriate mix of regulatory, contractual and technological measures, and ensure adequate public awareness of the role of copyright and related rights in the information society. This would on the one hand provide protection to local industries in global markets and on the other, spur investment and growth by providing a safe and legal environment. Today most member states are fully equipped in the IPR area, either legally or technically.

### **E-Commerce and FTAA**

The FTAA established a special committee for discussions on e-commerce, entitled the Joint Government-Private Sector Committee of Experts on Electronic Commerce. Much of the agenda of discussions here is very similar to that in other forum such as WTO, OECD, WCO etc., though the mandate of the committee was really was only to study the issues and gather information on the status of e-commerce and Internet readiness in FTAA countries. This committee did an excellent job in putting together the essential features of e-Commerce as it exists for the region and coming up with recommendations for the region. As things stand, these discussions and committee may not convert into a negotiating group because the issues are still unsettled and e-commerce is still a very dynamic area. Much of the final position will depend on the WTO negotiations as they will reflect in such forum. As per the present structure of FTAA, which is based on sectoral discussions, discussions on e-Commerce may not be raised to negotiating level as technically e-Commerce or e-Business are not sectors *per se* and hence cannot fit into traditional negotiating structures. Furthermore, many of the Latin countries are sceptical about the direct benefits to them, given the clear interest and advantage of the United States in e-commerce and therefore may not support this<sup>49</sup>.

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<sup>48</sup> Chaitoo, 2000

<sup>49</sup> Chaitoo, 2000

## Section II: The Country E-Readiness Framework

### 2.1 An analytical framework of Country e-Readiness

In order to recommend an E-Business capacity development strategy for the CARICOM region it is first of all important to make an assessment of the ‘e-readiness’ of the countries of the region for and in the new digital economy. There are several ways or options to doing this. These range from the conduct of a simple test to check the availability and reliability of the Internet in any city or town in the country concerned, to significantly more refined tests and gauges. One of the earliest methods devised for such an e-readiness assessment is the self-conducted test developed by the Information Technologies Group at the Harvard University’s Center for International Development (“Readiness for the Networked World” available at [www.readinessguide.org](http://www.readinessguide.org)). This guide asks questions in five key categories: access; education; society; economy; and policy and then ranks each country.

A “e-business readiness” ranking published last year by the Economist Intelligence Unit<sup>50</sup> for example, provides a revealing indication of the extent of gap confronting many developing countries.

Most e-ready countries	Middle-level readiness	Lower-level readiness
United States, Sweden, Finland, Norway, Netherlands, United Kingdom, Canada, Singapore, Hong Kong, Switzerland, Ireland, Denmark, Germany France Belgium, Australia, New Zealand, Austria, Italy, Israel	Japan, Spain, Chile, South Korea, Portugal, Argentina, Taiwan (Prov.of China), Thailand, Poland, Hungary, Czech Republic, Malaysia, Greece, Mexico, Brazil, South Africa, Slovakia, Indonesia, Turkey, Saudi Arabia	Bulgaria, Venezuela, Romania, Russia, Ukraine, Philippines, Peru, Colombia, Egypt, India, China, Sri Lanka, Ecuador, Vietnam, Pakistan, Kazakhstan, Algeria, Iran, Nigeria, Iraq

It is to be noted that countries of the CARICOM do not find a listing in this<sup>51</sup>. Similarly the McConnell International’s Global E-Readiness Survey<sup>52</sup> shows clearly that all developing countries continue to have major obstacles to ‘E-Readiness’; it also shows that countries in Africa are least well prepared, but that there are countries in Asia and Latin America which also have problems. The McConnell International survey covers Connectivity, E-leadership, Information security, Human capital and E-business climate. A recent work by UNDP along with Accenture and the Marple Foundation has attempted a similar analysis to assess the preparedness of developing countries and recommended a framework for action. Based on these various works this report carried out country assessments on the basis of a framework developed for analysis designed to lead into recommendations for an E-Business strategy. Such a framework is outlined below.

<sup>50</sup> The ranking combines the EIU’s assessment of the business environment and a “connectivity rating” developed by Pyramid Research, the EIU’s communications division.

<sup>51</sup> Possibly an indication of the low level of e-Business in the region.

<sup>52</sup> McConnell International, August 2000, *Risk E-Business: Seizing the Opportunity of Global E-Readiness*, at [www.mcconnellinternational.com/ereadiness/EReadinessReport.htm](http://www.mcconnellinternational.com/ereadiness/EReadinessReport.htm)

**Country framework analysis for CARICOM States on their E-Readiness  
for E-Business  
(June/July 2001)**

This framework first outlines some basic data such as Population, Area, GDP, and Per Capita of the country under study, only to set a comparative index for each state.

The e-readiness analysis comprises of the following set of criteria that help outline the preparedness of each country. (Framework Analysis for each member state is at Annex 1)

<b>1) Infrastructural framework: Connectivity and cost</b>	<i>This essentially examines the telecom infrastructure - the information highway on which e-Commerce rests and develops. Since the main issues here are access and the cost of connectivity the research seeks to find out the level of PC penetration, total number of Internet accounts and the pricing of some comparable connection plans of the existing ISPs. Initiatives for any incubator type facilities are also outlined.</i>
<ul style="list-style-type: none"> <li>a) Availability of communication services, access centres and networked computers</li> <li>b) Existence of effective competition among communication and information services providers</li> <li>c) Affordability and reliability of network access, including the cost of service (against per capita/average wage)</li> <li>d) Reliability of electrical supply for e-Business-critical operations</li> <li>e) Existence of any incubator facilities/IT Parks</li> </ul>	
<b>2) Policy Framework: E-Leadership and Participation</b>	<i>Particularly for developing economies, governmental interventions and strategies are of crucial importance. The research asks if e-Business is a national priority and if so, is there a formal policy and strategy</i>
<ul style="list-style-type: none"> <li>a) Is E-Readiness a national priority</li> <li>b) Is there a national IT/E-Commerce plan or strategy existing</li> </ul>	

c) Is there an agency leading the initiative	<i>and who is leading the initiative. If</i>
d) Progress with e-Government and promotion of participation of citizens	<i>government is serious about this then what is the status of IT in Government and plans</i>
e) Digitization of trade infrastructure and procedures	<i>to make public services available to citizens – particularly for trade and</i>
f) Partnerships between industry and government to improve E-Readiness	<i>commerce. Also, is the effort participative?</i>
<b>3) Legal Framework: Security and privacy</b>	<i>E-Commerce transactions on the Internet,</i>
a) Legal support for e-Commerce transactions	<i>both commercial as well as for e-</i>
b) Strength of legal protections for processing and storage of networked information	<i>Government, require a legal and</i>
c) Strength and effectiveness of the legal and regulatory framework to address and prosecute cyber crimes, authorize digital signatures, and enable public key infrastructures	<i>regulatory framework. Does the country provide it. In case of dispute, is redress available and possible through the existing legal establishment? Are secure transactions possible and is cyber crime</i>
d) progress in protecting intellectual property rights.	<i>including IPRs being addressed. These are the questions both investors and consumers</i>
e) Measures of consumer protection and extent of efforts to protect privacy.	<i>want to know before beginning e-Commerce businesses and transactions.</i>
<b>4) Human capacity framework: E-enabled Human Capital</b>	<i>As human capital is the most important resource in the new economy, what is the</i>
a) Availability of e-professional for e-business	<i>availability of such professional for e-</i>



b) Skills and efficiency of the workforce	<i>Business – both IT and management</i>
c) Levels of IT teaching in the education system including private sector initiatives	<i>trained. What are the training and educational institutes doing about it and</i>
d) E-literacy amongst citizens	<i>how much of IT-literacy is there in the</i>
e) Is the institutional framework fostering culture of local creativity and information sharing within the society	<i>country? Are institutions supporting creative thinking and information sharing?</i>
<b>5) E-Business Environment: Enabling seamless E-Commerce</b>	<i>E-Business requires an enabling environment that is dependant on several</i>
a) Present status of IT industry and IT in industry	<i>inputs – IT services, banking and financial</i>
b) Existence of e-enabled financial framework to support electronic transactions	<i>framework, regulatory and investment climate and a favourable and supportive</i>
c) Availability of venture capital for e-Business	<i>bureaucracy. These aspects are commented</i>
d) Transparency and predictability of regulatory implementation, openness of government, rule of law, etc.	<i>upon in the study.</i>
e) Climate and policy for participation by foreign investors in ICT businesses	
<b>6) The International and Regional framework</b>	<i>Finally, the study seeks to examine the</i>
a) Negotiating stand on E-Commerce at the WTO, FTAA etc.	<i>country international position vis a vis the discussions regarding e-Commerce in</i>

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|--|--|
| b) Regional and sub-regional collaboration | <i>international fora, especially WTO and the FTAA, as these are of much importance to the Caribbean states. Also are there any regional or sub-regional initiatives that the country desires to pursue.</i> |
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### **Additional Issues**

There are certain additional issues that could have been added to this framework. That is always a possibility with any framework analysis. Limitations of data and a focus on policy research has precluded some of the possible additions. One such example or area is that of technology. Though terms of reference of this study do include the area of technology, it is the view of this working paper that debates and options on technology as part of any strategic initiative at the policy level are by definition limited in application. Technology is dynamic and constantly changing. Its application and adaptability in any economic and geographic area is dependant on a whole set of variables, not the least of them being cost. Demands of the best and latest technology, on the one hand have higher price/cost implications for consumers and government, and on the other, they could have the danger of getting tied-in on to a particular technological road and thereby missing out on new and better technological options that may subsequently be available. It is for this reason that developing economies need to strive to use cheaper options and available infrastructure, while at the same time concentrating on the policy framework that allows for competition, transparency and efficiencies of a market driven technological choice. Basically the point is that governments should be led not by technology issues but by policy issues.

In the area of the telecom infrastructure, in so far as it impacts e-Commerce/e-Business, it is the view of this study that the issue really is of good reliable connectivity at an affordable cost. The Caribbean region has for long been under monopolistic telecom arrangements. Today many of the member states have initiated reform that is making available new ISPs in the market. As an example here one could take the technological choice of the new ISPs between using the fibre-optic gateway access of the existing telecom company, or setting up of an independent satellite link. The issue is really going to be that of competitive cost between the two options as well as the availability of redundancy or back-up. Today satellite link costs are falling on the one hand, while undersea fibre optic links also getting more accessible. There is also locally, the choice between wireless and fibre<sup>53</sup>. In each of these issues, the market is the best determinant in providing high-speed dependable and

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<sup>53</sup> It however argued by some experts that in view of the dangers of Hurricane and bad weather conditions, fibre connectivity is a better long term option.

affordable access for e-Business. In fact predictions of e-Commerce for tomorrow and views such as that of the 'death of distance' advocate that with growth of the market and the fast-paced technological developments, costs of telecommunication (and the Internet) will soon become a non-issue!

As mentioned earlier, the above framework has been so designed as to facilitate the diagnostic field study as well as to address the terms of reference of this assignment. The process is so constituted as to provide a one-glance guide to the present status of e-Readiness in each member state and by doing so also indicate the required areas of intervention towards becoming e-Ready. Formulation of plans towards this would thus lead to the evolving of an E-Business strategy at the national and regional level.

## **2.2 Country Situational Analysis: E-Readiness of Member States**

Based on the above framework the field research of the mission (carried out in June-July 2001) has produced a country-wise analysis of each member state. These are at Annex.

These country diagnostic studies are summarized below in three principal areas of

- a) Info-structure
- b) Policy Framework
- c) E-Business

This section is also interspersed with 'best practice' or illustrative case studies that provide both a bench-mark as well as examples of innovation and entrepreneurship that show the capacity and potential available in the region for e-Business.

## ***COUNTRY DIGNOSTIC STUDIES***

### **Member State: Antigua and Barbuda**

#### ***The Info-structure***

Antigua, though a part of the OECS did not participate in the Telecom Reform initiative (which comprises of 5 Eastern Caribbean states) that led to a revised agreement with Cable and Wireless, the principal and monopoly telecom provider in the region. A probable reason was the unique arrangement that Antigua has where the government fully owns the local network and international communications alone are with Cable & Wireless. So even though the existing monopoly of Cable & Wireless was till 2012, a second ISP (ACT) has already started functioning, using the Cable & Wireless gateway as well as having satellite connectivity also as back-up. The logic and compulsion of government is to ensure full redundancy and 100% reliability of the network as Antigua today has the world's largest number of Internet Gaming companies registered and they need this level of guarantee of reliability. The result is an alternative available for consumers and falling Internet access prices. The earlier price of EC\$200 for 100 hours of dial-up access has today fallen to EC\$99 unlimited access. Cable & Wireless lease of a T-1 line has also dropped from EC\$48,000 to 28,000 per month. The second ISP, ACT besides offering access for individuals an businesses, also offers, Web hosting, security, domain name services and audio and video streaming.

A Free Trade Zone has been set up quite some time ago to encourage IT companies but only the virtual or web-based Internet gaming companies have come up. Govt. have also set up an Institute of Technology in 1997 that trains certified personnel for the IT sector. The training courses here include networking, desktop publishing, graphic programmes, computer aided design (CAD), programming (Java, Visual Basic, C<sup>++</sup> etc. There are also some private sector IT shops and some IT in schools but all at a fairly basic level.

The International Financial Sector Authority has made a suggestion for putting in place e-Commerce legislation but it is presently not on the cards.

#### ***Policy Framework***

A draft IT policy has been prepared by the IT Centre but it still awaits approval The PMs Ministry is pushing for it but IT and e-Commerce are not yet a national priority. There are also initiatives on going for re-engineering Customs, Treasury and Inland Revenue but e-Government services are not going to be available for some time yet. Interestingly, the IT Centre is planning to build an open-source based community application software that could be replicated across government depts.

***E-Business***

There are some 50 information technology related businesses in Antigua. However, though there is a fair amount of use of computers in most businesses in Antigua, actual e-Commerce transitions are virtually non-existent (except for the gaming industry). The real success of Antigua in E-Commerce or the web has been in the area of Internet Gaming.

**Case Study 1: Winning on the Web: Internet Gaming Industry, Antigua**

Antigua today is said to have the largest concentration of licensed Internet gaming companies in the world – some 87, which account for one-third of the world total. Since Internet gaming is one of the two industries that have consistently made money on the web, this has been a success story for the past 6 years for the country.

The Government of Antigua and its established Free Trade Zone, was able to identify the emerging Internet based gaming industry as a viable niche market and took the strategic steps necessary to make it happen. These included becoming member of the Internet Gaming Council, legislating on appropriate regulations, launching an aggressive marketing programme and setting up a regulatory and promotional authority. The strategy focused on ensuring a good and reliable telecom infrastructure, low taxation, concessions for establishing the company in Antigua and allowing the import of duty free equipment. Though these companies are virtual and do not have large establishments, the Antiguan economy has benefited from the infusion of capital, employment, licence and tax revenues as well as in the area of local real estate. This systematic approach continues to be pursued as the potential of this market continues to grow since presently 95% of the on-line gaming companies are focused only on 35% of the market. It is estimated that this 'digital commerce' on-line gaming industry is likely to grow to a \$10 billion industry by 2003.

Several other CARICOM locations are also trying to promote this business opportunity (for example Belize and St. Kitts). Its not by chance that these countries have had success in this area. Firstly, there is the locational advantage of being near the US and the fact that such enterprises are not allowed in North America by law. Secondly there is an obvious advantage of locating where no or low taxation off-shore trust funds are also available. And thirdly, this industry has developed its own payment mechanism and the companies offering such services are usually themselves registered as off-shore companies in the Caribbean itself.

**Member State: Barbados*****The Info-structure***

Barbados too faces the situation of a Cable & Wireless monopoly until 2011. A Survey done in 2000 showed Barbados to have one of the highest

international telecom rates in the Caribbean. Negotiations with government were expected to be completed by 2000 but the MOU is still under finalisation. It is expected to have a phased liberalisation schedule that will open up the domestic and cellular market by December 2001 and international by April 2002. Presently the 5 other ISPs operate via the Cable & Wireless gateway for upstream with permission for V-Sat for downstream. Internet and leased circuit prices have decreased recently but businesses still feel cost is an issue and for real e-Business and e-Commerce they should be so competitive as to not be an issue. Stability and speed of connection remain an issue probably due to the quality of the phone connection. Cable & Wireless claim that only 45% of their Bandwidth is presently being used.

Caribsurf has 11,600 Internet subscribers, Sunbeach 11,000 and others some 5000, totalling to around 27,600. This would add up to over 10% of the population, up from just 4% reported in an e-Commerce study last year<sup>54</sup>.

The legal framework already stands established with the passing of the Electronics Transaction Act 2001, which is based on the UNCITRAL Model Law for E-Commerce. It covers certification authority for digital signatures, data protection etc. Its actual usage however is still limited and probably awaits the financial framework coming in place.

On the IT education front there is presently a shortage which will be addressed by the EduTech project. This programme reflects the far-sightedness needed for the knowledge economy. Presently the one community college just cannot cater to the demand for computer education (it produces some 200 with an associate degree with also the option of taking a Carnegie Mellon University, USA modular programme in certified software development). Network and hardware trained technologists (some 40 annually) come out of the Polytechnic. Both institutes ensure basic computer literacy for their entire body of students. The University of West Indies Cave Hill campus here, produces some 150 or so computer graduates. Very interestingly, the University has also just established a Centre for International Services. This seeks to promote trade in services, including IT services. It proposes to organise workshops, seminars etc. and train businesses in this area.

### ***Policy Framework***

Several speeches and government documents highlight IT and e-Commerce but conversion of intention into a detailed strategy and implementation phase are still issues. Lack of an e-Commerce policy though has not prevented the government encouraging the IT sector through several measures such as duty and VAT-free import of equipment, helping negotiate bulk rates for call centres, promoting tourism, investment and trade etc. This accounts for the fairly developed IT sector in Barbados. A specific e-Commerce strategy (such as that for the education sector) would help encourage real Internet based transactional commerce.

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<sup>54</sup> Chaitoo, R., Oct 2000, Electronic Commerce and CARICOM Economies: Strategic Considerations for Governments, Caribbean Regional Negotiating Machinery, Barbados.

At the international policy level, Barbados (thru Senator Dale Marshall) chaired the FTAA Joint Govt.-Private Sector Committee of Experts on E-Commerce which was responsible for some excellent studies and recommendations for the sector. (These have been consulted for this study).

### ***E-Business***

As per a recent survey, total IT companies in 1999, were 47, employing 2970 (apx.) persons<sup>55</sup>.

Of these some 20 are foreign-owned IT enterprises carrying out a whole range of IT services from data entry to software development.

E-Business at the level of existing businesses is very limited though many now have websites and use the Internet. There is quite a bit of movement in the consumer related e-Commerce within the country though<sup>56</sup>. Non availability of financial transactions through the existing banking system is an issue to be addressed as is the high cost of connections and bandwidth. (The Mutual Bank along with CaribCard are now offering online payment services, and also merchant accounts but they are very expensive to set up require some B\$50,000 as deposit.) E-Banking has not yet started and the Central Bank is of the opinion that levels of Internet penetration do not presently justify it.

BIDC (the Barbados Industrial Development Corporation) which is also the local TPO (trade promotion organisation) has just initiated a new website and e-Commerce business on the net called 'shopatbarbados.com'. This presently offers some 108 products (mostly food and crafts) of 11 local SMEs that can be ordered on the Internet. In order to do this, they have had to set up a warehouse and fulfilment centre at Boston from where the goods would be supplied and payments received. (Only time will tell whether this is a justified investment, as presently the site has not received any orders having just recently started).

### ***Case Study 2: Planning for the Human Resource: EduTech 2000, Barbados***

Barbados is implementing what is probably the most comprehensive of educational reform in the region through an ambitious project entitled 'EduTech 2000'. This seven year programme seeks to transform the whole education network, not just by upgrading of facilities but by changing the curricula and methods of teaching to prepare students for the knowledge economy. It involves civil works, teacher training, Institutional strengthening and IT hardware and software in all schools. The rationale for the programme were specific manpower surveys to assess future workforce requirements and research findings on the use of technology in teaching. Child centred learning to produce creativity and harmonious development is the aim. IT and the Internet will be the key.

Government in Barbados has recognised that the challenging international environment now requires competitiveness and 'critico-creative' thinkers that

<sup>55</sup> EduTech 2000 document of the Govt. of Barbados.

<sup>56</sup> There are several services such as flowers, bakeries, food and supermarkets now on-line.

would match the shift in the economy from agriculture and industry to more service oriented and knowledge-based industries.
This forward-reaching initiative is an attempt to make the educational system more responsive to the needs of the community and provide for the knowledge workers of tomorrow. By providing all students with IT skills the plan is to create adequate skills to match the requirements of future e-Business demands on the community. Interestingly the programme itself offers opportunity to IT/software providers to use the network as a test-bed site for experimenting with their packages and thus help meet the costs on the project.

## **Member State: BELIZE**

### ***The Info-structure***

From an earlier joint-sector to a private monopoly, the Belizian telecom story is much like the rest of the Caribbean. The telecom infrastructure is good but expensive because of the monopoly environment. This monopoly ends 31<sup>st</sup> Dec 2002 and the public is anxiously awaiting plans for effective competition in the sector to ensure affordability of access.

There is no legal or financial framework existent at the moment for e-Commerce on-line transactions. The telecom company, BTL, is however working on a credit card verification programme.

Recently an Associate degree and a Bachelors degree programme for IT have been introduced by the University but the number of students is very small (15-20 per year). Availability of e-professionals is therefore going to emerge as a serious problem.

### ***Policy Framework***

There is no formal IT or e-Commerce policy or strategy in place at the moment. However, almost by default, the Budget wing of the Ministry of Finance is leading whatever national level initiatives there are and exercising control over the IT initiatives of all other departments as all proposals need to come to them for approval!

Some departments such as Social Security for example, have elaborate plans for computerisation and setting up of an Intranet with their field offices. Such initiatives need to be linked up to a common government WAN (wide area network).

### ***E-Business***

As in the rest of the CARICOM region, business sees the telecom monopoly and prohibitive costs of lease line access as the single most important stumbling block to the development of e-Business. (Interestingly some companies are resorting to acquiring direct wireless link to US ISPs at Miami



by installing their own dish [without licence]. This gives them a good steady Internet connection at around \$200 per month, against the \$2000 that a leased link from BTL would cost!).

Since the export economy is mostly agricultural and traditionally has worked in a preferential treatment regime it has neither planned nor is very conducive to becoming IT or e-enabled. The tourism sector has though embraced the Internet though mostly for catalogue type websites.

Interestingly a private sector IT park or Free Trade Zone has come up in Belize basically catering to Internet Gaming companies for whom the required licensing and regulatory environment has been especially established. Out of the 17 companies presently established here, 9 are gaming oriented. This Belize park is trying to out-do Antigua and Costa Rica for this business by offering a totally tax or licence charge free environment; with high-speed fully redundant lease lines from 64K to T-1; complete power and water back-up making it hurricane resistant in order to guarantee zero down-time connectivity – a prerequisite for the Internet gaming industry.

## **Member State: DOMINICA**

### ***The Info-structure***

Dominica presently has two ISPs providing Internet access. Such competition has actually existed since 1996 when Marpin (the local Cable TV provider) became a reseller of Cable & Wireless services. Soon however a dispute arose between them about Marpin's satellite gateway and the extension of the contract, which resulted in the case being taken to court by Marpin on constitutional grounds of the fundamental right of choice of communication being obstructed. Victory for Marpin paved the way for the OECS states renegotiating the Cable & Wireless telecom monopoly (through their Telecom Reforms initiative) which has today resulted in the phased liberalisation of the telecom sector.

For consumers, Internet access has fallen dramatically from EC\$120 for 20 hours by Cable & Wireless just a year ago to today when it is available at EC\$ 50 unlimited by Marpin (with call charges separate) and at EC\$69 plus session charge by C&W. Though these prices are lower than other places in the Caribbean, cost continues to be an issue as the average wage is estimated at around EC\$ 2000 per month. The estimated number of Internet users is around 3500. For businesses the lease line costs are still very expensive. (A leading IT services company reported a cost of US\$ 10,000 for the year for high-speed wide-band access.). Limited ADSL is being provided by Cable & Wireless at EC\$460 per month for 256/128K.

The legal and financial framework for e-Commerce transactions on the Internet is also not yet in place and the availability of e-professionals a serious issue.

The Dominica Department of Education carried out a survey to assess the use of IT in the entire education sector and came to some very interesting conclusions that could possibly apply to the whole government sector. (Extracts below quoted)

1. *Of prime importance is the question of awareness. A large percentage of respondents were still grappling with an understanding of the capabilities and possibilities that ICT presents, and feel inadequate to the task of leading in that direction.*
2. *'Computers' and 'Information Technology' are in all cases treated as a separate entity from other curricula and technologies, and as such, are not integrated into the everyday life of the institutions.*
3. *One third of central office staff admit to no form of computer literacy, and just as many have computer literacy to basic level. 27% are computer literate to intermediate level, while only 7% of respondents have advanced level computer skills.*

The report concludes with an important recommendation that is relevant to the region as a whole –

“The inclusion of ICT in our education process is becoming more and more of an imperative, if we are to adequately prepare our students for the challenges ahead. It must be borne in mind, however, that this must complement, and not replace, other available technologies, like electronic media and basic developmental technologies that address equally relevant aspects of our development as a nation. We must also be cautious not to allow this technological culture to dehumanize the administrative or teaching/learning process.”

Today just a very few schools offer IT training and even the one college for 6<sup>th</sup> Form has a serious lack of computer hardware to effectively offer IT education. 3 private companies have begun to offer IT training but at a very basic level.

### ***Policy Framework***

At both the political and administrative level, there is much talk of the promotion of information technology but as yet there is no E-Commerce or IT policy or any national strategy chalked out. There is also no clear decision nominating any one agency to lead the initiative. The Ministry of Communications is attempting to co-ordinate the efforts and an Inter-Ministerial Committee has been set up. However for both national strategy as well as initiatives towards IT in government and e-Government plans, there appears to be a need for participation by various stakeholders, integration of views and plans and clear direction at a national level.

### ***E-Business***

Due to a lack of IT professionals, the IT industry is very small with a very few number of enterprises using IT services. A limited number of financial companies using Internet for their own networks, a few Internet gaming

companies and just a couple of enterprises actually doing web-based services (one of them Carib Data Services, very successfully).

Traditional enterprises and exporters have set up a few websites but not for actual transactions and generally the move towards IT usage in business appears to be slow and yet to take root.

The Banking industry is not very supportive of either venture capital or giving out of merchant accounts for allowing credit card on-line transactions. The fear is the 'charge-back'<sup>57</sup>, issue for credit cards and the lack of a legal framework.

### **Member State: Grenada**

#### ***The Info-structure***

With the Cable & Wireless monopoly still in place (as no other players have yet been approved) bandwidth continues to be a serious problem. Cable & Wireless have plans however to double their capacity soon. Internet connections at some 3% of the population are very low compared to even some of the other Island states. High-speed lease lines are just too prohibitive and are stifling growth of E-Business.

The private university (St. George's) would offer IT and on-line IT education but for the bandwidth and high cost of access. The Community college is just not equipped to offer much IT training and the school system also has very few doing computer science. About 3 or 4 private IT training establishments have been set up but mostly in the area of basic computer skills and networking.

#### ***Policy Framework***

Grenada is ahead of the other OECS states in that they have already more or less finalised their e-Commerce policy that is expected to be announced soon. IT and MIS in a government WAN is in implementation stage and an agency for implementing e- Government and the IT policy expected to be established.

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<sup>57</sup> 'Charge-back' is when someone first buys something over the Internet using his Credit Card and then later refuses to settle his bill with the Credit Card issuing bank on the grounds of not having done the transaction. Since there is no proof of the transaction, the bank has to take on the liability for the payment.

***E-Business***

Internet usage by the Hotel industry is quite high and a few websites offering goods for online purchase (*De Le Grenada* for food stuff and *Arawak* for cosmetics) have also come up. Some 50 or so companies are doing some form of e-Business (including 6 Internet gaming) but most of them are concerned with the cost of access. IT in existing business is also quite high though not many as yet have transactional websites.

Non-availability of venture capital is a constraint. Capital itself is very scarce with high leverage already in the economy and low surpluses.

**Member State: GUYANA*****The Info-structure***

Guyana has fairly good communication services and a growing computer usage but it has to deal with a telecom monopoly that is keeping access costs high and beyond the reach of the average citizen and business. (Internet costs on an average Guyana\$6000 per month when the average salary level would be roughly G\$40000. A leased line for business is prohibitive at over US\$2000 per month). There are today some 5 ISPs but all are dependant on the monopoly GT&T telecom company for access and phone lines, which are in short supply. The estimated number of Internet users is between 2-3000. Reliability of the power supply is also an issue for sensitive IT equipment.

An IDB Reform Project for Telecom is however being put in place. The aim is to liberalise the sector by December 2002. Negotiations with GT&T are however still to start. The key to this process would be to negotiate for partial liberalization especially so far as the Internet services are concerned so as to allow for the growth of e-Business. IDB is also separately considering an ICT project for education and health sectors.

The legal and financial infrastructure for e-Commerce is not yet in place and therefore Internet websites of local businesses mostly only offer information and contact details. The University of Guyana does produce IT engineers but lack of local opportunity uses sends them overseas. Computer literacy is high in offices and this work-force could be easily trained for e-Commerce or e-Government once such initiatives and opportunities grow.

***Policy Framework***

Though the Government desires to promote the IT sector as well as investments, there is no IT or e-Commerce policy or strategy in place and no one agency responsible for the sector. (The Institute of Applied Science and technology is however working on setting up a database for key information.) E-Government type initiatives are therefore still to start and even the existing

trade infrastructure is not digitized. Customs had implemented the UNCTAD sponsored ASACUDA system, but mainly for data generation.

Guyana exports mainly primary products (sugar, rice, bauxite). None of these presently lend themselves to on-line trading. There is an urgent need to diversify into manufacturing and other areas such as tourism and ICTs. The government is working on a new export strategy and possibly this would include E-Business.

### ***E-Business***

This is the country famous for the Amerindian weavers' hammocks on the net –a story that hit virtually every major newspaper a couple of years ago. A local NGO and the telecom company provided the link that enabled this dying craft to suddenly find eager buyers in the developed world. Unfortunately the story does not find replication in other sectors and businesses. Guyana carried out a survey last year that revealed that most firms were using their computers for word processing and not for the Internet. This in many ways sums up the prevalent situation regarding e-Business in Guyana. Existing and traditional businesses have not yet begun to realise the potential of e-Business. There are some websites set up (mainly tourism related) but hardly any direct transactions. The lack of credit card culture has however led to companies allowing the use of their US credit card, at a commission, to consumers desirous of buying on the Net.

A few IT companies have been established, as there is no dearth (presently) of IT professionals, but they find their business constrained by several factors, amongst them, the telecom infrastructure and high cost of access; non-availability of venture capital; lack of awareness in local business for IT solutions; lack of a government initiative.

### ***Case Study 3: Communicating in a restricted environment -iNet Communications Guyana***

Noel Holder and Raymond had a vision of setting up a nation-wide Internet back-bone and being not just the ISP but the ASP (applications service provider) offering a wide range of e-business services in Guyana. There problem was a private telecom monopoly operating in the country that would seek to prevent this. All existing ISPs were dependant on this telecom company for both Internet access/gateway as well as the phone lines. In an interesting strategic move iNet obtained a licence from the government run National Frequency Management Unit, set up their own satellite link and got an injunction from the Court (on the grounds that the operations of the telecom monopoly was against the civil liberties law) before they began offering their services!

The phone company has refused to even give them phone lines but their business is flourishing. They essentially target business and institutions where they set up a radio link to their system giving high-speed and very stable

Internet access. Amongst their customers today they count the CARICOM secretariat and the US Embassy.

## **Member State: JAMAICA**

### ***The Info-structure***

Jamaica has a world-class 100% digital network that is being further up-graded. There is fibre optic links both internal and external as well as satellite connectivity. As per the country's commitment under the WTO's Basic Telecommunication Services Agreement, Internet access (and other telecom) services are being opened up through a negotiated agreement with the monopoly provider Cable and Wireless. This three-year plan (from 1998) will ensure complete liberalisation by 2003 against the existing agreement until 2013. These moves are resulting in a fall in telecom and Internet prices<sup>58</sup>.

Looking ahead, Jamaica had two years ago set up a Free Trade Zone at Montego Bay, which besides incubator facilities, also was a way to have direct satellite connectivity in a monopoly telecom environment. Most of the information processing companies are located here.

On the legal side the framework may take long to be established for even though the IT committee some months ago recommended the establishing of an e-Commerce law based on the UNCITRAL model law, the legislative process has not yet started and would in normal course take considerable time.

On the IT education front, Jamaica today is in a fairly advantageous position. Several institutes, public and private are providing IT training across a wide spectrum<sup>59</sup>. This includes the recently established University of Technology (UTECH) that offers computer studies at diploma, certificate and associate degree level. The result is an under-utilisation of the available talent as not enough IT enterprises have developed and the SMEs cannot really afford IT professional services. Government appears to be concentrating on setting up call-centres – for their high employment potential.

A programme called EduNet to connect up 1000 schools across the country was started in 1997. The progress unfortunately has been somewhat tardy but is now being re-initiated. Internet access for the public through all public libraries and post offices is planned.

### ***Policy Framework***

Interestingly, in Jamaica the departments of Industry, Commerce and Technology (including Telecommunications) are under one ministry. This takes away the possible confusion (and turf battle) about who would be

<sup>58</sup> Recently Cable & Wireless reduced their Internet access prices by 30%

<sup>59</sup> Government's own initiative in the training area through the agency HEART has been very successful in this regard.

responsible for leading the initiative for IT/e-Commerce/e-Business. Moreover a multi-stakeholder Information Technology Advisory Council ensures that common issues get sorted out.

A fairly extensive IT strategy and draft e-Commerce policy has been prepared. This needs early approval of Cabinet so that the other pieces for E-Business development begin to fall in place. For implementation of the strategy, especially the e-Government initiatives utilising the Fiscal Services Agency is under consideration, mainly because it has the most experience in implementing IT in its own department. Separately though a Central Information Technology Office has been set up as an interim measure to eventually become the Information Technology Authority.

JAMPRO also runs the Trade Point service as offers trade promotion and data via its website. Actual digitization of the whole trade network is however still to be realised.

### ***E-Business***

Business as a whole in Jamaica has gone through a very rough phase in the past few years. The entire financial sector and many small businesses with it were badly effected. Recovery is now on but availability of human capital is an issue on account of the large scale migration of talent to the West.

Traditional business including the banks, continue to be very conservative about e-Business and therefore the sector has not realised its potential at all, despite the fact that there are several IT/data processing enterprises that have come up. Some of the IT-enabled services include data warehousing, insurance claims processing, remote customer support, reservation services etc. There is however a lack of electronic transactions in the area of existing trade and business. Even the existing ISPs are not providing services for such e-Business on grounds of the lack of legal and policy framework.

## **Member State: MONTSERRAT**

Montserrat is a unique case for this CARICOM study. Firstly it is a British territory. Secondly, it had a devastating volcanic eruption in 1995 that not only lay waste vast habitation but also virtually destroyed the economy. The result therefore is a country that today has only half its original population and an economy that is today dependant on external support for survival.

### ***The Info-structure***

Being a non-independent member of the region, Montserrat did not join the OECS initiative on telecom reform. The volcanic eruption also destroyed the undersea cable landing link and therefore the island functions through a microwave link with Antigua. Email addresses even are through Cable & Wireless Antigua, i.e. @candw.ag. (The top level domain name for Montserrat

on the Internet – .ms – is run through a private company in the UK.). Though Internet usage is increasing, not a single company can afford lease line access.

IT education is presently very limited due to the local problems. Though general literacy level is close to 100%, general e-Literacy is still a long ways off. The legal framework for e-Commerce is also presently neither available nor under consideration.

### ***Policy Framework***

The government would like to treat e-Business as a national priority as after the volcanic crisis, there is little else resource available and therefore knowledge based industry is a major hope. The country is looking for a niche where it could succeed. An e-Commerce policy does not exist for the present but medium term initiatives are planned.

### ***E-Business***

The general legal and regulatory framework for business and investment is quite updated and favourable. Unfortunately due to the present economic condition, e-Commerce is virtually non-existent, except for just a few tourist related business beginning to use the Internet. The local traders appear to be wary of buying off the net and prefer to physically go on annual (or more) shopping trips to the US where not only do they choose the goods physically but can consolidate them into one container.

### ***Case Study 4 :Innovative E-Business: Entrepreneurship in adversity – GET, Montserrat***

Joseph Cassell is a true entrepreneur. Besides managing a full time job, he also runs several business initiatives that seek to provide seamless services to the business traveller and to local companies. His enterprise(s), interestingly called Grant Enterprises & Trading (GET), provide, *GET Services*, *GET Quality*, *GET Cars*, *CompuGET* etc. He offers both computer usage and Internet access to the local public and enterprises for whom he also offers several IT services. If you do not wish to invest in your own computer and Internet, just use it on a monthly basis at GET! He offers IT training to both individuals and corporates. He already has a toll-free number (1-800-CallGET) and offers web contact ([casselj@candw.ag](mailto:casselj@candw.ag)) for anything from booking a hotel room, to pick-up upon arrival, to car-hire, to Internet access and several business services.

His business plan is based on the fact that in a small place like Montserrat, just one business service may not be profitable therefore a series of services is the answer. For a country with such limited resources – both physical and human – such entrepreneurship is what will produce the e-enterprise!

**Member State: ST. KITTS and NEVIS**



### ***The Info-structure***

Between Cable & Wireless and The CABLE (a Cable TV company now transformed into a telecom provider) the infrastructure is of high quality and very competitive in St. Kitts. This results in low prices in Nevis also, where too the TV cable company is planning to enter into the ISP arena. Competition which started just from April this year has already resulted in Internet prices for dial-up falling from EC\$120 for 50 hours to unlimited access at EC\$75. With PC penetration estimated at 35% e-literacy and use of the Internet by the public could rise dramatically.

On the IT education front, there is a severe shortage of teachers though plans to expand the availability of IT in the whole system are afoot. IT professionals trained abroad are presently available as level of e-Business still not very high.

The legal framework for Internet gaming was established fairly quickly but on the e-Commerce front the view seems to be to wait for OECS telecom reform initiative to move ahead on e-Commerce too.

### ***Policy Framework***

Though there is no policy or strategy in the area of IT or e-Commerce yet in place, E-Business is an area of priority and an IT Incentive Proposals legislation is under consideration.

Since government owns 69% of The CABLE, an ISP that has excellent fibre-optic cable and links across the island of St. Kitts, an obvious initiative could be to use this network for establishing a government WAN on which to offer e-Government services to the public.

### ***E-Business***

There is a strong PC penetration in business – estimated at 90% and of these, as much as 30% plus are implementing further IT integration into their systems. Internet and websites are common but there is still hesitation to do business on-line or use B2B e-market places. There are already over 10 Internet gaming companies that operate out of St. Kitts and several off-shore financial companies that use IT services.

It is probably the tourism sector that will be the first to start in the on-line payment arena, as they were the first to embrace the Internet. Almost 70% of all the hotels, including the small family-run properties, have websites and email booking arrangements today - and have all seen a rise in business on account of it.

#### ***Case Study 5: TV to Telecom – The CABLE, St. Kitts***

W. R. Ewing started with a cable TV company called simply, The Cable, in 1983 at St. Kitts. Interestingly the Government holds 69% equity in the enterprise but has given a full hand to Mr. Ewing in running the affairs of the company. The result has been that this company today has laid out fibre-optics cables covering virtually the whole island and offering 54 TV channels to a viewer base estimated at 97% of St. Kitts. (Since the telecom company Cable

and Wireless also has a fibre ring around the Island, this makes for St. Kitts being one of the most fibre rich places in the world!).

As the telecom sector in the Eastern Caribbean is passing through reform, liberalising and ending the monopoly of Cable & Wireless, the predominant telecom provider of the region, this company (The CABLE) has seized the opportunity and from 1<sup>st</sup> April 2001 (the date when Internet ISPs were allowed in) offering high-speed Internet access to their subscriber base via their cable TV connection. The result was a bonanza for the 'netizens' of St. Kitts for whom the Internet prices dropped almost by half and today they have two ISPs offering unlimited Internet access at EC\$75 per month. The important difference with The CABLE however is that it is neither dependant on nor linked with the phone connection and therefore there is no dial-up and no phone charge. There is of course an initial investment for a cable modem, soon to be available at EC\$400.

The CABLE uses a C-Band satellite link for the Internet and is now negotiating with Worldcom of USA for an undersea broad-band fibre link. They will soon be offering an entire range of TV, Radio, Internet, Video on demand and Voice-over-IP (as soon the phased liberalisation allows that by next April). No more do they refer to themselves as a 'Cable-TV' company but rather as an ICT or integrated telecommunication enterprise.

## **Member State: St. LUCIA**

### ***The Info-structure***

The telecom network of Cable & Wireless here too is similar to most of the other Eastern Caribbean states. It has fibre linkages but there are still some issues of capacity. The telecom reform process of the OECS has begun here too but the government is still to make functional its telecom regulatory commission. Issues of its funding and manning are still to be addressed. In the absence of this issue, of new licensees will have to wait. Today some 4500 have Internet connections and 40 companies have leased access.

Today there does not appear to be a shortage of e-professionals. But then the IT industry is still at its infancy. The educational system is very limited in its production of computer science students, though a fair amount of computer literacy is occurring due to the school computerisation programme. Demand for IT education cannot be accommodated in the community college and there is a flourishing private IT teaching network developing. (A leading Indian IT training company (APTECH) has also set up shop here).

### ***Policy Framework***

There is realisation and a desire to go forward in the area of IT and e-Commerce but lack of direction on it. A committee has been set up to work on a draft policy but in fact there appears to be confusion regarding which agency should lead the effort. The Science and Technology Council under the

Ministry of Planning has a sub-committee on IT; the Ministry of Commerce is working on a policy and the NDC has some time ago presented its recommended policy.

The government has already established a Wide Area Network (WAN) for itself but it appears to be rather under-utilised except for some accounting functions. No MIS or e-Government function is presently running.

Customs department has been running ASACUDA and have now established on-line links for duty collection with duty-free shops in the city. EDI for the trade network is not however available.

### ***E-Business***

Presently there is hardly any e-Business or e-Commerce on the Internet taking place<sup>60</sup>. There is the usual ordering of consumer goods on the net due to which the post-office is seeing a spurt of small package imports. and the tourism related non-transactional websites, as in most other places. A private sector incubating facility for e-Business is being planned.

Cable & Wireless are now planning (along with Barclays Bank) to offer a payment gateway arrangement for exporters desiring to sell via the web. This service will be presently offered through Bermuda.

## **Member State: St. Vincent and the Grenadines**

### ***The Info-structure***

The usual Cable & Wireless network exists and implementation of reform process has not yet begun. PC and Internet penetration is low and rates for access similar to other OECS states. High speed data connectivity (eg.T-1) is just exorbitant (US\$ 14,000 monthly). Both reliability of access and bandwidth remain issues. There are also concerns about promoting e-Commerce for small exporters as the existing Postal service does not even have an express delivery and therefore timely export would be an issue.

There is no legal or financial framework available for e-Commerce.

The number of available IT professionals could literally be counted on one's fingers! (Estimated to be between 6-10). It's a serious problem and to implement IT strategy, professionals are required to be brought in from abroad. The IT education or training is very limited due to a shortage of teachers. Even the Community college only offers some basic computer training at just 'A' level.

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<sup>60</sup> One of IT consultants revealed that their company had advertised in the local Yellow Pages for IT consultancy services for the past ten years and got just one enquiry!

There is talk though of setting up a National Institute of Technology such as that in Jamaica.

### ***Policy Framework***

There is a new government in place and they are still to announce their policies. Though there are several pronouncements, there is as yet no policy for e-Commerce or an IT strategy. There are plans to bring in call centres for which personnel will be trained in advance. DEVCO (Development Corporation) the promotional agency is presuming to take on the mantle of promoting IT investment but does not have the existing capacity for the task. The usual IT project in Treasury and Inland Revenue is on but no e-Government initiative is presently being planned.

### ***E-Business***

There is hardly any IT business except for a couple of back-office facilities (Net Data being one) registered as off-shore companies. Another enterprise 'gigli.com' that sells crafts on the net does it through a web server and account in the US. Neither is there much of IT in business in general. Computer and Internet usage though is growing. Besides cost of lease lines, labour productivity for IT services, and availability of hardware were mentioned as issues.

The local Chamber of Commerce is doing its bit in promoting investment by serving as a on-stop shop to handle all the registration and office set-up issues for new companies. They do have a website where they offer both information and services.

### ***Case Study No. 6: Traditional Business more comfortable with traditional ways despite competition***

One of the largest commodity enterprises, ECGC (Eastern Caribbean Group of Companies) is located here. They have a large international supply and purchase network. They have implemented IT in their companies and use the Internet for information but are not on-line for any of the transactions. Officials complained of severe competition due to globalisation but have not yet even attempted to explore the possibility of doing any business through commodity portals on the Internet. They feel they already have established agents and partners and see no need of trying new ways of business.

In a sense this attitude is representative of much of local business, which is largely trading.

### **Member State: SURINAME**

Suriname is a unique country in the CARICOM. Not only is it a recent member but coming from a Dutch colonial background makes it very different from the rest of the West Indies. In the area of e-Commerce and e-

Business this can be a great advantage. Being bi-lingual (Dutch and English) opportunities from both can be reaped. Especially with the Dutch connection the country is sitting on a gold-mine so far as their potential to offer IT-enabled services at a very competitive cost to the market in Netherlands and from there to Europe. It's a wonder that not much is presently being made of this opportunity.

### ***The Info-structure***

Suriname has a public utility company (Telesur) that ran a telecom monopoly till a few years ago (1997) when a second company (ICMS) was also given permission to offer telecom services. This second company though is only basically offering Cable TV and Cellular services and selling/leasing out its rights to other ISPs who use their licence to offer wireless connectivity and Internet. The Government is planning to liberalise the telecom sector but there are no set dates or plans.

Meanwhile the position is that though dial-up Internet access is fairly cheap, leased line connectivity, the bread and butter to e-Commerce, is just not stable enough and high-speed access (ADSL and T-1) not available. (Internet access is through satellite and not undersea cable.) This issue of sufficient band-width and competition in the sector is the single most important that needs to be tackled - and quickly. The cost of power is also very high for IT companies (over 7% of input cost) and also unstable.

There is also neither the legal or financial framework to handle e-Commerce transactions and neither is it in the planning. The country expects assistance from CARICOM in the legal area. On the financial side the country is still to have much of a credit card culture and no on-line transactions are possible.

In the absence of the School and University system offering much computer training or IT as a degree, several private IT teaching shops have come up offering IT training of different sorts at very high US Dollar fees.

### ***Policy Framework***

So far as the telecom sector is concerned the department believes in the 'universal service obligation' concept and therefore since it desires to extend these services to not so profitable areas in the country it is keeping the monopoly going. It is however proposing partial liberalisation of the sector in due course. (Such 'consideration' however has apparently been going on for the last 4 years).

So far as e-Commerce or e-Business is concerned, there is no policy yet and some confusion as to which department would handle it. This issue needs to be addressed quickly and the responsibility given to that agency that has the capacity and authority to push it.

There are a few government websites and some computerisation but no WAN or e-Government service presently available.

***E-Business***

Very little IT business presently exists and they are of the opinion that the problems of telecommunications and the general business environment are preventing the potential being realised. Many Surinamese companies are using IT but most of it is stand-alone and not integrated or linked. E-Business is therefore virtually non-existent.

There is no venture capital even availability of capital through regular channels is very scarce and at a very high cost (interest rates with bank charges could add up to 32% or so). The financial sector in Suriname is in crisis<sup>61</sup>. It needs serious reform as do so many of the other administrative and infrastructure sectors.

There are on-going initiatives to bring about reform in many areas as well as outline and codify several policies such as that for investment. There is strong opinion amongst many stakeholders, especially private sector, that CARICOM can play a very important role in helping with the various reform and legislative requirements for creating a conducive e-Business environment. Of course implementation will continue to be an issue, for example Suriname despite being a member of CARICOM has not yet aligned its tariffs with the common external tariff.

**Member State: TRINIDAD & TOBAGO*****The Info-structure***

Technically the telecom monopoly of Telecommunications Service of Trinidad and Tobago (TSTT), a company owned 51% by government and 49% by Cable & Wireless, still is in operation. The telecom bill, liberalising and opening up the sector has been passed in both houses of Parliament but awaits Presidential assent and promulgation. In reality however, other ISPs have already started offering services by connecting directly with their own satellite links rather than using the Cable & Wireless backbone/gateway that is legally still the requirement. Some 6 ISPs<sup>62</sup> are operational in the country now offering a host of alternatives. The result is that good communication links especially for Internet and data services is already available and prices are reducing, especially for satellite links. TSTT prices for high-speed T-1 however continues to be a very prohibitive US\$35,000 per month. Band-width is presently not a problem as both TSTT and the other service providers have sufficient capacity and satellite alternatives.

Despite a liberal regime for imports of computers PC penetration continues to be quite low by North American standards. E-literacy is however increasing and some 60,000 people now have access to the Internet. Various types of IT

<sup>61</sup> Diagnos, 2001, *Report on Suriname: Business Forum Private Sector Development Strategy*, for EU-ACP, Bruxelles

<sup>62</sup> These are: wow.net; rave; opus; trinidad.net; carib-link, tstt.net

training courses are provided by the private sector through commercial institutes and IT education in schools and the University is getting very popular. On the legal framework side also, Trinidad and Tobago already has the Computer Misuse Act, 2000 and the Electronics Transactions Bill under preparation. On the question of the certification authority, they are interestingly considering voluntary rather than mandatory registration with government for private organizations offering such services.

### ***Policy Framework***

On the policy side Trinidad & Tobago has probably the most detailed and comprehensive IT/e-Commerce policy as well as strategy. Separate directorates for e-Commerce and for e-Government have been set up. The former under the Ministry of Industries and Commerce and the latter under Ministry of Communications and IT. The policy is being co-ordinated from the Prime Minister's Office and there is a Cabinet Steering Committee as well as executive level committees for E-Government and e-Commerce. IT in government is being implemented by the National Information Systems Centre, a body under the Ministry of Communications and IT. The only concern here is the fact of these two initiatives of e-Commerce being seen as different and therefore under separate ministries, but the process of co-ordination should probably iron out any confusion in the implementation process.

According to the e-Government directorate, the initiative plans to first set up a Backbone and WAN for government (and the country), then develop e-Government applications and finally go in for the re-engineering of departments and processes and begin offering e-Government services. The ultimate aim is to have a single portal for Trinidad and Tobago government with links for other information and services including Industry, tourism etc. Perhaps, some of these stages, especially the re-engineering of departments and procedures, should be started alongside the network creation. There is also the expressed problem of different departments starting their own initiatives and therefore there may be the future problem of incompatibility between the different systems.

These initiatives are the result of a June 2000 National Electronic Commerce Policy report submitted to Cabinet. Some of the recommendations are now being converted to e-Commerce and e-Government plans that are being implemented to address the inadequate telecom infrastructure through increased competition<sup>63</sup> (the Telecom Bill); introduce further legislation to deal with electronic transactions, and online security; provide training to build up computer and IT skills in the country and create a portal to provide services to micro and small and medium enterprises.

### ***E-Business***

IT in Trinidad & Tobago is already quite strong and growing. Several e-Commerce services are already in operation but actual transactions on the net

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<sup>63</sup> The report pointed out that there is a total of only 8 E-1 (16mgbs) lines in TSTT's network while a small firm in Miami can have as much as 41 mgbs.

presently limited. Data from the Chamber of Commerce however indicates that more than 70 percent of their 700 members have some type of Internet access, ranging from simple email to Web sites with the company's own domain name<sup>64</sup>. With the opening up of the telecom sector speedy progress is expected in the area of e-Commerce.

As in Jamaica and Barbados, some carnival bands (and music groups) offer web-based services (mostly downloadable music) that are hosted in the US and rely on US ASPs for credit processing and authentication services. Nova Scotia Bank already offers a payment gateway for on-line transactions and some of the local banks are investing in software systems to enable e-Banking and on-line financial transactions. In the area of IT/web-based services 4 call centres are already operational (providing employment to some 3000 persons) and more expected to be set up.

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<sup>64</sup> Chaitto, R., Oct. 2000, RNM



### 2.3 Status of e-Readiness in the CARICOM

The above country level research leads into a regional picture. The next section is devoted to an examination of the issues based on which this study makes certain recommendations at the regional level. However, in order to have a snap-shot view of the field level status in the CARICOM area, the following matrix is a brief encapsulation of the prevailing position:

<b>Analytical Framework Issue</b>	<b>Status in the CARICOM Region</b>
<b>1. 1. Infrastructure</b>	Despite moves in most member states towards opening up the sector, telecom continues to be a major issue and seen as a constraint to the development of e-Business.
<b>2. Policy Framework</b>	Unfortunately in most of the region, there is no clear policy or plan in the area of IT or e-Commerce/e-Business.
<b>3. Legal Framework</b>	Practically does not exist. Neither in law nor in services offering security of transactions on the net.
<b>4. Human Resource Framework</b>	Across the region, the number of IT professionals being produced is very small and therefore there is already shortage or will be if e-Business develops.
<b>5. E-Business Environment</b>	As in many parts of the developing world it is still only email and websites that continue to be the 'killer apps' (main applications) driving the Internet. Unfortunately these do not necessarily transform into e-Business, of which there is a severe lack in the CARICOM region.
<b>6. International Issues</b>	Most policy makers in member states are not even aware of the global issues of e-Commerce or the implications of the on-going discussions at WTO and FTAA.

## Best Practise

The CARICOM Secretariat suggested that this study should also include a reference to best practise as found in the region, in each of the framework issues. Conceptually, best practice is a static concept and in a fast emerging area such as e-Business it would be presumptuous to think that strategy and practices in one country could be replicated in another. Having stated that up-front as a caution and philosophy, this paper will attempt to list out the best examples in the area of policy that were found in the 13 member states visited. (of course this is information or assumption made from the limited research carried out in a very limited time). However this information may be of interest for strategy makers in other countries.

### Best Practise Status

<i>Framework Issue</i>	<i>Best Practise</i>
<b>1) Infrastructural framework: Connectivity and cost</b>	
a) Availability of communication services, access centres and networked computers	<i>Jamaica and Trinidad</i>
b) Effective policy for competition among communication and information services providers	<i>OECS has the best policy</i>
c) Affordability and reliability of network access, including the cost of service (against per capita/average wage)	<i>Dominica is today the cheapest</i>
d) Existence of any incubator facilities/IT Parks	<i>Belize has a very successful park. Antigua also promoting.</i>
<b>2) Policy Framework: E-Leadership and Participation</b>	
a) E-Readiness a national priority	<i>Trinidad and Jamaica</i>
b) National IT/E-Commerce plan or strategy	<i>Trinidad</i>
c) Agency leading the initiative	<i>Trinidad and Grenada</i>
d) e-Government and promotion of participation of citizens	<i>Trinidad</i>
e) Digitization of trade infrastructure and procedures	<i>None</i>
f) Partnerships between industry and government to improve E-Readiness	<i>Trinidad</i>
<b>3) Legal Framework: Security and privacy</b>	
a) Legal support for e-Commerce transactions	<i>Barbados</i>
b) Strength of legal protections for processing and storage of networked information	<i>Trinidad</i>

c) Legal and regulatory framework to address and prosecute cyber crimes, authorize digital signatures, and enable public key infrastructures	<i>None</i>
d) progress in protecting intellectual property rights.	<i>Trinidad</i>
e) Measures of consumer protection and extent of efforts to protect privacy.	<i>None – initiative in St. Lucia</i>
<b>4) Human capacity framework: E-enabled Human Capital</b>	
a) IT teaching in the education system	<i>Barbados has pro-active strategy</i>
b) Institutional framework fostering culture of local creativity and information sharing	<i>Barbados has clear policy</i>
<b>5) E-Business Environment: Enabling seamless E-Commerce</b>	
a) Highest growth of IT industry and IT in industry	<i>Jamaica and Trinidad</i>
b) Existence of e-enabled financial framework to support electronic transactions	<i>Trinidad</i>
c) Availability of venture capital for e-Business	<i>Finance a problem all over</i>
d) Climate and policy for participation by foreign investors in ICT businesses	<i>Jamaica has clear set policy</i>
<b>6) The International and Regional framework</b>	
a) Negotiating stand on E-Commerce at the WTO, FTAA etc.	<i>Jamaica and Trinidad</i>

### Section III: The Regional Imperative: Issues and Recommendations

#### 3.1 Rationale and Advantage of Regional Initiative

There are several reasons why a CARICOM wide E-Business strategy and initiatives would be useful. Some of these are outlined below:

- E-Commerce can serve as an important bridge and link between the states of the CARICOM. Even in so far as information over the Internet is concerned, this would provide useful and common platforms for collaboration. In this sense E-Business capacity development in the CARICOM would serve to strengthen the initiatives towards the single market.
- Tourism is not only one of the largest sectors of the CARICOM economy but also the one with tremendous potential in the area of E-Business. Here, the selling of the Caribbean as a destination rather than that of individual companies would go a long way in strengthening an existing brand and creating a niche market for Tourism related E-Business.
- For every member state in CARICOM, E-Business capacity development is a necessary and desired requirement. In the absence of the required resources internally states need to access external funds. Such funds from the major donor agencies such as the EU, US, World Bank, IDB, Commonwealth Secretariat etc. are easiest available at a regional level through the CARICOM secretariat.
- The above initiative has the additional benefit of providing a regional forum for standardisation and co-ordination of the initiatives in this area. Not only does this help to align governmental strategic plans but also provide for a common approach to issues such as the 'digital divide'.
- A CARICOM level regulatory or consultative mechanism is a requirement. This would help set standards for example for,
  - ISPs
  - IT Training institutes in the private sector

Based on the Country Diagnostic Analysis research, literature review and interaction with the public and private sector during the course of the mission, the following regional perspective and recommendations, in the same three framework areas of *Info-structure*, policy and e-Business environment is outlined herewith.

#### 3.2 The Regional Framework: *Info-structure*

This really is the issue of the 'connectedness' of each country and the region. This applies to both the telephone and Internet or data connectivity, as available in the region. The lack of affordable access can turn the potential benefits of e-Commerce to potential disadvantages<sup>65</sup>. Though the region has a

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<sup>65</sup> FTAA Joint Government-Private Sector Committee of Experts on Electronic Commerce, June 2000, *International Experience of Government Programmes Destined to Support Small and Medium Enterprises (SMEs) with Respect to Access to the Internet, Export Promotion and Logistics*

fairly extensive telecommunications network – both wireless and undersea cable – issues of bandwidth and cost continue to plague the development of e-Business. The biggest telecom player in the region, with almost a total monopoly has been Cable & Wireless (except for BTL in Belize, GT&T in Guyana and Telesur, a govt. monopoly, in Suriname). Governments in the region have embarked on a telecom reform process and marked success is discernible in Jamaica, Trinidad and Tobago and the OECS states. The last of these has probably been the most structured and far-reaching. This sub-regional reform process with essentially one telecom company could well have been done at the CARICOM level itself and would have paid high dividend not just in the telecom reform sector but helped standardise and co-ordinate so many of the other issues that impact on e-Commerce and e-Business<sup>66</sup>. Even today there is scope of co-ordination at the CARICOM level in order to iron-out several issues that are and will continue to emerge in the near future. This study strongly recommends a more pro-active consultative process via CARICOM in the telecommunications area. Also governments should assist local IT and e-Commerce enterprises to negotiate special rates with the monopoly telecom provider. This would not only give a positive signal for investment but help establish and iron out the problems for the sector. While the increasing Internet access and subscriber base (through dial-up connections) looks good and is a positive development, real e-Commerce is largely dependant on the e-Businesses (both new and existing).

The importance of cost is startling when one notes that in most of the CARICOM area, either high-speed connections (256K upwards) do not exist and where they do, they could cost over US\$15,000 per month. IT businesses in the region compare this to the USA where homes in New York for example, have 10Megabit connections at US\$30 a month!

In the OECS sub-regional area, where the telecom reform process is presently under implementation – some of the results or implications are:

- Some new ISPs arriving on scene
- In many countries the arrival is delayed as either the procedures are not in place or the Telecom Regulatory Authority is non-operational for lack of resources or staff.
- Cost of Dial up Internet access for individual customers is going down but not yet much impact for Business who need lease lines and adequate bandwidth. The T-1 and E-1 lines are either not available or prohibitively expensive. The new ISPs, at least for the present, will be dependant on the Cable & Wireless gateway or will have the option to set up their own Satellite access for downloading only. With full liberalisation they could have their own connectivity. Such satellite links are still rather expensive though prices are falling.
- The agreement should have addressed the issue of providing special rates to educational and other essential services (eg. E-Health services)
- OECS still was able to start a process that the entire CARICOM should have.

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<sup>66</sup> This could have been initiated through the Caribbean Telecom Union

- Those of the CARICOM member states that do not liberalise their telecom monopoly at the same time as the OECS, run the risk of losing business to these locations. (Something that is alleged by local IT providers to have already happened in the case of Bermuda.)
- Still some issues remain
  - Having a proactive fully functioning Telecom regulatory authorities or Fair Trade Commission
  - Interpreting 'cost basis' of Cable & Wireless providing gateway access etc. to others

On account of the reform process and general pressure on the telecomm sector, Internet access prices are falling all over the CARICOM region. However for IT and e-Commerce to become really pervasive, the issue of cost needs to be not an issue at all. That should be the goal.

Another issue of infrastructure is the functioning of the Postal service across CARICOM region. In most countries their efficiency appears to be a serious issue, in so far as timely delivery of packages, an essential requirement for e-Commerce, is concerned. Other multi-national courier services such as Federal Express and UPS are available but prohibitively expensive for regular e-Commerce supplies.

Another aspect of cost of access is the high cost of PCs in the CARICOM region. Despite most governments having allowed duty-free import of computers, other taxes and charges still apply and there is no such exemptions for accessories and parts (Table at Annex 3 refers). On account of the high transportation costs in the region, in effect computers tend to cost almost 60 to 80% higher than in the USA with maintenance costs also much higher.

### **Human Resource**

Planning for the human resource to man the e-Businesses of the future requires an understanding and appreciation of what e-Commerce and e-Business entail and the level of development of these in the economy. Several studies in this area<sup>67</sup> have shown that for business, what is required is a combination of business/managerial and technical skills. Member states need to launch surveys and carry out consultation with business and especially, IT sector in the country, to arrive at strategic initiatives in the area. The most comprehensive education strategy at a national level is that of Barbados. This can serve as a best practice model for other member states.

This study sees different levels of IT skills or training/education required for successful e-Business. Of course this is dependent on the type of e-Commerce or web-based businesses that are presently being operated and those that a country may want to target.

This study sees these at being at three different levels for three different types of e-Businesses.

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<sup>67</sup> A recent study in this regard was that of the Joint BIDC-UWI Project, Nov 2000, *A Survey of Skill Set Requirements for the Information Technology*.

- a) The software area, which includes the skills required for systems design and management. Such expertise usually requires full-fledged computer science or engineering degree level requiring some 5 years of tertiary education combined with some experience in the IT sector. These are the professionals that would be required for software businesses as well as for designing and running e-Commerce applications for enterprises. The required skills for the IT professionals here would be combinations of Internet, database management and industry specific experience.
- b) The second area is a lower level of skill being that for network management, web design and hosting which essentially requires computer skills that include certain certifications such as that for Microsoft, Oracle or Cisco etc. for using specific applications. This also requires basic knowledge of hardware management. Here basic computer training leading on to the certification in specific training modules is the requirement. Having a formal degree in computers is an asset but not a necessity. These professionals would be part of IT services companies and enterprises using some amount of IT integration in their systems and establishing a web presence. There would also be the need for Internet security management and Java developers.
- c) The third level is the e-Business of the IT or web-enabled services. These range from call centres to medical transcription, legal data management, data mining, insurance claim processing and a whole host of back-office functions that are today being farmed out of office and off-shore by companies in the developed world. Here the basic requirement is just that of a good command of the English language and familiarity with computers. Short training and familiarisation with the requisite needs of the job are required for the staff. Quite clearly this does not require formal computer or IT education.

The present position in the area of human resource development is outlined in the country studies. In most member states, computer education is limited to school level familiarisation. Professional training institutes and the University of the West Indies do offer more intensive courses but these need to be updated more frequently. Review of curricula, reflecting the needs of the IT sector and encompassing the emerging trends at the global arena of e-Commerce need to be carried out regularly through a consultative forum.

Clearly, providing the IT education for each of these three levels requires a different strategy. Several policy-makers consulted during the mission were desirous of establishing institutes to develop capacity in the software area. Not only is this the most difficult sector of the whole e-Business area to enter, it is also one most complex and difficult to provide the education for. Training capacity in the region is very limited in this area and experts would need to be invited from overseas. Alternatively scholarships for studying abroad could be expanded exponentially with a concentration on technology. Traditionally such scholarships have looked at the US or UK, where technology training is very expensive. Much more reasonably priced alternatives such as programmes in India need to be looked at.

In the second area of networking and product certification, private institutes have come up in some of the member states and more will come once the demand grows. For the third level of IT or web-enabled services, training is mostly arranged by the e-Business itself or the overseas collaborator. Once the demand for a particular service such as medical transcription, for example, grows, private institutes offering training in it will automatically come. Of course these programmes may be expensive but governments could consider offering subsidies for recognised training institutes. In fact accreditation of such private institutes is another area that the CARICOM Secretariat could consider looking into and sponsoring. This is a need that several developing countries have addressed successfully.

Government strategy and planning in this area is essential as it is in this third area of web-enabled services that this study sees the greatest potential for the CARICOM region for the following reasons:

- English speaking populations<sup>68</sup>
- Same time zone as North and South America
- Near-shore besides being off-shore (to the US market)
- Excellent experience with off-shore financial services
- Strong links with Diaspora (in the US and Europe) that could be activated to bring in e-Businesses
- Immediate employment potential.

Using the Internet itself is one of the most effective tools for e-education. Today the web is full of IT training programmes of every conceivable kind. Not only is there the whole issue of cost and certification but experts in the area firmly believe that the such web-based education is best imbibed by prospective students when it is combined with real-life class-room experience. It is this combined tool and the technology of distance-learning programmes that institutes such as the University of West Indies need to develop especially for creating the IT human resource that is such a crying need for the CARICOM. Based on the successful experience of the Common Examination system, CARICOM Secretariat could possibly tie up an arrangement with UWI and establish distance learning centres for IT education in convenient locations across the Caribbean to offer the right combination of IT web-based and class-room training. A special task-force is recommended to study this issue.

Expanding and deepening the IT education and training facilities and infrastructure always pays high dividends. Not only does it provide a rich resource for the country but is also a knowledge based input required in growing numbers across the world – especially in the developed economies of US and Canada, on the door-step of the Caribbean. Several policy makers however see a great danger in this on account of the perception (and experience) of the trained personnel, leaving for greener pastures in the

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<sup>68</sup> According to many strategy makers and business leaders, one of the reasons for the slow development of e-Business and web-enabled services in the CARICOM region is the fact that there has been too much Central and Latin American focus and not enough exploitation of the English –speaking advantage of the region.



developed world as soon as possible. Though this is a serious issue with most developing countries, as a long-term strategy, this perceived ‘brain-drain’ of today should also be seen as the ‘brain-gain’ of tomorrow, as the experiences of countries like India and China have shown. Such links and migrated persons in the developed economies prove to be the bridge on which cross-border IT contracts and services are built.

As the movement of professional persons gets easier with the single market initiatives, there would be a need for having a skills bank for IT. Such data compilation and its availability through an IT head-hunters agency, would help fill the gaps at a regional level.

Another issue with IT education that needs to be addressed is that in all the CARICOM states, education is and has been mostly in the public sector. Here the salaries etc. are fixed as per government norms and match those of other disciplines. Because IT professionals and experts get such high wages in the private sector, they are not willing to accept the salary structure of the public institutions. This in part explains the severe lack of IT teachers across the CARICOM. Solutions need to be found for this. Several options are there such as establishing special IT institutes outside the government network; encouraging private sector institutes; using consultants as teachers on short-term contracts; seeking IT teachers from outside the region; providing for special bonuses or allowing private work to public sector IT teachers etc.

The above possibly also applies to another issue of the framework concerning human capacity, i.e. whether there is institutional framework fostering culture of creativity and information sharing. Two factors here need to be kept in mind. Firstly that the educational institutions are basically state run and secondly that the systems of education are colonial based (British for the West Indies and Dutch for Suriname). These systems are rigorous and discipline oriented. These are certainly worthwhile attributes but today’s globalised and knowledge based economy also rewards the capacity for creativity and the whole Internet and e-Business revolution is really based on the concept of sharing. Traditional businesses have always relied on secrecy and conservative practices. As new models of business practice and relationships develop, these again need to change. Countries and institutions in the CARICOM region need to keep abreast of these changed circumstances. Traditional cultural practices including religious influences in many developing countries see a great danger from the Internet on account of its liberalising and free platforms and the easy availability of seditious and porno-graphic material. Such issues need to be handled through different forum and by building awareness and not by trying to prevent the exposure to the Internet for the local youth.

### **3.3 The Regional Framework: Policy**

It is today recommended and established practice that regional bodies such as the CARICOM should help set the framework; governments and the public sector help establish the environment and the private sector take initiative.

E-Commerce and E-Business are extremely vital and important for developing countries, especially such small states as in CARICOM, now trying to carve out a new existence in the globalized world. The benefits cannot be ignored and dangers need to be addressed head-on. Mind-set at the highest level needs to change. For this a serious and concerted e-Wariness programme needs to be carried out by international agencies, especially CARICOM and the Commonwealth, in order to place the issues and strategic options before governments for action.

There is also need for a CARICOM level E-Commerce/E-Business Consortium or Forum that would include the key stakeholders at a regional level so that collaboration and co-ordination of country strategies and regional initiatives could take place. This needs to be mandated at the heads of government level and co-ordinated at the Prime-Minister's office in each member state. Only such a high-level mandate will ensure the several layers of co-ordination required for its multi-sectoral and cross-ministerial impact and turf. Member states in the CARICOM also need to consider a sharing of policy and best practice examples.

In many of the member states, this study found that the opportunity of e-Commerce and e-Business had been identified. It was even considered a priority but the strategy or plan to implement or realise it was missing.

In order to successfully lead the development of e-Commerce and E-Business, it is essential to not only have a public IT and e-Commerce policy but also a lead agency to implement it – especially in Government. Very often this leads to turf battles as the issues of e-Commerce and IT encompass the departments of Commerce, Foreign Trade, Industry, Telecommunications, Science and Technology, Education, Finance and various agencies under them, such as those of trade and investment promotion. Then there is the issue of computerisation or IT and e-Government implementation. In many places across the region this study noted confusion, duplication and turf battles in the area. Not only is it important to select an agency that has the right capacity but more so the highest level of influence and authority to implement the strategy<sup>69</sup>. Arriving at a strategy through a rigorous and consultative process and then getting it approved through Cabinet is essential to ensure success.

Policy regarding customs duty and taxation for IT and e-Commerce also need to be examined. Though many of the member states now have zero duty for the import of computers there are still local taxes (consumption tax and customs service charge) that have to be paid. Also peripherals, accessories and parts are not exempt therefore upgrading systems becomes very expensive.

### **E-Government**

The private and public faces of the Internet are *E-Commerce* and *E-Government* - one fuels the growth of the Internet, and the other ensures its

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<sup>69</sup> Several developing countries (and states within them, such as Malaysia and the state of Andhra Pradesh in India, as examples) have in fact located the initiative in the office of the Prime Minister or Chief Minister.

‘development’. In fact it is e-Government that provides the infrastructure for creating a competitive environment, which in turn makes e-Business possible.

It is important to explain or define what E-Government implies since it is an important component of public policy. Simply stated, e-Government is the application of Information Technology to the processes of Government functioning. It is however more than that. As in the case of e-Commerce, it does not simply mean the transferring of existing procedures to an electronic medium but rather implies a new definition and concept of public governance – open, transparent, participative and efficient. It represents a paradigm shift to the new information age<sup>70</sup>.

As a strategic initiative, therefore, e-Government for the CARICOM should imply action and commitment of the state and its agencies at two levels:

- a) the promotion of the information and communication technologies and especially e-Business, on the one hand and
- b) The adopting of these technologies and all they involve in the matter of a completely new type of commitment, open systems and use of the medium of the Internet for government business, citizen interaction and most important, for development.

IT in government and the offering of e-Government services for the citizens is one of the primary pillars of e-Commerce in developing countries. Not only does this imply the computerisation of government offices but more important, the ‘re-engineering’ of government procedures. The latter is a major task and requires commitment of the highest order and level in government. A WAN (wide area network) for government MIS (management information system) and internal usage by departments, as well as for e-Government initiatives is a must. Some member states are planning to carry out a survey with all govt. departments to find out their requirements for such a network before deciding to go ahead. Though this may be typical of bureaucracies all over and even justifiable for purpose of budgetary debate, the moot question is do governments have the time to wait for detailed survey reports before planning highways between major economic centres in the country! They go ahead as soon as finance is available. The information highway is of even greater importance and it does not cost that much.

Computerising and modernising government and its procedures will not only create an enabling environment for business but since in most of these small member states in CARICOM, government employment itself is one of the biggest ‘industries’ (employing sometimes up to 20% of the population!) its impact will truly be national. In the CARICOM where small populations make human skills very valuable, e-Government can have the added advantage of releasing human resources for other essential tasks such as in the social sectors, by computerising routine bureaucratic functions and thereby optimising skill usage.

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<sup>70</sup> Singh, A. D., 2000

E-Government initiatives and solutions (software) however can be very expensive if individual departments across the CARICOM all start commissioning out their own areas to the private sector. The CARICOM region needs to have such software developed on an open source system and incorporating compatibility and scalability across processes and departments. This process-interoperability is essential for different agencies and locations to be able to interact digitally with each other. One such example is the use of LINUX<sup>71</sup>, which is open-source and virtually free. This whole issue needs careful consideration and study. Either this should be done at the CARICOM level or at least at the country level. Co-ordination and sharing of 'best practice' experience across the region is also vital in this area. One way of going ahead in this area would be for CARICOM to establish a 'Centre of e-Government' for the region.

### *E-Trade Promotion*

In the role of Government or public TPOs (trade promotion organisations) assisting SMEs<sup>72</sup> in the area of e-Business, one issue that is emerging is whether initiatives should be taken up by government or TPOs, to set up portals or websites for private sector SMEs rather than leave this activity to the private sector. Some CARICOM TPOs such as JAMPRO in Jamaica and DEXIA in Dominica are proposing to set up such Portals. International agencies (especially when approached for funding such initiatives) raise the question of the desirability of doing so as recommendations of experts (especially ITC, Geneva) on this issue has been that it is more beneficial for enterprises to register with existing product specific B2B e-Marketplaces where the buyers are, rather than establish country level portals that may not attract the buyers. There is however the counter view to this that registering on existing e-Marketplaces is very expensive and may not be a cost effective exercise.

Also such recommendations may have a lot of strong basis behind them but developing country bureaucracies' work differently. There are so many other issues here. For one, there are several related organisations such as (several levels of) Industry and trade associations that are independent and work on their own agenda. There are also several reasons such as brand-image, inter-agency one-up-man-ship and whatever else, that some of these organisations set up websites and portals – and not just for getting hits for direct trade. Also there is another angle here. Some of the latest reports on B2B e-commerce show that most e-marketplaces are not doing well and several are closing down. What does that mean for the developing countries? Should they wait till the 'global trade-winds' settle down? Should they continue to rely on one to one traditional trade contacts? Should they do domestic e-marketplaces?

The recommendation of this study is that TPOs should set up non-transactional websites or portals that encompass the SMEs (and provides hyper-links to their sites) and other essential information and procedures as the

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<sup>71</sup> LINUX is an open-source operating system that was developed over the Internet and can be freely downloaded from the web. Today LINUX based software and applications are suddenly showing a major growth across the globe.

<sup>72</sup> Small and Medium Enterprises

small businesses need it. It also shows government's commitment and seriousness in the area as well as serves as a catalyst for private sector initiatives. Also TPOs should approach international agencies such as ITC, Geneva for advice and recommendations regarding the registering on existing e-Marketplaces for their industry. Such information could be made available on a regular basis for enterprises to consider and act on.

In fact there is scope to set up a CARICOM e-Commerce Portal to link up with the country level portals and websites that are in any case coming up. CARICOM Secretariat needs to take this up as a project.

In the area of the Trade Infrastructure, the whole CARICOM seems to be in a time wrap since the implementation by UNCTAD of ASACUDA for the Customs organisations in the region some ten or more years ago. The system as it exists today in most of the member states is a mix between manual and automated facilities that are essentially used to compile data for government's own use. Shippers, agents and customers are not linked nor has there been any attempt to implement EDI (Electronic Data Interchange) for the entire gamut of trade transactions – something that has seen much progress in several developing countries, especially in Asia. This seeks to seamlessly link all the major stake-holders including Customs, Trade bodies, shippers, agents and even the Banking sector for providing automated clearance of trade documentation. Today both EDI and ASACUDA are web-enabled but there is no move as yet in the CARICOM region in this crucial area.

### **Legal**

The legal framework for e-Commerce is virtually non-existent across the CARICOM. Only Barbados and Trinidad have some sort of Electronics transactions legal provisions in place.

The main requirement that the CARICOM countries need to address is to make their legal framework conducive to e-Commerce transactions. The UNCITRAL Model Law on electronic commerce is one such standard framework for resolving the contractual issues and obstacles related to e-Commerce. Several developing countries have adopted it or have legislated directly themselves (Examples are India, Singapore, Bermuda etc.). The basic principle being followed is that of "equivalence of treatment" between paper and electronic communication. This is easiest and quickest done by adapting the existing legal system to an e-Commerce and e-Business environment. This requires that besides passing an e-Commerce or IT Act, existing Acts such as the Evidence Act, Company Law and Banking Act (or their equivalent) have to be amended to provide for electronic transactions. During the field research, several of the member states expressed a need for assistance in this legal area. The CARICOM Secretariat e-Business capacity development project already has plans in this area.

This calls for a supplementary requirement. Electronic transactions need some kind of authentication mechanism (i.e. have a digital signature) and be secure in the transaction. This therefore needs a certifying and authenticating agency and a 'public key infrastructure' (PKI – a technology that provides for such a

secure transaction) that needs to be established. Small Island states, as in the Caribbean may not have the expertise or volume of e-Business to justify establishing such an infrastructure and therefore setting it up on a regional or sub-regional basis is another area to be considered by CARICOM.

### *Security and Privacy*

Although there are several appealing and potential features of the emerging global electronic market-place, there are other aspects that are clearly more problematic. One of these is certainly network and data security. E-Business with its potential for anonymity and therefore risk, raises several challenges. As e-Business and e-Commerce grow and expand, there will be more and more requirement for cyber security. This is an issue that concerns both private enterprises as well as governments that need to protect themselves against cyber-terrorism.

The questions of security almost as a corollary, create responses of control. There are many things that countries might reasonably want to regulate on the Internet. These include not just serious affronts to human values such as child pornography and incitement to racial hatred, but also consumer protection, the defence of intellectual-property rights and taxation. Several countries while legislating on IT and e-Commerce, have included issues of 'computer crime',<sup>73</sup> also. Several have also adopted existing laws for this purpose. When applying or making new national criminal laws for the Internet, governments need to take into consideration the global nature of electronic commerce and ensure that controls do not stifle the freedom of the Internet. Any regulation of content needs to be kept to a minimum as this could restrict the free flow of information. Close cooperation among CARICOM governments and between governments and business is vital in this process in order to create an environment of trust and confidence that would help in the development of e-Business.

Another area that needs to be considered for regional cooperation is that of capacity building in the area of cyber-crime. Law enforcement agencies will need awareness building and training to handle issues of cyber security and crime. Today there is just no expertise in the region at all, in this area. In fact it is an issue not even being considered or planned for. International agencies would need to help the region gain such expertise.

Two other issues that need to be addressed are *privacy* and *consumer protection*. Especially in B2C e-Commerce, protection of the rights of consumers is becoming an important area of concern. Already consumers in the Caribbean ordering over the Internet have come across problems as unlike the earlier situation they are now dealing directly with face-less suppliers.

In this type of business transaction, consumers may be affected in the following ways:

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<sup>73</sup> Computer crime is seen to be illegal and surreptitious attempts to invade data banks in order to steal or modify records, or to release over computer networks software or computer virus that corrupts data and programs.

- They may not receive the exact product they ordered (or receive a defective product) since Internet shopping does not provide the opportunity to examine goods before purchase.
- They may not even receive products for which payment was made since it may not be possible to ascertain the legality or existence of the business with which the consumer made the contract. Such scams are being reported across the globe.
- Personal information provided by Consumers may be misused for other purposes without prior consent of the consumer. This could range from credit card to other information such as addresses or preferences etc.

Consumer protection law applicable to e-Business transactions is a must for the CARICOM. This should on the one hand provide for also web-based suppliers making available basic information about themselves and guaranteeing secure transactions and confidentiality, and on the other involve setting up of a network of consumer protection bodies across the CARICOM that would take up cases on behalf of the consumers. This may not be able to provide protection across the globe but by doing so within the CARICOM region, would encourage intra-CARICOM trade and thereby the Single Market initiative<sup>74</sup>.

In the area of *IPRs* – trademarks, copyrights and patents – WTO and WIPO commitments and requirements put a severe burden on small developing countries, such as these Island states, that besides the legislative changes, also require the setting up of an expensive machinery for Patents issue, monitoring etc. Several of the small states have not been able to go ahead with the changes in law and regulation required as they are finding it most difficult to find the resources required (both financial and human). A case for regional or sub-regional regulation needs to be considered in such cases.

### 3.4 E-Business Environment

The lack of data in the area of e-Commerce seems to suggest that there is in fact a lack of e-Business at the moment in the CARICOM area. Due to the issues of cost, bandwidth and payment gateways, whatever little of e-Commerce that is taking place is mostly through the US. US credit cards and address are used; US servers are used for hosting websites; US warehouses and consolidators are used for storage and on-ward transpiration; US based certification services such as *VeriSign* are used for authentication and secure transactions; even merchant accounts are being set up in the US!

Though there is no harm in these arrangements and these are really innovative solutions found by businesses functioning in an adverse e-environment, on a long term basis, it is important to develop all these services in the region itself. Steps must be taken for example, to encourage the regional hosting of IT/Web services to encourage local industry and also to better handle administrative and maintenance issues. Not only will this help develop expertise within the region but will also help promote regional and local brand image. To acquire a

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<sup>74</sup> Consumer protection in e-commerce strategy – Note submitted by Ministry of Trade, St. Lucia

significant presence on the Internet for CARICOM countries, local firms must go online as soon as possible and register domain names with Caribbean significance<sup>75</sup>.

So far as the use of the Internet by consumers for purchasing small goods of the net, is concerned, it is certainly on the rise. This is evident from the fact that there is seen an increase in the number of small parcels being received in the post-offices and the increasing courier business in the region.

Goods presently being accessed and ordered via the Internet in the Caribbean are principally non-bulky items which are relatively easily saleable via the internet medium; and which are subject to standard measurements and readily determinable quality criteria ('low-touch'). These are mostly in the sectors of music, entertainment and household goods - CDs and Videos, books, niche products like natural products, small appliances, collapsible furniture, clothing, computers, to name a few. In addition virtually all items (and more) which were previously obtainable via the traditional mail-order catalogue system of the 60s-80s are now currently available via a steadily increasing internet business presence.

Though this may appear to be a worrying factor for governments of the region, it should be borne in mind that such imports are in any case coming through existing channels of import and are possibly only replacing what would otherwise be imported into the country. Of course for the local traders this is a threat – but then the whole Internet and e-Commerce is in itself a threat to middlemen everywhere!

On the export side the potential for intra-CARICOM trade facilitation through the Internet and e-Commerce is immense. Even the very sharing of critical online information would be a real fillip to trade especially in the area of perishables, for example, fruits, dairy, meat and fishery products etc.. Timely business critical information of price, standards and volumes are essential for promoting trade in commodities. Access via the Internet to reliable and detailed information in all areas of goods and services, and e-enabled trading networks and procedures will definitely promote intra-CARICOM trade.

There are many steps that business itself can and must take in order to create a favourable and dynamic environment for e-Business. For example, one of the essential challenges facing developing countries such as the CARICOM states is to create a climate of trust that makes it possible for enterprises to conduct business online without the need for face-to-face contact. Until governments here succeed in establishing a legal and judicial framework for e-commerce that meets certain minimum standards of transparency, impartiality and efficiency, Internet entrepreneurs will need to devise their own solutions. Self-regulation through codes of conduct under discussion in many industrialised countries provide a model from which business in developing countries could take inspiration<sup>76</sup>.

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<sup>75</sup> Chaitoo, 2000

<sup>76</sup> Caribbean Export Development Agency, 1999, *E-commerce project Information paper*, CEDA, Barbados.



*Potential e-Business areas*

E-Business can be of great potential not only in new areas of business but also for existing enterprises as well. E-Commerce has established or created a new type of business transaction itself, i.e. 'digital commerce', where the good or service is distributed in digitized format. The most common examples are music, videos and software supplied on the net, and web-enabled services such as stockbroking or financial or medical advice etc. that are transmitted to customers on-line via the Internet. Such enterprises and services in the Caribbean have tremendous potential for offering competitive global services. This study has already mentioned that the greatest scope for the CARICOM countries is such IT or web-enabled services and governments must actively promote them.

So far as the exiting areas of business are concerned the most obvious are tourism, music industry and financial services. This is where the CARCIOM has strong presence already and in order to protect its share and also to expand it, using the web as a marketing and servicing tool is essential. Fortunately the tourism sector in the Caribbean has been quick (and the first) to utilise the Internet through email and websites. Due to the un-developed payment mechanism, however, most sites are not interactive (i.e. on-line booking is not possible) and used only as information providing sites.

The music industry also has begun to take advantage of the Internet. There is also a UNDP project presently on in Jamaica for this very purpose. Financial services are also today beginning to offer some limited access for their clients but with a very conservative and cautious approach. The retail sector has also shown some limited utilization of the web. Some stores in Barbados and Trinidad offer services to local clients. On the export side also a few sites are offering a limited range of local crafts and food items. The scope for expansion is unlimited.

It is beyond the scope of this study to examine each and every business sector to assess its potential however it would be of value for the CARICOM Secretariat to commission a separate study for this purpose. Here, the Chambers of Commerce and Industry associations have an important role to play. Not only do they need to promote e-Business by their members but they too should commission studies on the one hand, as well as prepare white papers on IT and e-Business and lobby their respective governments for policy direction and a facilitating environment.

*Marketing*

Quite obviously, e-Business for the region will need specific marketing plans. The Internet has created and offers several innovative and new models for businesses and marketing of them. These range from using email to websites and interactive portals on the one hand, and varying options in them for ad-supported models, auction-house models, niche-marketing models etc. Here again CARICOM needs to sponsor further research and market analysis for different sectors and areas in e-Business. Several regional initiatives are possible. For example, in order to promote the Caribbean brand and

authenticate products and services for the region, a digital “Authentic Caribbean Seal”<sup>77</sup> could be extended to all genuine e-Businesses from the region.

#### *Need for IT Associations*

In many developing countries, IT and e-Commerce associations have played a stellar role in changing government policy as well as promoting IT and e-Commerce in their countries. In many CARICOM member states, there are no such associations and the existing trade or industry bodies are not playing such a role<sup>78</sup>. There is of course a possible explanation for this. Most of the CARICOM states have essentially had import based economies matched by exports of primary commodities. Most of the traditional Chambers of Commerce were therefore set up by traders who were the middlemen in the economy. E-Commerce in essence threatens middlemen as it seeks to provide direct contact between the supplier and consumers. In fact therefore it is a threat to the traditional businesses unless they use it to promote and expand their businesses. It is this contradiction and dichotomy that may prevent the existing chambers from playing a very pro-active role in promoting e-Business. This study therefore recommends the establishing of national IT associations as well as a CARICOM level e-Business association.

### **Banking**

#### *Payment gateway*

Electronic Commerce requires the establishment and availability of a payment gateway in order for exports or cross-border transactions to develop as well as to and integrate into the local economy. Such gateways provide for an online financial exchange through a digital instrument. Such payments on the one hand are less expensive to process and on the other are integral to the concept of e-Commerce.

Today cross-border payments of goods and services as well as payments of a capital nature including payments for securities sold on the Securities Exchange are done mainly by bank drafts, Telex or electronic transfers with the use of the international banking SWIFT system. There is hardly any e-Banking or on-line e-Commerce transactions of an international or even national nature. Globally all financial institutions are looking at integrating payment systems and also providing for on-line transactions. Many of the international banks operating in the region already have such systems available from their parent banking institutions but have not yet begun to offer such services in the region as not only is it expensive but there are several other issues of a regional and national nature such as clearing house issues, legal framework<sup>79</sup> etc. that have to be tackled. The Bank for International

<sup>77</sup> Caribbean Exports, Barbados are already issuing such a seal for their collaborators and the service could be extended to a CARICOM sponsored portal.

<sup>78</sup> Interestingly Trinidad has possibly the first Chamber of e-Commerce that has just started. This unique body has taken upon itself to establish in the country a premier e-Commerce sector.

<sup>79</sup> Not only would there be a requirement for an E-Commerce legislation but several other existing legislation such as the national banking act, the Bill of Exchange and Rates of Interest acts, the Evidence Act and rules and regulations for clearing and practices of banking would need to be modified.

Settlements (BIS) is assisting in this and did a study at the Trinidad and Tobago in this regard. The Caribbean Association of Indigenous Banks (CAIB) is also examining the issue as is the Eastern Caribbean Central Bank. These bodies therefore need to speed up their initiatives to make available the financial framework for E-Business.

#### *Electronic payment systems*

There are three essentials for any electronic payment system

- reliable connectivity between the players involved and secure encryption software for the transaction
- a third party certification and a public-key cryptography infrastructure for authentication
- a legal framework and an inter-party or inter-bank arrangement to process the payment

For any system to be workable and inspire public confidence, it must be authenticated and authorised; it must be secure and private; and it must be non-repudiable, i.e. all parties must be legally bound in the transaction.

Today there are a variety of such payment systems available<sup>80</sup>. The most common of which are

- a) credit-card or smart-card based systems
- b) electronic cash and electronic checks and
- c) micro-payment systems.

Though credit card based transactions are the most common – mainly because it's a known form of transaction and widely available in the developed world, yet there is no one single or consistent form that could be considered as a standard for the Internet<sup>81</sup>. Credit card on the one hand are not very common in the developing world and also transactions are associated with the risk involved in disclosing such private information on the Internet.

In the CARICOM region too, credit-card culture, though the most common presently used in electronic commerce, is not wide-spread. There is therefore scope for alternative technologies to develop. What would be the issues here?

There are three areas where such a payment mechanisms are required:

- 1) Where a buyer in there CARICOM desires to buy something on the net. Here there could be two options. Either it is a cross-border transaction or local. Also the cross-border could be Intra-CARICOM or outside. For such transactions the seller must be able to accept the payment. For CARICOM buyers and enterprises, the availability of the credit-card as well as arrangements to accept payment are still not common.
- 2) The second scenario is that of CARICOM merchants desiring to make export sales. Here, as mentioned before, there acquiring of a merchant account, continues to be a major issue.

<sup>80</sup> Economist, *Paying Respects*, Survey, Online Finance, The Economist Ltd. 2000, at [www.economist.com/editorial/freeforall/20000520/su0420.html](http://www.economist.com/editorial/freeforall/20000520/su0420.html)

<sup>81</sup> FTAA – Joint Government-Private Sector Committee of Experts on Electronic Commerce, August 2000, *Electronic Payment Systems*

- 3) The third issue is that of micro-payments that may be required for small purchases, both locally and from overseas. Since the overhead costs for credit-card processing require at least a minimum transaction of over US\$10 to justify the processing fee, some alternative system is necessary. Some form of pre-paid arrangement (e.g. Stored value cards) or digital cash is therefore a requirement for the future.

It was learnt that Cable & Wireless are now planning (along with Barclays Bank) to offer a payment gateway arrangement for exporters desiring to sell via the web. This service will be presently offered through Bermuda. Though this is a welcome arrangement, simple business logic holds that the more the middlemen the higher the cost. The whole issue in fact is cross-border processing – it adds risk and a cost. Therefore to do it locally, or at least regionally, would be beneficial for all the stakeholders.

The regulatory infrastructure for such electronic transactions, especially the issue of digital signatures, requires a certification agency. The UNCITRAL model Law for Electronic Commerce (1996) provides for a legal basis for this. Countries also need to decide whether such certification agencies should be in the public or private domain. For several small member states in the CARICOM, a regional arrangement or service may be the answer, as establishing separate agencies and the secure systems to go along with it may not be economically viable in each state. This issue needs to be discussed and decided upon.

<i>Case Study :Innovative Enabling of E-Commerce Financial transactions</i>
In most of the CARICOM the Banking industry is not very supportive of or giving out of merchant accounts for allowing credit card on-line transactions. The fear is the 'charge-back' issue for credit cards and the lack of a legal framework. 'Charge-back' is when someone first buys something over the Internet using his Credit Card and then later refuses to settle his bill with the Credit Card issuing bank on the grounds of not having done the transaction. Since there is no proof of the transaction, the bank has to take on the liability for the payment.
In order to sort out the issue of non-availability of a payment gateway as well as to ensure secure transactions some of the solutions that have emerged are:
<ul style="list-style-type: none"> <li>• For selling goods on the net, the local company establishes a contract with a US service that offers secure transactions. Customers buying from the site thus give their credit card information which goes to the US service, who in turn inform the local company by email that they have received an order. The local company then uses a password to access this credit card number from the US service and then physically types in the number to claim the amount from the local bank.</li> <li>• Another variation of this is where the local IT company itself offers encrypted secure transactions on its own server and receives the credit card</li> </ul>

information from the buyer and then physically punches that number into the Credit Card machine to get the money from the local bank.
<ul style="list-style-type: none"> <li>• Lack of credit card availability is also leading to a service where to buy off the net you do so using the credit card of the service provider - for a fee.</li> </ul>
<ul style="list-style-type: none"> <li>• Such services are also offered in the US. Since several US merchants will not ship goods to addresses in the Caribbean, consolidators and agencies in Miami for example, allow you to give their local address for the order and when the goods are received, consolidate it with out-going shipments and despatch it for you to the Caribbean – of course for a fee.</li> </ul>

### Other dimension

The whole issue of payment gateways and a financial network for e-Business has another dimension so far as the CARICOM in particular is concerned and affected. All systems of electronic payments are also associated with the risks of not just security and privacy but also of tax avoidance, money laundering and other on-line crimes. Any such framework will have implications for the already established off-shore financial services and banking industry in the region. Services that are presently under question and scrutiny especially by the OECD countries in matters such as taxation and money laundering<sup>82</sup>. In a sense the cloud of secrecy and the conservative position of the financial services market has probably impacted on the development of financial systems for on-line transactions. Moves towards this and the establishment of the legal framework to support such transactions will have to take these factors into consideration.

### Venture Capital

In the absence of a capital market in most member states, the availability of finance for new e-Business is a major issue. There is virtually no venture capital on offer and even regular finance from Banks in most countries is at high interest rates. Venture capital is a vital factor for e-Business development and CARICOM member states will need to take steps such as setting up public venture capital funds to take care of this requirement.

Since the Banking and financial services sector is one of the most advanced in services and computerisation, this sector could lead the way for e-Business for the region. In fact this should have happened some time ago – explained (and criticised) by some experts as being an operational factor of the financial services industry, being as it is an enclave industry, that does not contribute to the overall business development in the region.

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<sup>82</sup> International advisories are presently out against most of the Caribbean states in three areas i.e. taxation issues of off-shore financial services, Money Laundering, and Internet Gaming.

### 3.5 International Issues

Formulating an international stand or position is in many ways linked to the approach that a government adopts domestically on the issue of e-Commerce and e-Business. Such approaches are basically of two kinds. One being the market-oriented US led approach that believes in leaving e-Commerce essentially to market forces. This view finds endorsement by the coalition of international business organisations in their submission to the OECD ministers in 1998. The other approach is somewhat more pro-active and regulatory in nature and has been adopted by several EU members as well as many developing countries. CARICOM member states though still not clear on their approach (some) are tending to adopt the latter stand both domestically as well as in international forum. This study too would tend to recommend this more pro-active approach while at the same time tempering this with the more basic liberal stand vis à vis international trade, which the compulsions of globalization and geo-political strategic considerations demand. This would imply governments adopting a facilitatory and promotional role in order to ensure their economies benefit from the potential of e-Business.

#### *CARICOM and WTO*

As mentioned earlier in this study, e-Commerce was introduced as a customs duty issue in international trade policy discussions but may well become a subject on the multilateral negotiating agenda of the World Trade Organization. Formulating negotiating positions at the WTO therefore continues to be a matter of concern for all developing countries including the CARICOM. As is the case with most such issues sought to be brought up in the WTO by the developed world, countries of the South find themselves in a somewhat uncomfortable, though not so unfamiliar, a position<sup>83</sup>. Countries such as of the CARICOM have very limited experience in e-Commerce and e-Business and are yet expected to take futuristic positions on the matter. In fact this study has shown that across the region, understanding of the implications for international trade are limited as are the considerations of such issues.

For the Caribbean the WTO issues should be looked at from a dual perspective

- 1) The negotiating stand the diplomats and experts would take, where traditionally, based on the standpoint of the RNM<sup>84</sup>, they would tend to argue from a South perspective on every point that can be so argued (rightly so as a bargaining position);
- 2) The larger economic perspective of the CARICOM - both national and regional. A perspective that should see the potential of the CARICOM as a regional knowledge power - with or without WTO.

#### *A CARICOM perspective*

Essentially the problem of duty or tax occurs only when e-commerce has taken place purely in a digitized format i.e., where all parts of the transaction have been completed 'on-line' in digital or computerized format and no goods have directly passed through a recognized customs or domestic tax point. Where e-

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<sup>83</sup> South Centre, 1999.

<sup>84</sup> The Regional Negotiating Machinery (RNM) of the Caribbean, located at Barbados (and Geneva). One of the most effective developing country research and advisory bodies.

Commerce has been used only to communicate and set up a transaction and the actual delivery is by regular means, the existing tax and duty regulations and procedures continue to apply and can be monitored. For digital supplies the problem for the authorities is to monitor or even be aware that a transaction has taken place. According to a study by UNCTAD<sup>85</sup>, that tried to estimate the loss of revenue on account of digitizable products being purchased on line, the tariff revenue loss accounts for less than 1% of total tariff revenues. Of course this does not take into account e-Commerce services be they financial, travel, design or whatever.

For any country there are two dimensions to this tariff issue. The time and the policy dimension. Each country needs to see whether the present 'stand-still' is harming its interests. In the CARICOM, research will need to be carried out to see whether digitizable products such as music and software are substantially causing revenue loss and harming local trading interests. On the policy side it will need to be seen what the implications of this for domestic taxation policies and the international stand or position in multilateral forum. Does one or the other benefit the overall advantages for the region. Discussions on this issue during the study indicated that the position emerging last year was to allow the stand-still to continue. The question now to be examined is the willingness to extend the 'standstill' indefinitely as countries may have such need or requirements to levy duties in the future. Since most economies of the CARICOM are basically importing economies with very little exports. E-Commerce on the buy side has serious implications for the member states.

On this tariff front, according to some key strategy-makers in the region, earlier the CARICOM position was more or less to support the stand-still regarding the non-levy of tariffs on electronic transactions as at that point e-Commerce was still in infancy. Today the matter is under further study and no consensus has yet emerged. One possible negotiating position could be to agree at the CARICOM level to a duty free environment and at the international level to an extension of the moratorium for a limited period.

Today several developing countries are arguing that the continuation of the moratorium on customs duty should be linked with all other transition<sup>86</sup> issues and a consolidated package solution be found. Some of them (such as Egypt, India etc.) also want that the work programme at the WTO should address all the 'substantive' issues, i.e. to assess also the possible negative impact of e-commerce and the digital economy on developing countries.

#### *FTAA Recommendations*

The FTAA Joint Government-Private Sector Committee in its deliberations submitted specific recommendations on e-Commerce to the Ministers. Some of these recommendations as relevant to the CARICOM states are<sup>87</sup>:

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<sup>85</sup> UNCTAD, 2000.

<sup>86</sup> A reference to the transition periods provided with some of the earlier agreements on trade and services where developing countries feel they need more time.

<sup>87</sup> As listed out by Chaitoo, 2000

Network Access/Competition

- To promote the deployment of the bandwidth necessary to guarantee access to basic telecommunication services, FTAA Governments should update their regulatory frameworks to provide for greater private sector competition in telecommunication services. Policies that encourage competition, facilitate interconnection under reasonable conditions and allow private investment will help to reduce the cost of Internet access and use and promote telecommunications infrastructure development.
- To provide Internet users in FTAA countries with the broadest range of information and services, FTAA Governments should promote access to public telecommunications networks on a non-discriminatory basis.
- To promote the creation of local Network Access Providers (NAPs), which are local interconnection systems for transmitting data among different Internet Service Providers (ISPs).
- To provide for the widest participation of their citizens and to increase their electronic commerce awareness and skills, FTAA Governments should promote Internet access points open to the public, such as in schools, libraries, community centers or public phone centers.
- The topic of public statistics on electronic commerce and traffic could be considered for future work of the Committee.

Governments as Model Users

- FTAA Member countries should promote and use electronic commerce in government-to-government, government-to-business and government-to-individual transactions, thus performing faster transactions at lower costs and with wider coverage. For example:
  - the tender and procurement of goods and services;
  - the delivery of governmental services;
  - making available government information;
  - the presentment of bills, taxes and benefits electronically;
  - online completion of governmental forms;
  - access to national intellectual property offices; and
  - linking all governmental organizations and personnel electronically.

Smaller Economies

- FTAA Governments, especially smaller economies, should encourage greater participation in electronic commerce in order to realize the benefits and avoid possible disadvantages.
- FTAA Governments should continue to share information and experience on best practices with respect to policies that will encourage development, attract investment and promote the widest use of electronic commerce.
- FTAA Governments, jointly with the private-sector, should consider the development and implementation of national strategies for electronic commerce.

Engaging Small/Medium Enterprises (SMEs) in Electronic Commerce

- FTAA Governments should actively promote awareness among SMEs of the opportunities and benefits of electronic commerce and encourage its use as an efficient way for accessing international markets.
- FTAA Governments and the private-sector should seek to undertake SME education and information campaigns, and make use of resources offered by local business organizations and local chambers of commerce.
- To increase the participation of SMEs in international trade, FTAA Governments should explore ways to tailor their existing trade promotion programs to better support SMEs' penetration of foreign markets through the use of electronic commerce, such as virtual trade shows.



This Joint Committee also found that there is real dearth of data and information regarding e-Commerce in the region and therefore recommended the matter of collecting statistics. Many of these recommendations listed above are in consonance with the views and finding of this study and need to be expeditiously considered by the CARICOM member states. Many are already under debate and consideration such as that of connectivity and competition in the ICT sector.

#### *IPRs and e-Commerce*

The issue is to develop technology and regimes that can be applied to the digital environment in a manner that promotes electronic commerce while protecting intellectual property rights<sup>88</sup>. Most developing countries including those of the Caribbean are changing their IPR law. The position therefore should be to continue to support the IPR regime while demanding representation on standard setting bodies such as ICANN. CARICOM should also ask for an easier and more affordable access to the arbitration mechanism at WIPO in the matter of disputes over domain names.

WIPO is pressing all the CARICOM states for updating IPR laws and their enforcement. Though these states would like to do the same, the question is really of capacity and resources – especially for the small island states. International agencies need to help them on the one hand, with WIPO considering allowing regional or sub-regional level bodies for enforcement and patent registration etc.

#### *World Customs Organisation*

The World Customs Organisation (WCO) has been promoting computerisation and IT in Customs organisations worldwide. They promoted EDI<sup>89</sup> for several years and now have been recommending that Customs organisations must have web-based services for e-Commerce. In terms of the response of the CARICOM to the World Customs Organization deliberations regarding E-Commerce, it is important to note that the CARICOM member states did not effectively follow the recommendations of the WCO regarding EDI. For several years now, the WCO has been promoting the transfer of trade facilitation services from EDI to e-Commerce Internet based transactions<sup>90</sup>. CARICOM member states need to take a pro-active role in implementing this move in order to make their trading systems more efficient and modern.

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<sup>88</sup> Alliance for global business, 1999, A global action plan for electronic commerce, AGB, OECD, Paris.

<sup>89</sup> Electronic Data Interchange, the process by which computers 'talk' to each other, in their own language.

<sup>90</sup> World Customs Organization, Electronic Commerce for Customs – ADP Sub-Committee reports at [www.wco.org](http://www.wco.org)

## Section IV: Towards a Strategy for E-Business in the CARICOM

The framework analysis has provided two specific conclusions.

- That the level of e-Business capacity and e-Readiness in the region is wanting - to say the least.
- That by using the framework to identify the gaps, steps towards an E-Business capacity development strategy can and must be chalked out.

### 4.1 SWOT Analysis

Since this section is turning to specific recommendations for a strategy for e-Business in the, it would be of import to add a SWOT analysis to the framework discussed in the sections preceding. Based on the diagnostic field study, including questionnaires and semi-structured interviews from the mission, the statement below is a SWOT analysis that exemplifies the strengths and weaknesses of the region in the area of e-Business.

<p style="text-align: center;"><b><u>CARICOM</u></b>  <b>E-Business Environment FRAMEWORK</b>  <b>SWOT Analysis</b></p>			
<b>STRENGTHS</b>	<b>WEAKNESSES</b>	<b>OPPORTUNITIES</b>	<b>THREATS</b>
Political and relative macroeconomic stability	Small size of countries and small regional markets	Expanding number of potential regional and foreign investors in E-Commerce	Strengthening regional competition for trade and investment
Preferential market access regionally and to US, Canada and EU	Inadequate promotional thrust to attract investment	Scope to liberalise trade and investment procedures	Erosion of preferential market access
Good labour relations and a trainable workforce	Lack of technological skills and lagging productivity	Strong tourist industry and potential for IT service industry	Further deterioration of labour cost/productivity performance
Attractive investment location	Cumbersome bureaucratic procedures	Time zone advantage for IT	Further relocations of IT professionals from CARICOM to other parts of the world

From the above statement it is clear that there is strong potential and yet there are dangers too. Based on this, CARICOM as a region and member states need to consider appropriate strategic response. What these responses should be

have been outlined in the preceding sections. Based on these suggestions a summary of the main recommendations is encapsulated below.

## 4.2 Summary of key points

Using the vast potential of e-Commerce and the Internet for Business and development is becoming an integral part of the strategic thinking of several professionals worldwide. Policy and strategy makers in the developing economies of the CARICOM need to convert this opportunity into e-Business in their countries. Most governments in the member states are far behind in addressing the policy issues required for the conversion and convergence of e-Business and the ICT technologies. International agencies especially the CARICOM and Commonwealth secretariats have an important role here. They need to help provide best practice examples, strategic initiatives and an e-Business primer for use by the member countries. This study is an attempt in that direction. The potential of e-Business can and should be used for development and growth of these economies individually and for the CARICOM region as a whole – through strengthening the single-market initiative for example. The whys and how of it are summarized below.

- Despite the ‘dotcom’ crash on the stock market, e-Commerce and the Internet are growing by leaps and bounds. E-Business is the way of the future and e-Commerce has tremendous potential for developing countries, for businesses in the new digital economy and for governments as a tool for development.
- As e-Commerce growth becomes more and more significant, the CARICOM countries will need to actively engage in it. Their ability to do so will depend on several factors, such as their infrastructure, both physical (the telecommunication network), as well as the financial and legal framework, including the business and trade environment conducive to e-Business.
- e-Commerce and e-Business are more than just electronics and commerce/business added together. They represent an entirely new way of doing business (including that of government) over a medium that changes the very rules of doing that business. E-Business is therefore far more about strategy and management than it is about technology.
- This mandates a new perspective and approach to policy planning and strategy, especially in the CARICOM where the development of electronic transactions on the Internet are still in their infancy.
- In order to recommend an E-Business capacity development strategy for the CARICOM region it is important to first make an assessment of the ‘e-readiness’ of the countries of the region for and in the new digital economy.
- The CARICOM countries lag far behind and will need to adopt proactive policies to generate investments into the infrastructure on the one hand while examining intermediate solutions and models to facilitate access to strategic areas and sectors to accelerate immediate opportunities for e-Business on the other.
- It is important to distinguish between the general issues of the Internet *infrastructure* and those specific aspects that directly affect e-Business and its development.

- Developing countries like in the CARICOM, being late in the race of high-tech information and communication technology (ICTs), may benefit from accessing more advanced and developed technologies after they have been tried and tested in the North<sup>91</sup>. E-Business strategy should be planned to help these countries leapfrog over the previous development paths that have occurred in industrialized countries.
- The CARICOM countries should seek short-term solutions to the economic barriers to their implementation and participation in e-Business. The longer they wait to join the developed countries, the farther behind they will fall as e-Business and e-Commerce in the developed countries is growing rapidly. Examples of short-term strategies include building networks linking local institutions and schools, especially focusing on the lack of access in the rural areas and promoting the e-enabling of SMEs. Governments could also prioritize policies by promoting mass e-literacy targeting particularly school children.
- For e-Government potential applications there is a need to develop some standard, simple and efficient yet cheap applications (like the LINUX operating system that has been developed freely and openly over the Internet). International organisations have a role here.
- Because of the multidimensional environment that e-Business operates in, governments need to appreciate the requirement for cooperation between sectors, organizations and countries in policy making and implementation to address the challenges.
- Although there has been limited research or debates on e-Business, there are international organizations and conferences addressing issues in e-Commerce and the Internet, which are very similar to those in e-Business. International organizations like the Commonwealth, ITC and UNCTAD etc. contribute to the ongoing international deliberations on the subject. These organization also provides direct support to Member Countries. They should therefore contribute to further research and best practise development so that this could be shared between developing countries.
- The CARICOM member states also need to prepare for discussions on e-Commerce in the international arena, especially the WTO and FTAA. They need to understand, and assess carefully from their perspective, the pros and cons of the different proposals and issues in this connection that could emerge at these forums.
- Most policy makers in member states are not even aware of the global issues of e-Commerce or the implications of the on-going discussions at WTO and FTAA.
- The deliberations at WTO on e-Commerce revolve essentially over three major issues: a 'stand-still' on the customs duty imposition; the question of classification of e-Commerce, either as a good, service or something else from the standpoint of the existing WTO agreements, and ; the question of protecting IPRs<sup>92</sup> on the Internet.
- On the tariff issue one possible negotiating position could be to agree at the CARICOM level to a duty free environment and at the international level to an extension of the moratorium for a limited period.

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<sup>91</sup> Singh, A. D., South Centre Working Paper, 1999.

<sup>92</sup> Intellectual property rights

- It is the view of this study that there are several reasons why a CARICOM wide E-Business strategy and initiatives would be useful. These include regional coordination and standards for a regional framework, a better bargaining position, easier access to international funding etc.
- In the area of the telecom infrastructure, a reform process is on, however it should be coordinated at the CARICOM level and not just the OECS.
- Need for an ISPs association across CARICOM to not only negotiate and lobby governments but also be able to obtain better block rates for the region from the big undersea fibre and satellite companies (such as *WorldCom*, *Verrisat*, *Intelsat* etc.).
- On account of high transportation cost and assorted duties and taxes IT hardware and software continues to be much more expensive than US or Europe.
- In the area of human resource for e-Business there is a tremendous shortage in the CARICOM. Member states need to launch skills surveys and carry out consultation with business and especially, IT sector in the country, to arrive at strategic initiatives in the area.
- There is also a need for considering the regulation of private IT teaching shops
- The CARICOM Region could also negotiate with large IT companies like IBM/Microsoft/CISCO etc. to obtain CARICOM level sponsorships.
- This study has identified three strategic areas/levels for Human Resource development attuned with the potential for e-Business in the region. Web-enabled services are considered as having the highest potential for the immediate future.
- Data availability is a very major problem in the CARICOM states. This apparently is not just an issue in the area of IT but other sectors as well. So much so that some of the countries are actually being removed from the development index due to the non-availability of reliable data<sup>93</sup>.
- The legal framework for e-Commerce is virtually non-existent across the CARICOM
- There is also need to consider establishing a regional or sub-regional level authentication and certification body for e-Commerce transactions as such transactions may not justify establishing the PKI infrastructure in the small island states.
- There is also need for capacity building in the area of addressing cyber-crime, as well as consumer protection on the Internet.
- Similarly, in the area of IPRs – copyright and patent protection – the small island states are not being able to afford setting up separate infrastructure and therefore a case for regional or sub-regional administration should be made out.
- The lack of data in the area of e-Commerce seems to suggest that there is in fact a lack of e-Business at the moment in the CARICOM area
- The potential for intra-CARICOM trade facilitation through the Internet and e-Commerce is immense
- Steps must be taken for example, to encourage the regional hosting of IT/Web services to encourage local industry and also to better handle administrative and maintenance issues.

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<sup>93</sup> St. Vincent was mentioned as one such case

- Payment gateways, especially at the CARICOM level need to be put in place to encourage e-Business and e-Commerce both within and beyond the region.
- Based on the framework analysis of e-Readiness and the SWOT analysis mentioned above, a regional strategy for e-Business capacity development must be put in place as soon as possible.

### 4.3 Specific Recommendations at the NATIONAL level

At the national level the most important recommendation is for the national strategy makers to review their country's framework analysis of e-Readiness, identify the gaps and prepare capacity development strategies for addressing the issues. In doing so they may like to keep the following recommendations/questions also in mind:

- ⇒ The very first requirement is to formulate an IT/e-Business policy and strategy, which clearly sets out goals, establishes a lead agency and clarifies the resources and responsibilities for all departmental concerned.
- ⇒ In the area of infrastructure the question to be decided is whether governments themselves establish incubator facilities and IT parks or leave it to the private sector?
- ⇒ In trade promotion the question before government is if it should set up a national Portal?
- ⇒ Member states need to launch surveys and carry out consultation with the business and especially, IT sector in the country to arrive at strategic initiatives in the area of e-Business including that of human resource development.
- ⇒ In order to promote IT education and also prepare for the future digital world it is also recommended that irrespective of the area of study (i.e. Arts, Science, Medicine etc.) basic computer education must be made compulsory. To ensure this governments need to make it mandatory for students to clear the prescribed computer course/exam before they are granted whatever degree or certificate they may be studying for.
- ⇒ Governments should continue to promote both formal and non-formal skills-development programs. For eCommerce this means both eWareness and eLiteracy programmes. There will be a much greater need for in-house training of existing workers so that they become e-literate. This is something that enterprises and developing counties need to focus on.
- ⇒ Movement of professionals remains an issue. Shortage of IT professionals requires work permits for IT/e-Business and a supportive policy from governments on this is a requirement.
- ⇒ IT associations at the national level need to be established and white papers on e-Business prepared by industry bodies for discussions with government.
- ⇒ In the absence of a capital market in most member states, the availability of finance for new e-Business is a major issue and therefore venture capital funds sponsored by national governments may be required.

A word of caution needs to be added here. It is not always feasible and prudent to await the completion of detailed studies and research before embarking on the formulation of policies in an important sector like e-Commerce/e-Business.

Therefore the final recommendation here would be that strategy makers should just try to ensure that their basics for planning are right and get on with it!

## 5. Conclusion

*The CARICOM states, like other developing countries, cannot control the winds of globalization, but they can surely learn to adjust their sails.*

That is the main conclusion of this field study. Definitive, planned, pro-active, concerted and strategic initiatives have to be undertaken by several stakeholders – the CARICOM Secretariat, member states, private business and their associations - with assistance from International agencies such as the Commonwealth Secretariat, World Bank etc.

Policy on e-Commerce and e-Business should be the results of broad and open national debates. Bodies like the CARICOM must open up the debate on e-Commerce and its implications for business and employment to further open discussion and research. Civil society, trade and industry associations, labour unions, NGOs – all must be invited to participate in the debate.

There are examples of initiatives that have been taken up in several developing country governments for the promotion of Internet and e-Business in their countries and the partnerships with trade and industry that are emerging. These need to be strengthened and here the International Agencies have a role in promoting such partnerships, providing studies and models and disseminating ‘best practise’ examples for the CARICOM countries to emulate or consider.

International organisations such as the Commonwealth, UNCTAD, UNDP, IDB etc. also have a responsibility to assist the CARICOM countries in the area of advocacy and human resource development for this new technology. Collaboration and common programmes with other developing countries would be beneficial for the world economy as a whole. In the international area it would be also important to note that several international agency initiatives are on-going in the area of e-Commerce and ICTs that impact on the developmental context of I.T. and e-Commerce. On the one hand, besides the WTO and FTAA (in so far as the CARICOM is concerned) the multifaceted issues associated with e-Commerce are being dealt with in a rather fragmented manner across a wide range of multilateral institutions. The obvious danger is that standards and rules may get set by the as per limited agenda, while ignoring the developmental aspects of e-Commerce.

On the other hand, even in the Caribbean region, there are numerous initiatives in the area that today going on. Most of these of course are of a research or promotional nature. In this virtually virgin area of e-Business in the CARICOM, such initiatives are welcome and required. What would of course be of benefit to all member states and to the CARICOM Secretariat, would be the compiling a listing of all such initiatives and if possible, at least an information sharing exercise between the agencies, if not a viable co-ordination or consultative mechanism. The obvious advantage would be harmonised policies for the region. To start with a meeting to address this matter is recommended.

In conclusion it needs to be said that though this study has made several recommendations for CARICOM level initiatives, it is not important that CARICOM itself provide for all of these. It does not matter who does it, what is important is that



there is a harmonised approach and that they get done. That is what will strengthen the goal towards a single market economy.

### 5.1 E-Business capacity development action plan for CARICOM

CARICOM has already planned to take up initiatives in the area of e-Business. Finally therefore it is suggested that this body of effort be directed towards the formulation of an *e-Business Capacity Development Action Plan* that could include the following:

- 1) All across the region there is a complete lack of data regarding e-Commerce and IT. CARICOM needs to sponsor further research studies for this, as well as establish a mechanism for on-going data collection.
- 2) This study strongly recommends a more pro-active consultative process via CARICOM in the telecommunications area.
- 3) There also needs to be an arrangement to survey comparative costs of network access and use among the CARICOM economies. The survey would monitor progress and issue annual updates
- 4) In the area of education there is need for a detailed survey to assess the actual level and participation both in the public and private sector. This needs to be matched by a skills survey with the IT industry in order to assess the requirements for e-Business and come up with a regional IT educational plan
- 5) Based on the successful experience of the Common Examination system, CARICOM Secretariat could possibly tie up an arrangement with UWI<sup>94</sup> and establish distance learning centres for IT education in convenient locations across the Caribbean to offer the right combination of IT web-based and class-room training. A special task-force is recommended to study this issue
- 6) E-Wareness building (through studies, seminars conferences etc) in the area of e-Commerce still remains a major requirement especially in the smaller states<sup>95</sup>. Such e-Wareness creation is essential for both the public and private sector as it is necessary to convince both of the benefits of (and dangers of not using) the Internet and e-Commerce. These conferences should be done both regionally as well in member states where different sectors and agencies be invited.
- 7) CARICOM should consider establishing a Centre for e-Government where all initiatives can be shared and best practice and success stories high-lighted for others to use. This centre could also assist in developing software solutions as well as ensuring that all IT systems and MIS being developed are scaleable and web compatible.
- 8) Capacity is an issue at all levels so far as e-Commerce is concerned and therefore training and capacity building would be required in Govt. departments, Banks, Customs, Police etc. for establishing e-Government and online e-Commerce.

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<sup>94</sup> University of the West Indies

<sup>95</sup> Such exercises organised by the private sector in the region are sometimes exorbitant charging as much as US\$500 for a day!

- 9) There is scope to set up a CARICOM e-Commerce Portal to link up with the country level portals and websites. Such a website would also establish an on-line database of developing country e-Commerce best practices, with live site links and explanatory comment
- 10) CARICOM needs to sponsor further research and market analysis for different sectors and areas in e-Business so that their potential can be quantified and specific strategies put in place.
- 11) Empirical data on the actual impact of e-Commerce across sectors and countries is lacking and therefore studies on the impact on e-Business at different stages of the new e-Commerce global supply chains would be most relevant.
- 12) In consultation with RNM, CARICOM should examine the various issues on e Commerce as they evolve before the WTO and FTAA and suggest options for consideration and negotiation.
- 13) CARICOM should provide a regular forum for discussion and debate on common issues and problems. In this connection a CARICOM level e-Business forum is recommended, as a permanent standing body. This needs be mandated at the Heads of Govt. level in CARICOM;
- 14) CARICOM must encourage member states to review the legal issues addressed in the UNCITRAL Model Law on e-Commerce and to make appropriate changes to their national laws as required for e-Business.
- 15) CARICOM should also consider maintaining an e-Commerce Legal Guide on the Internet as a means of providing CARICOM member states with a first level of understanding of the legal issues they may encounter in other economies.
- 16) CARICOM should also have in place an arrangement to carry out a regional review of cyber crime and efforts being made to ensure the security and privacy of e-Commerce transactions.
- 17) To all of the above as well carry out consultations for fine-tuning the regional strategy, CARICOM needs to establish a project and programme for e-Business capacity development, at least for the next 2 to 3 years. To do this it should consider approaching the Commonwealth or other international body for support.

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**Country framework analysis for CARICOM States on their E-Readiness for E-Business**  
**(June/July 2001)**

**Member State: ANTIGUA & BARBUDA**

Basic Data:

Population:	64362 (1996)
Area:	440 Sq.Km
GDP:	EC\$ 1472.6mn (1996)
GDP Per Capita:	EC\$ 19262 (1993)

<p><b>1) Infrastructural framework: Connectivity and cost</b></p> <p>a) Availability of communication services, access centres and networked computers</p> <p>b) Existence of effective competition among communication and information services providers</p> <p>c) Affordability and reliability of network access, including the cost of service (against per capita/average wage)</p> <p>d) Reliability of electrical supply for e-Business-critical operations</p> <p>e) Existence of any incubator facilities/IT Parks</p>	<p><i>Fairly good and widespread.</i></p> <p><i>Govt. has monopoly over local network and Cable &amp; Wireless over international. 2 ISPs presently offering Internet access.</i></p> <p><i>Dial up 56K available at EC\$99 monthly (plus local phone call charge) against an average wage of around EC\$2500. T-1<sup>96</sup> lease is available at EC\$28000.</i></p> <p><i>Not an issue.</i></p> <p><i>Free Trade Zone established.</i></p>

<sup>96</sup> A T-1 is a dedicated digital telephone line connection supporting data transmission rates of 1.544 megabits per second. This is made up of 24 digital channels each of which supports 64 kbs. (The standardized 64 Kbps channel is based on the bandwidth required for a voice conversation.) Most small Internet providers have a T-1 (or a fractional T-1) line as their connection to the Internet. A fractional T-1 line refers to the rental of some portion of the 24 channels in a T-1 line. A full T-1 should accommodate from one to over 200 users and other services from an Internet provider. A T-3 line transmits data at 44.746 megabits per second. This is also referred to as an E-1 line.

<p><b>2) Policy Framework: E-Leadership and Participation</b></p> <ul style="list-style-type: none"> <li>a) Is E-Readiness a national priority</li> <li>b) Is there a national IT/E-Commerce plan or strategy existing</li> <li>c) Is there an agency leading the initiative</li> <li>d) Progress with e-Government and promotion of participation of citizens</li> <li>e) Digitization of trade infrastructure and procedures</li> <li>f) Partnerships between industry and government to improve E-Readiness</li> </ul>	<p><i>The PMs office pushing for it but not yet a national initiative. Draft ready for approval.</i></p> <p><i>Yes, the Information Technology Centre.</i></p> <p><i>Though there are some websites of government and re-engineering initiatives in some depts. E-Government progress is slow. Not available</i></p> <p><i>Very little formal consultation.</i></p>
<p><b>3) Legal Framework: Security and privacy</b></p> <ul style="list-style-type: none"> <li>a) Legal support for e-Commerce transactions</li> <li>b) Strength of legal protections for processing and storage of networked information</li> <li>c) Strength and effectiveness of the legal and regulatory framework to address and prosecute cyber crimes, authorize digital signatures, and enable public key infrastructures etc.</li> <li>d) progress in protecting intellectual property rights.</li> <li>e) Measures of consumer protection and extent of efforts to protect privacy.</li> </ul>	<p><i>Not available</i></p> <p><i>Not available</i></p> <p><i>Planned but not yet in place.</i></p> <p><i>Patents and Trademark laws need updating</i></p> <p><i>Not available for Internet.</i></p>

<p><b>4) Human capacity framework: E-enabled Human Capital</b></p> <ul style="list-style-type: none"> <li>a) Availability of e-professional for e-business</li> <li>b) Skills and efficiency of the workforce</li> <li>c) Levels of IT teaching in the education system, including private initiatives</li> <li>d) E-literacy amongst citizens</li> <li>e) Is the institutional framework fostering culture of local creativity and information sharing within the society</li> </ul>	<p>A growing shortage</p> <p><i>Could be easily trained.</i></p> <p><i>Basic level only with the Technology Institute beginning to offer certified training.</i></p> <p><i>Quite low.</i></p> <p><i>Not yet.</i></p>
<p><b>5) E-Business Environment: Enabling seamless E-Commerce</b></p> <ul style="list-style-type: none"> <li>a) Present status of IT industry and IT in industry</li> <li>b) Existence of e-enabled financial framework to support electronic transactions</li> <li>c) Availability of venture capital for e-Business</li> <li>d) Transparency and predictability of regulatory implementation, openness of government, rule of law, etc.</li> <li>e) Climate and policy for participation by foreign investors in ICT businesses</li> </ul>	<p><i>Quite low</i></p> <p><i>Does not exist.</i></p> <p><i>Not available</i></p> <p><i>Fairly good.</i></p> <p><i>Investment encouraged</i></p>

<b>6) The International and Regional framework</b>  a) Negotiating stand on E-Commerce at the WTO, FTAA etc.  b) Regional and sub-regional collaboration	<i>Depending on RNM.</i>  <i>Expect CARICOM to assist.</i>
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**Country framework analysis for CARICOM States on their E-Readiness for E-Business**  
**(June/July 2001)**

**Member State: BARBADOS**

Basic Data:

Population: 264,600 (1996)  
 Area: 430 Sq Km  
 GDP: EC\$ 5383.3 (1996)  
 GDP Per Capita: EC\$ 17,756 (1996)

<p><b>1) Infrastructural framework: Connectivity and cost</b></p> <p>a) Availability of communication services, access centres and networked computers</p> <p>b) Existence of effective competition among communication and information services providers</p> <p>c) Affordability and reliability of network access, including the cost of service (against per capita/average wage)</p> <p>d) Reliability of electrical supply for e-Business-critical operations</p> <p>e) Existence of any incubator facilities/IT Parks</p>	<p><i>Cable &amp; Wireless (Bartel) is the monopoly telecom provider. Fibre ring round island and alternative connectivity with satellite and undersea cable. Fairly high PC penetration, 27,600 Internet connections and several Internet kiosks.</i></p> <p><i>Negotiations for liberalising monopoly still on-going but expected opening of domestic market soon. Presently 6 ISPs – all using Cable &amp; Wireless gateway.</i></p> <p><i>Internet prices falling and 56K unlimited now at B\$87 (US 44). (Against avg. wage of B\$ 3000-4000 p.m.). Lease 64K at B\$1660, 128K at B\$3040 and T-1 at B\$24,760(plus 1600 installation).</i></p> <p><i>Fairly stable but cost an issue.</i></p> <p><i>Not at the moment but planned.</i></p>
<p><b>2) Policy Framework: E-Leadership and Participation</b></p> <p>a) Is E-Readiness a national priority</p> <p>b) Is there a national IT/E-Commerce plan or strategy existing</p> <p>c) Is there an agency leading the initiative</p>	<p><i>Important but not a 'national' priority.</i></p> <p><i>Policy and strategy under formulation</i></p> <p><i>Ministry of Commerce, as per Cabinet decision.</i></p>

<p>d) Progress with e-Government and promotion of participation of citizens</p> <p>e) Digitization of trade infrastructure and procedures</p> <p>f) Partnerships between industry and government to improve E-Readiness</p>	<p><i>IT in government under implementation not e-Government initiatives as yet.</i></p> <p><i>Customs has ASACUDA and a scheme for duty free shops that itself helps pay for Customs computerisation. EDI in trade infrastructure not there.</i></p> <p><i>Consultation more through surveys.</i></p>
<p><b>3) Legal Framework: Security and privacy</b></p> <p>a) Legal support for e-Commerce transactions</p> <p>b) Strength of legal protections for processing and storage of networked information</p> <p>c) Strength and effectiveness of the legal and regulatory framework to address and prosecute cyber crimes, authorize digital signatures, and enable public key infrastructures etc.</p> <p>d) progress in protecting intellectual property rights.</p> <p>e) Measures of consumer protection and extent of efforts to protect privacy.</p>	<p><i>An Electronic Transactions Act, 2001 promulgated.</i></p> <p><i>Computer Misuse Bill also planned.</i></p> <p><i>The above Act provides for a certification authority which is still to come about. Capacity building to address in cyber crimes required.</i></p> <p><i>Good.</i></p> <p><i>A draft that addresses Barbadian to Barbadian Internet transactions not trans-border, under consideration.</i></p>
<p><b>4) Human capacity framework: E-enabled Human Capital</b></p> <p>a) Availability of e-professional for e-business</p> <p>b) Skills and efficiency of the workforce</p> <p>c) Levels of IT teaching in the education system,</p>	<p><i>There is a felt shortage on account of which the EduTech programme initiated. Fairly high.</i></p> <p><i>Full computerisation of school network planned. Presently IT teaching in schools</i></p>

<p>including private initiatives</p> <p>d) E-literacy amongst citizens</p> <p>e) Is the institutional framework fostering culture of local creativity and information sharing within the society</p>	<p><i>and Community college limited though high demand. UWI does produce some 150 computer science graduates.</i></p> <p><i>Rising fast.</i></p> <p><i>There is conscious attempt to do so.</i></p>
<p><b>5) E-Business Environment: Enabling seamless E-Commerce</b></p> <p>a) Present status of IT industry and IT in industry</p> <p>b) Existence of e-enabled financial framework to support electronic transactions</p> <p>c) Availability of venture capital for e-Business</p> <p>d) Transparency and predictability of regulatory implementation, openness of government, rule of law, etc.</p> <p>e) Climate and policy for participation by foreign investors in ICT businesses</p>	<p><i>IT sector is growing and in local industry IT usage is growing too. Mostly though use only Internet not integrated IT in their businesses.</i></p> <p><i>Not yet but banks have been asked to prepare for it.</i></p> <p><i>No</i></p> <p><i>Very open and perceptibly fair business environment.</i></p> <p><i>Specific policy exists. Also 16 agencies involved in Investment are being put on-line to facilitate investors.</i></p>
<p><b>6) The International and Regional framework</b></p> <p>a) Negotiating stand on E-Commerce at the WTO/FTAA</p> <p>b) . Regional and sub-regional collaboration</p>	<p><i>Depend on RNM.</i></p> <p><i>Suggested regional initiatives for financial transaction security/PKI etc. as well as for post-graduate IT education.</i></p>

**Country framework analysis for CARICOM States on their E-Readiness for E-Business**  
**(June/July 2001)**

**Member State: BELIZE**

Basic Data:

Population: 222,020 (1996)  
 Area: 22,963  
 GDP: EC\$ 1643.4 mn (1996)  
 GDP Per Capita: EC\$ 6,909 (1993)

<p><b>1) Infrastructural framework: Connectivity and cost</b></p> <p>a) Availability of communication services, access centres and networked computers</p> <p>b) Existence of effective competition among communication and information services providers</p> <p>c) Affordability and reliability of network access, including the cost of service (against per capita/average wage)</p> <p>d) Reliability of electrical supply for e-Business-critical operations</p> <p>e) Existence of any incubator facilities/IT Parks</p>	<p><i>Fairly reliable telecom and Internet service. Internet dial-up connections are 6000 and leased circuits 35 to corporate and institutions.</i></p> <p><i>BTL a private company, has monopoly up till 2003. In trade free zone another private company provides access to corporates located in the zone.</i></p> <p><i>Dial-up Internet is expensive at B\$400 for 100 hrs. (against avg. wage of B\$12-1500).</i></p> <p><i>Total Dial-up connections are 6000 and leased circuits 35.</i></p> <p><i>Okay</i></p> <p><i>A private Free Trade Zone, concentrating mainly on Internet gaming has come up.</i></p>
<p><b>2) Policy Framework: E-Leadership and Participation</b></p> <p>a) Is E-Readiness a national priority</p> <p>b) Is there a national IT/E-Commerce plan or strategy existing</p> <p>c) Is there an agency leading the initiative</p> <p>d) Progress with e-Government and promotion of</p>	<p><i>No</i></p> <p><i>No</i></p> <p><i>No</i></p> <p><i>Different departments are chalking out plans to offer services on-line but this is</i></p>

<p>participation of citizens</p> <p>e) Digitization of trade infrastructure and procedures</p> <p>f) Partnerships between industry and government to improve E-Readiness</p>	<p><i>not really being co-ordinated.</i></p> <p><i>ASACUDA in Customs dept. exists but with no other links to trade transactions. Some ad hoc meetings held from time to time but no structured consultations.</i></p>
<p><b>3) Legal Framework: Security and privacy</b></p> <p>a) Legal support for e-Commerce transactions</p> <p>b) Strength of legal protections for processing and storage of networked information</p> <p>c) Strength and effectiveness of the legal and regulatory framework to address and prosecute cyber crimes, authorize digital signatures, and enable public key infrastructures etc.</p> <p>d) progress in protecting intellectual property rights.</p> <p>e) Measures of consumer protection and extent of efforts to protect privacy.</p>	<p><i>No legislation exists as of date.</i></p> <p><i>Nil</i></p> <p><i>Does not exist</i></p> <p><i>Patents and Trademarks Acts available.</i></p> <p><i>Public utilities commission and consumer protection law in place but does not cover Internet.</i></p>
<p><b>4) Human capacity framework: E-enabled Human Capital</b></p> <p>a) Availability of e-professional for e-business</p> <p>b) Skills and efficiency of the workforce</p> <p>c) Levels of IT teaching in the education system, including private initiatives</p>	<p><i>Severe shortage. Engineers from US need to come in for networking and technical support.</i></p> <p><i>Most of govt. and corporate staff already computer literate</i></p> <p><i>Local university just started Associate and degree course in computer science with present output of just 15. Some basic computers in schools and some private</i></p>

<p>d) E-literacy amongst citizens</p> <p>e) Is the institutional framework fostering culture of local creativity and information sharing within the society</p>	<p><i>computer training available.</i></p> <p><i>Very low at the moment.</i></p> <p><i>No. Corporate culture very secretive. Companies even hesitate to computerise their pay-roll!</i></p>
<p><b>5) E-Business Environment: Enabling seamless E-Commerce</b></p> <p>a) Present status of IT industry and IT in industry</p> <p>b) Existence of e-enabled financial framework to support electronic transactions</p> <p>c) Availability of venture capital for e-Business</p> <p>d) Transparency and predictability of regulatory implementation, openness of government, rule of law, etc.</p> <p>e) Climate and policy for participation by foreign investors in ICT businesses</p>	<p><i>Just 3 companies offering some IT services for local market. Several Internet gaming companies in privately run Free Trade Zone.</i></p> <p><i>Does not exist locally though use of credit cards to buy over web quite common.</i></p> <p><i>Not available. Even existing interest rates are relatively very high at 18%.</i></p> <p><i>Transparency is an issue. Regulations and laws exist but enforcement and audit capabilities need strengthening.</i></p> <p><i>Supportive.</i></p>
<p><b>6) The International and Regional framework</b></p> <p>a) Negotiating stand on E-Commerce at the WTO/ FTAA</p> <p>b) Regional and sub-regional collaboration</p>	<p><i>Not formulated.</i></p> <p><i>Belize being somewhat away from rest of Caribbean sees itself more accessible to North and Central America.</i></p>

**Country framework analysis for CARICOM States on their E-Readiness for E-Business**  
**(June/July 2001)**

**Member State: DOMINICA**

Basic Data:

Population: 70,000  
 Area: 750 sq. kms  
 GDP: US\$ 280m  
 Per Capita: US\$ 1040 (1997)

<p><b>1) Infrastructural framework: Connectivity and cost</b></p> <p>a) Availability of communication services, access centres and networked computers</p> <p>b) Existence of effective competition among communication and information services providers</p> <p>c) Affordability and reliability of network access, including the cost of service (against per capita/average wage)</p> <p>d) Reliability of electrical supply for e-Business-critical operations</p> <p>e) Existence of any incubator facilities/IT Parks</p>	<p><i>Very good telecommunications network with fibre covering all populated centres. Internet subscribers are 3500.</i></p> <p><i>Second ISP (other than the monopoly Cable &amp; Wireless) since 1997 and today after much legal battle, well and strong.</i></p> <p><i>Probably one of the cheapest services available. Dial-up 56Kunlimited at EC\$5, against avg. wage at EC\$ 2000p.m.</i></p> <p><i>Power from the private monopoly provider is an issue for reliability and cost.</i></p> <p><i>Not yet but planned.</i></p>
<p><b>2) Policy Framework: E-Leadership and Participation</b></p> <p>a) Is E-Readiness a national priority</p> <p>b) Is there a national IT/E-Commerce plan or strategy existing</p> <p>c) Is there an agency leading the initiative</p>	<p><i>Recognised to be important but not yet a national priority.</i></p> <p><i>Not yet formalised</i></p> <p><i>Ministry of Communications (with Telecom Advisor as focal point). An Inter-ministerial committee for co-ordination</i></p>

<p>d) Progress with e-Government and promotion of participation of citizens</p> <p>e) Digitization of trade infrastructure and procedures</p> <p>f) Partnerships between industry and government to improve E-Readiness</p>	<p><i>also exists</i></p> <p><i>Some departments computerising and establishing LANs. Efforts need coordination.</i></p> <p><i>Not available</i></p> <p><i>Not formal but improving.</i></p>
<p><b>3) Legal Framework: Security and privacy</b></p> <p>a) Legal support for e-Commerce transactions</p> <p>b) Strength of legal protections for processing and storage of networked information</p> <p>c) Strength and effectiveness of the legal and regulatory framework to address and prosecute cyber crimes, authorize digital signatures, and enable public key infrastructures etc.</p> <p>d) progress in protecting intellectual property rights.</p> <p>e) Measures of consumer protection and extent of efforts to protect privacy.</p>	<p><i>Not available</i></p> <p><i>Not available</i></p> <p><i>Not available yet. Propose it to be on regional basis.</i></p> <p><i>Trademark and patent legislation proposed to be updated</i></p> <p><i>Not available yet.</i></p>
<p><b>4) Human capacity framework: E-enabled Human Capital</b></p> <p>a) Availability of e-professional for e-business</p> <p>b) Skills and efficiency of the workforce</p> <p>c) Levels of IT teaching in the education system,</p>	<p><i>Very few available.</i></p> <p><i>Fair.</i></p> <p><i>Only school level and Community college basic computer courses. Education dept</i></p>



<p>including private initiatives</p> <p>d) E-literacy amongst citizens</p> <p>e) Is the institutional framework fostering culture of local creativity and information sharing within the society</p>	<p><i>working on increasing both quantity and quality of IT teaching. Not very high yet.</i></p> <p><i>Not in any organised fashion.</i></p>
<p><b>5) E-Business Environment: Enabling seamless E-Commerce</b></p> <p>a) Present status of IT industry and IT in industry</p> <p>b) Existence of e-enabled financial framework to support electronic transactions</p> <p>c) Availability of venture capital for e-Business</p> <p>d) Transparency and predictability of regulatory implementation, openness of government, rule of law, etc.</p> <p>e) Climate and policy for participation by foreign investors in ICT businesses</p>	<p><i>Very few IT companies and not much of IT in traditional businesses. Does not exist.</i></p> <p><i>Not available. (AID Bank did attempt to offer but unsuccessfully) Cost of capital high.</i></p> <p><i>Fairly okay.</i></p> <p><i>Encouraged</i></p>
<p><b>6) The International and Regional framework</b></p> <p>a) Negotiating stand on E-Commerce at the WTO, FTAA etc.</p> <p>b) Regional and sub-regional collaboration</p>	<p><i>Still under study and rely on RNM.</i></p>

**Country framework analysis for CARICOM States on their E-Readiness for E-Business**  
**(June/July 2001)**

**Member State: GRENADA**

Basic Data:

Population:	98,600 (1996)
Area:	345 Sq Km
GDP:	EC\$791.1 (1996)
GDP Per Capita:	EC\$7,216 (1994)

<p><b>1) Infrastructural framework: Connectivity and cost</b></p> <p>a) Availability of communication services, access centres and networked computers</p> <p>b) Existence of effective competition among communication and information services providers</p> <p>c) Affordability and reliability of network access, including the cost of service (against per capita/average wage)</p> <p>d) Reliability of electrical supply for e-Business-critical operations</p> <p>e) Existence of any incubator facilities/IT Parks</p>	<p><i>Services and access centres are available but bandwidth is a major issue. There are presently 3200 Internet connections and 50 leased circuits.</i></p> <p><i>Presently there is only one ISP as the process of liberalisation of the sector as per the OECS agreement with Cable &amp; Wireless is still to be made operational. 56K dial-up unlimited is EC\$120 (against Avg. wage EC\$1500-2000). Lease line 256K is US\$30,000!</i></p> <p><i>Okay but expensive.</i></p> <p><i>None at the moment but GIDC planning an IT Park over the next two years.</i></p>
<p><b>2) Policy Framework: E-Leadership and Participation</b></p> <p>a) Is E-Readiness a national priority</p> <p>b) Is there a national IT/E-Commerce plan or strategy existing</p> <p>c) Is there an agency leading the initiative</p>	<p><i>Yes</i></p> <p><i>Draft has been finalized and expect to announce it by October 2001.</i></p> <p><i>PM's Ministry leading initiative and implementing agency will be notified with policy.</i></p>

<ul style="list-style-type: none"> <li>d) Progress with e-Government and promotion of participation of citizens</li> <li>e) Digitization of trade infrastructure and procedures</li> <li>f) Partnerships between industry and government to improve E-Readiness</li> </ul>	<p><i>Presently a project to establish a government WAN is on-going. This will be used for e-Government.</i></p> <p><i>Customs has ASACUDA but no EDI.</i></p> <p><i>An effective dialogue with the private sector is on-going.</i></p>
<p><b>3) Legal Framework: Security and privacy</b></p> <ul style="list-style-type: none"> <li>a) Legal support for e-Commerce transactions</li> <li>b) Strength of legal protections for processing and storage of networked information</li> <li>c) Strength and effectiveness of the legal and regulatory framework to address and prosecute cyber crimes, authorize digital signatures, and enable public key infrastructures etc.</li> <li>d) progress in protecting intellectual property rights.</li> <li>e) Measures of consumer protection and extent of efforts to protect privacy.</li> </ul>	<p><i>Not yet but will be part of the policy/strategy.</i></p> <p><i>Not available.</i></p> <p><i>Not available.</i></p> <p><i>Existing IPR laws need to made compatible with WIPO recommendations.</i></p> <p><i>None available.</i></p>
<p><b>4) Human capacity framework: E-enabled Human Capital</b></p> <ul style="list-style-type: none"> <li>a) Availability of e-professional for e-business</li> <li>b) Skills and efficiency of the workforce</li> </ul>	<p><i>Today available as demand not high.</i></p> <p><i>Easily trainable.</i></p>

<p>c) Levels of IT teaching in the education system, including private initiatives</p> <p>d) E-literacy amongst citizens</p> <p>e) Is the institutional framework fostering culture of local creativity and information sharing within the society</p>	<p><i>Very little IT in public sector but many private initiatives on.</i></p> <p><i>Growing.</i></p> <p><i>Educational system does not foster creativity and traditional business imbued with secrecy.</i></p>
<p><b>5) E-Business Environment: Enabling seamless E-Commerce</b></p> <p>a) Present status of IT industry and IT in industry</p> <p>b) Existence of e-enabled financial framework to support electronic transactions</p> <p>c) Availability of venture capital for e-Business</p> <p>d) Transparency and predictability of regulatory implementation, openness of government, rule of law, etc.</p> <p>e) Climate and policy for participation by foreign investors in ICT businesses</p>	<p><i>Local IT industry is small but growing. Existing industry is quite computerized and using the Internet but very few have IT integrated systems or their own websites. Merchant accounts for credit card transactions possible.</i></p> <p><i>Not available. Capital scarce and interest rate 11.5 percent. Reasonably good environment though some concerns about transparency.</i></p> <p><i>Policy of encouragement with a Fiscal Incentives Act in place in which ICT sector will be included.</i></p>
<p><b>6) The International and Regional framework</b></p> <p>a) Negotiating stand on E-Commerce at the WTO/FTAA.</p> <p>b) Regional and sub-regional collaboration</p>	<p><i>Will depend on OECS and RNM recommendations. Recommend CARICOM should help create awareness, OECS should expedite ICT policy recommendations (though see no need to await for a formal policy from them).</i></p>

**Country framework analysis for CARICOM States on their E-Readiness for E-Business**  
**(June/July 2001)**

**Member State: GUYANA**

Basic Data:

Population:	770,139 (1996)
Area:	214,970 Sq Km
GDP:	EC\$ 1,916 mn (1996)
GDP Per Capita:	EC\$ 2,003 (1994)

<p><b>1) Infrastructural framework: Connectivity and cost</b></p> <p>a) Availability of communication services, access centres and networked computers</p> <p>b) Existence of effective competition among communication and information services providers</p> <p>c) Affordability and reliability of network access, including the cost of service (against per capita/average wage)</p> <p>d) Reliability of electrical supply for e-Business-critical operations</p> <p>e) Existence of any incubator facilities/IT Parks</p>	<p><i>Fairly good telecommunication services with marginal spread of access centres in urban areas. Much higher demand than availability of Internet. Total Internet connections about 3000.</i></p> <p><i>Telecommunications under a monopoly. 5 ISPs operational with access through single gateway (one independent satellite based service)</i></p> <p><i>Complaints of slow and unstable Internet access at high cost compared to standard of living.</i>  <i>(Lease line 56/64(GT&amp;T); (iNet) US\$975 Dial-up 56k G\$3000for 40hrs to 6200 unlimited)</i></p> <p><i>Okay generally but problem of fluctuations which are dangerous for IT equipment.</i></p> <p><i>Nil</i></p>
<p><b>2) Policy Framework: E-Leadership and Participation</b></p> <p>a) Is E-Readiness a national priority</p> <p>b) Is there a national IT/E-Commerce plan or strategy</p>	<p><i>No</i></p> <p><i>No, though a draft IT policy is under consideration</i></p>

existing	
c) Is there an agency leading the initiative	<i>Not yet identified.</i>
d) Progress with e-Government and promotion of participation of citizens	<i>Nil (there are some information type websites of some of the govt. agencies)</i>
e) Digitization of trade infrastructure and procedures	<i>ASCUDA for data compilation at Customs HQs without link to port/airport or trade agencies.</i>
f) Partnerships between industry and government to improve E-Readiness	<i>No such initiative nor any structured consultation between stakeholders There is however a committee for ICTs that has private sector participation..</i>
<b>3) Legal Framework: Security and privacy</b>	
a) Legal support for e-Commerce transactions	<i>Not available, nor under planning yet</i>
b) Strength of legal protections for processing and storage of networked information	<i>Nil</i>
c) Strength and effectiveness of the legal and regulatory framework to address and prosecute cyber crimes, authorize digital signatures, and enable public key infrastructures etc.	<i>Not available</i>
d) progress in protecting intellectual property rights.	<i>Need for more stringent enforcement</i>
e) Measures of consumer protection and extent of efforts to protect privacy.	<i>Agency for consumer protection and Public Utilities Commission set up but no provisions for Internet.</i>
<b>4) Human capacity framework: E-enabled Human Capital</b>	
a) Availability of e-professional for e-business	<i>IT graduates coming out with lack of sufficient employment opportunities for the</i>

<p>b) Skills and efficiency of the workforce</p> <p>c) Levels of IT teaching in the education system including private initiatives</p> <p>d) E-literacy amongst citizens</p> <p>e) Is the institutional framework fostering culture of local creativity and information sharing within the society</p>	<p><i>present. Many migrate abroad.</i></p> <p><i>English speaking work-force with spreading usage of computers in public and private sectors.</i></p> <p><i>Reasonably good. Private teaching shops coming up.</i></p> <p><i>Presently very low</i></p> <p><i>Not effectively. Local culture creative but conservative background, especially in business.</i></p>
<p><b>5) E-Business Environment: Enabling seamless E-Commerce</b></p> <p>a) Present status of IT industry and IT in industry</p> <p>b) Existence of e-enabled financial framework to support electronic transactions</p> <p>c) Availability of venture capital for e-Business</p> <p>d) Transparency and predictability of regulatory implementation, openness of government, rule of law, etc.</p> <p>e) Climate and policy for participation by foreign investors in ICT businesses</p>	<p><i>Some IT companies operational with low level of IT in traditional enterprises</i></p> <p><i>Not available</i></p> <p><i>Credit card culture also barely exists.</i></p> <p><i>Not available</i></p> <p><i>Much room for improvement as perceived by private sector</i></p> <p><i>No specific notified policy but foreign investment encouraged</i></p>

<b>6) The International and Regional framework</b>  a) Negotiating stand on E-Commerce at the WTO, FTAA etc.  b) Regional and sub-regional collaboration	<i>Still under consideration</i>  <i>Recommend CARICOM level network.</i>
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**Country framework analysis for CARICOM States on their E-Readiness for E-Business**  
**(June/July 2001)**

**Member State: Jamaica**

Basic Data:

Population:	2,515,500 (1996)
Area:	10,991 Sq Km
GDP:	EC\$ 14,786.5 mn (1996)
GDP Per Capita:	EC\$ 4,160 (1994)

<p><b>1) Infrastructural framework: Connectivity and cost</b></p> <p>a) Availability of communication services, access centres and networked computers</p> <p>b) Existence of effective competition among communication and information services providers</p> <p>c) Affordability and reliability of network access, including the cost of service (against per capita/average wage)</p> <p>d) Reliability of electrical supply for e-Business-critical operations</p> <p>e) Existence of any incubator facilities/IT Parks</p>	<p><i>High quality digital telecom network. Fibre ring round island connecting all important locations. Several access centres and networks. Estimated 3% population has Internet access. The total pool is estimated at 70,000.</i></p> <p><i>Govt. have been able to negotiate a phased liberalisation of the telecom sector with monopoly provider Cable and Wireless. Today some 40 ISPs but most having to use C&amp;W gateway.</i></p> <p><i>Dial-up 56K at US\$40 plus per minute phone charge to lease 128K at \$1500 and T1 at \$8750 make it rather expensive.</i></p> <p><i>Fairly reliable.</i></p> <p><i>Jamaica Digiport International is a Free Trade Zone that provides network services to the US.</i></p>
<p><b>2) Policy Framework: E-Leadership and Participation</b></p> <p>a) Is E-Readiness a national priority</p> <p>b) Is there a national IT/E-Commerce plan or strategy</p>	<p><i>Yes</i></p> <p><i>National IT strategy already exists and E-Commerce policy is under finalisation.</i></p>

<p>existing</p> <p>c) Is there an agency leading the initiative</p> <p>d) Progress with e-Government and promotion of participation of citizens</p> <p>e) Digitization of trade infrastructure and procedures</p> <p>f) Partnerships between industry and government to improve E-Readiness</p>	<p><i>Ministry of Industry, Commerce and Technology leading it along with JAMPRO, though the IT implementing agency still to be decided.</i></p> <p><i>Several government initiatives (Registry, Inland Revenue, accounts etc.) are under consideration and implementation but are yet to be coordinated.</i></p> <p><i>Other than ASACUDA in the Customs dept. no other initiatives in place.</i></p> <p><i>Not regulated.</i></p>
<p><b>3) Legal Framework: Security and privacy</b></p> <p>a) Legal support for e-Commerce transactions</p> <p>b) Strength of legal protections for processing and storage of networked information</p> <p>c) Strength and effectiveness of the legal and regulatory framework to address and prosecute cyber crimes, authorize digital signatures, and enable public key infrastructures etc.</p> <p>d) progress in protecting intellectual property rights.</p> <p>e) Measures of consumer protection and extent of efforts to protect privacy.</p>	<p><i>Presently does not exist though preliminary consideration of possible legal initiatives has taken place. As the process is long and many other Legislative Bills are in line for consideration, the process may be very long.</i></p> <p><i>Does not exist presently.</i></p> <p><i>As above.</i></p> <p><i>Certification is seen as a major issue including for social e-Commerce initiatives such as e-Health.</i></p> <p><i>Fairly advanced.</i></p> <p><i>Not yet available for internet.</i></p>

<p><b>4) Human capacity framework: E-enabled Human Capital</b></p> <ul style="list-style-type: none"> <li>a) Availability of e-professional for e-business</li> <li>b) Skills and efficiency of the workforce</li> <li>c) Levels of IT teaching in the education system including private initiatives</li> <li>d) E-literacy amongst citizens</li> <li>e) Is the institutional framework fostering culture of local creativity and information sharing within the society</li> </ul>	<p><i>Today the availability is there mainly because E-Business has not developed to its potential.</i></p> <p><i>Fairly high</i></p> <p><i>Besides IT in secondary schools and the University, the Caribbean Institute of Technology (a joint sector initiative) provide IT education and training across a wide spectrum, as do several private teaching shops.</i></p> <p><i>Still very low.</i></p> <p><i>Certainly a high level of local creativity in the music and entertainment industry, for example, but a lack of information sharing particularly in the corporate sector.</i></p>
<p><b>5) E-Business Environment: Enabling seamless E-Commerce</b></p> <ul style="list-style-type: none"> <li>a) Present status of IT industry and IT in industry</li> <li>b) Existence of e-enabled financial framework to support electronic transactions</li> <li>c) Availability of venture capital for e-Business</li> <li>d) Transparency and predictability of regulatory implementation, openness of government, rule of law, etc.</li> <li>e) Climate and policy for participation by foreign investors in ICT businesses</li> </ul>	<p><i>Fairly developed IT sector and wide-spread usage of computers in business. Presently not there but coming into place.</i></p> <p><i>Capital for IT start-ups continues to be an issue.</i></p> <p><i>A feeling amongst private sector for greater implementation of existing regulation.</i></p> <p><i>Clear set of incentives available.</i></p>

<b>6) The International and Regional framework</b>  a) Negotiating stand on E-Commerce at the WTO, FTAA etc.          b) Regional and sub-regional collaboration	<i>Jamaica is one of the most pro-active in the region on its positioning at such fora but has not yet decided on a final position. At the CARICOM level could agree to a duty free environment and at the international level to an extension of the moratorium for a limited period.</i>   <i>Sees the advantages of collaborative initiatives as above.</i>

**Country framework analysis for CARICOM States on their E-Readiness for E-Business**  
**(June/July 2001)**

**Member State: MONTSERRAT**

Basic Data:

Population;	10,608 (1996) - 5500-6000 (estimated today)
Area:	103 Sq. Km
GDP:	EC\$135.5 mn (1996)
GDP Per Capita:	EC\$ 15,304 (1993)

<p><b>1) Infrastructural framework: Connectivity and cost</b></p> <p>a) Availability of communication services, access centres and networked computers</p> <p>b) Existence of effective competition among communication and information services providers</p> <p>c) Affordability and reliability of network access, including the cost of service (against per capita/average wage)</p> <p>d) Reliability of electrical supply for e-Business-critical operations</p> <p>e) Existence of any incubator facilities/IT Parks</p>	<p><i>Fairly good considering the size and background of economy. Only one ISP (Cable &amp; Wireless, and a couple of Internet cafes.</i></p> <p><i>None.</i></p> <p><i>Dial up 56K @ EC\$ 129. Lease 64K for EC\$ 2400 per month, 128 for EC\$4420 and T-1 at 40,000. Total internet connections are 500.</i></p> <p><i>Okay</i></p> <p><i>None</i></p>
<p><b>2) Policy Framework: E-Leadership and Participation</b></p> <p>a) Is E-Readiness a national priority</p> <p>b) Is there a national IT/E-Commerce plan or strategy existing</p> <p>c) Is there an agency leading the initiative</p>	<p><i>Yes.</i></p> <p><i>No.</i></p> <p><i>The Development Unit along with the Govt. Information Systems.</i></p>

<p>d) Progress with e-Government and promotion of participation of citizens</p> <p>e) Digitization of trade infrastructure and procedures</p> <p>f) Partnerships between industry and government to improve E-Readiness</p>	<p><i>Nil</i></p> <p><i>ASACUDA used by Customs.</i></p> <p><i>No cohesive effort to involve private sector.</i></p>
<p><b>3) Legal Framework: Security and privacy</b></p> <p>a) Legal support for e-Commerce transactions</p> <p>b) Strength of legal protections for processing and storage of networked information</p> <p>c) Strength and effectiveness of the legal and regulatory framework to address and prosecute cyber crimes, authorize digital signatures, and enable public key infrastructures etc.</p> <p>d) progress in protecting intellectual property rights.</p> <p>e) Measures of consumer protection and extent of efforts to protect privacy.</p>	<p><i>Nil</i></p> <p><i>Not available.</i></p> <p><i>Nil</i></p> <p><i>Trademarks and copyrights legislation in place.</i></p> <p><i>Needs to be updated.</i></p>
<p><b>4) Human capacity framework: E-enabled Human Capital</b></p> <p>a) Availability of e-professional for e-business</p> <p>b) Skills and efficiency of the workforce</p> <p>c) Levels of IT teaching in the education system, including private initiatives</p>	<p><i>Very severe shortage</i></p> <p><i>Computerisation common and skills could be easily upgraded with training.</i></p> <p><i>Computerisation introduced at secondary level.</i></p>

d) E-literacy amongst citizens	<i>Presently limited</i>
e) Is the institutional framework fostering culture of local creativity and information sharing within the society	<i>No conscious initiative.</i>
<b>5) E-Business Environment: Enabling seamless E-Commerce</b>	
a) Present status of IT industry and IT in industry	<i>Virtually non-existent.</i>
b) Existence of e-enabled financial framework to support electronic transactions	<i>Not available.</i>
c) Availability of venture capital for e-Business	<i>No</i>
d) Transparency and predictability of regulatory implementation, openness of government, rule of law, etc.	<i>Very good environment.</i>
e) Climate and policy for participation by foreign investors in ICT businesses	<i>Encouraged.</i>
<b>6) The International and Regional framework</b>	
a) Negotiating stand on E-Commerce at the WTO, FTAA etc.	<i>As a British territory, such issues are handled by UK.</i>
b) Regional and sub-regional collaboration	<i>Being a non-independent member of the region did not join the OECS initiative on telecom reform.</i>

**Country framework analysis for CARICOM States on their E-Readiness for E-Business**  
**(June/July 2001)**

**Member State: ST. VINCENT & THE GRENADINES**

Basic Data:

Population:	111,214 (1996)
Area:	388 Sq Km
GDP:	EC\$708.9 mn (1995)
GDP Per Capita:	EC\$5,964 (1993)

<p><b>1) Infrastructural framework: Connectivity and cost</b></p> <p>a) Availability of communication services, access centres and networked computers</p> <p>b) Existence of effective competition among communication and information services providers</p> <p>c) Affordability and reliability of network access, including the cost of service (against per capita/average wage)</p> <p>d) Reliability of electrical supply for e-Business-critical operations</p> <p>e) Existence of any incubator facilities/IT Parks</p>	<p><i>Good network, fibre mostly with link to ECFS. Grenadines linked by microwave. PC penetration of around 3-4000. Internet connections 2700.</i></p> <p><i>Sector not yet opened up.</i></p> <p><i>56K unlimited at EC\$129(plus 1c/min).(Agnst avg. wage ). There are some doubts about reliability. 64K EC3200 monthly, and T-1 at US\$14,000.</i></p> <p><i>Okay</i></p> <p><i>None yet but planned</i></p>
<p><b>2) Policy Framework: E-Leadership and Participation</b></p> <p>a) Is E-Readiness a national priority</p> <p>b) Is there a national IT/E-Commerce plan or strategy existing</p> <p>c) Is there an agency leading the initiative</p>	<p><i>Appears to be a priority as per several statements.</i></p> <p><i>Not yet. Awaiting ICT strategy from OECS.</i></p> <p><i>No formal decision but DEVCO leading effort.</i></p>



<p>d) Progress with e-Government and promotion of participation of citizens</p> <p>e) Digitization of trade infrastructure and procedures</p> <p>f) Partnerships between industry and government to improve E-Readiness</p>	<p><i>IT projects in Treasury and Inland Revenue. No e-Government planned yet.</i></p> <p><i>Customs with ASACUDA but not linked to customers or trade network.</i></p> <p><i>No specific consultation re. IT or e-Commerce.</i></p>
<p><b>3) Legal Framework: Security and privacy</b></p> <p>a) Legal support for e-Commerce transactions</p> <p>b) Strength of legal protections for processing and storage of networked information</p> <p>c) Strength and effectiveness of the legal and regulatory framework to address and prosecute cyber crimes, authorize digital signatures, and enable public key infrastructures etc.</p> <p>d) progress in protecting intellectual property rights.</p> <p>e) Measures of consumer protection and extent of efforts to protect privacy.</p>	<p><i>Not available</i></p> <p><i>Nil</i></p> <p><i>Not available</i></p> <p><i>Old laws.</i></p> <p><i>Nil</i></p>
<p><b>4) Human capacity framework: E-enabled Human Capital</b></p> <p>a) Availability of e-professional for e-business</p> <p>b) Skills and efficiency of the workforce</p> <p>c) Levels of IT teaching in the education system, including private initiatives</p>	<p><i>Severe shortage.</i></p> <p><i>Computer friendly and could be trained.</i></p> <p><i>Very little IT teaching or training available in public or private sector.</i></p>

d) E-literacy amongst citizens	<i>Low</i>
e) Is the institutional framework fostering culture of local creativity and information sharing within the society	<i>No such policy</i>
<b>5) E-Business Environment: Enabling seamless E-Commerce</b>	
a) Present status of IT industry and IT in industry	<i>Hardly any IT industry and IT in existing industry usually limited to some computer use and Internet access.</i>
b) Existence of e-enabled financial framework to support electronic transactions	<i>Not available.</i>
c) Availability of venture capital for e-Business	<i>Not available</i>
d) Transparency and predictability of regulatory implementation, openness of government, rule of law, etc.	<i>Fairly good.</i>
e) Climate and policy for participation by foreign investors in ICT businesses	<i>No documented policy but encouraged.</i>
<b>6) The International and Regional framework</b>	
a) Negotiating stand on E-Commerce at the WTO, FTAA etc.	<i>Depend on RNM</i>
b) Regional and sub-regional collaboration	<i>Expect assistance from OECS.</i>

**Country framework analysis for CARICOM States on their E-Readiness for E-Business**  
**(June/July 2001)**

**Member State: St. Kitts and NEVIS**

Basic Data:

Population:	43,530 (1995)
Area:	269 sq km
GDP:	EC\$ 667.3 mn (1996)
GDP Per Capita:	EC\$ 11,921 (1993)

<p><b>1) Infrastructural framework: Connectivity and cost</b></p> <p>a) Availability of communication services, access centres and networked computers</p> <p>b) Existence of effective competition among communication and information services providers</p> <p>c) Affordability and reliability of network access, including the cost of service (against per capita/average wage)</p> <p>d) Reliability of electrical supply for e-Business-critical operations</p> <p>e) Existence of any incubator facilities/IT Parks</p>	<p><i>Fairly high level of penetration and access. Double fibre ring around St. Kitts, and link to under fibre cable. Nevis via microwave.</i></p> <p><i>2 ISPs – Cable &amp; Wireless and The Cable.</i></p> <p><i>Competition has resulted in low Internet pricing- dial-up 56K unlimited at EC\$75 (with no phone charge for The Cable connection). Reliability and speed of The Cable connection very good. Total Internet connections are 3200 and growing. Lease lines (30 subscribers) 64K are upwards of EC\$2640.</i></p> <p><i>Good.</i></p> <p><i>Nil for the moment but an IT park to establish a call centre is under planning for Nevis.</i></p>
<p><b>2) Policy Framework: E-Leadership and Participation</b></p> <p>a) Is E-Readiness a national priority</p> <p>b) Is there a national IT/E-Commerce plan or strategy existing</p>	<p><i>E-Business a priority as per pronouncements in budget speech.</i></p> <p><i>Not yet</i></p>

<p>c) Is there an agency leading the initiative</p> <p>d) Progress with e-Government and promotion of participation of citizens</p> <p>e) Digitization of trade infrastructure and procedures</p> <p>f) Partnerships between industry and government to improve E-Readiness</p>	<p><i>Not clearly identified</i></p> <p><i>Very little though some moves towards computerisation and LANs in some departments.</i></p> <p><i>Only ASACUDA in Customs.</i></p> <p><i>Nothing formal or regular.</i></p>
<p><b>3) Legal Framework: Security and privacy</b></p> <p>a) Legal support for e-Commerce transactions</p> <p>b) Strength of legal protections for processing and storage of networked information</p> <p>c) Strength and effectiveness of the legal and regulatory framework to address and prosecute cyber crimes, authorize digital signatures, and enable public key infrastructures etc.</p> <p>d) progress in protecting intellectual property rights.</p> <p>e) Measures of consumer protection and extent of efforts to protect privacy.</p>	<p><i>Not available.</i></p> <p><i>Not available.</i></p> <p><i>Not available.</i></p> <p><i>Acts in place but updating to latest requirements proving to be difficult. Presently not available for Internet.</i></p>
<p><b>4) Human capacity framework: E-enabled Human Capital</b></p> <p>a) Availability of e-professional for e-business</p> <p>b) Skills and efficiency of the workforce</p> <p>c) Levels of IT teaching in the education system,</p>	<p><i>Availability fairly good in St. Kitts.</i></p> <p><i>Govt. and private sector office staff eminently trainable most computer literate. Computer labs established in schools. The one college at tertiary level has some 25</i></p>

<p>including private initiatives</p> <p>d) E-literacy amongst citizens</p> <p>e) Is the institutional framework fostering culture of local creativity and information sharing within the society</p>	<p><i>students doing IT education. Some private basic computer training being offered. Presently low but growing fast.</i></p> <p><i>Secrecy and non-sharing of information still traditional way of business. No institutional change underway.</i></p>
<p><b>5) E-Business Environment: Enabling seamless E-Commerce</b></p> <p>a) Present status of IT industry and IT in industry</p> <p>b) Existence of e-enabled financial framework to support electronic transactions</p> <p>c) Availability of venture capital for e-Business</p> <p>d) Transparency and predictability of regulatory implementation, openness of government, rule of law, etc.</p> <p>e) Climate and policy for participation by foreign investors in ICT businesses</p>	<p><i>Some IT services being run in St. Kitts including Internet gaming. Financial services also hosting services locally. Also most businesses computerised and using Internet for email and websites but not doing e-Commerce online transactions. Does not exist.</i></p> <p><i>Not available. Though availability of small loans for small businesses exists. Fairly good.</i></p> <p><i>Favourable.</i></p>
<p><b>6) The International and Regional framework</b></p> <p>a) Negotiating stand on E-Commerce at the WTO/FTAA .</p> <p>b) Regional and sub-regional collaboration</p>	<p><i>St. Kitts and Nevis will go along with the CARICOM position which is still under study. View is that since basically importing economy, implications of e-Commerce must be carefully considered.</i></p>

**Country framework analysis for CARICOM States on their E-Readiness for E-Business**  
**(June/July 2001)**

**Member State: ST. LUCIA**

Basic Data:

Population:	145,213 (1995)
Area:	616 sq. km
GDP:	EC\$ 1,555 mn. (1996)
GDP Per Capita:	EC\$ 9,596 (1993)

<p><b>1) Infrastructural framework: Connectivity and cost</b></p> <p>a) Availability of communication services, access centres and networked computers</p> <p>b) Existence of effective competition among communication and information services providers</p> <p>c) Affordability and reliability of network access, including the cost of service (against per capita/average wage)</p> <p>d) Reliability of electrical supply for e-Business-critical operations</p> <p>e) Existence of any incubator facilities/IT Parks</p>	<p><i>Good services but some concern about capacity.</i></p> <p><i>Though liberalisation process has started and applications for ISPs received, presently only Cable &amp; Wireless ISP.</i></p> <p><i>Dial-up 56K unlimited is EC\$129 plus 0.75c per access. Against EC\$ 2500-3000 as average wage. There are 4500 Internet connections. 64K lease is EC2400p.m. and T-1 at EC 18,000.</i></p> <p><i>Some concerns at stability and cost.</i></p> <p><i>None for the moment though a private sector initiative is under consideration.</i></p>
<p><b>2) Policy Framework: E-Leadership and Participation</b></p> <p>a) Is E-Readiness a national priority</p> <p>b) Is there a national IT/E-Commerce plan or strategy existing</p>	<p><i>Not yet</i></p> <p><i>A draft policy is under consideration.</i></p>

<p>c) Is there an agency leading the initiative</p> <p>d) Progress with e-Government and promotion of participation of citizens</p> <p>e) Digitization of trade infrastructure and procedures</p> <p>f) Partnerships between industry and government to improve E-Readiness</p>	<p><i>Some confusion exists in this matter.</i></p> <p><i>Though a government WAN exists it is not fully or effectively being utilised and there are no e-Government services for the moment though there is a committee looking into it.</i></p> <p><i>Customs has ASACUDA presently but no EDI.</i></p> <p><i>No structured consultation.</i></p>
<p><b>3) Legal Framework: Security and privacy</b></p> <p>a) Legal support for e-Commerce transactions</p> <p>b) Strength of legal protections for processing and storage of networked information</p> <p>c) Strength and effectiveness of the legal and regulatory framework to address and prosecute cyber crimes, authorize digital signatures, and enable public key infrastructures etc.</p> <p>d) progress in protecting intellectual property rights.</p> <p>e) Measures of consumer protection and extent of efforts to protect privacy.</p>	<p><i>Nil</i></p> <p><i>In the proposed draft Criminal Code, computer fraud including misuse of data, distribution etc. is being addressed</i></p> <p><i>Not available.</i></p> <p><i>Trademarks and Patents regulations in place.</i></p> <p><i>Consumer Protection regulation is under consideration.</i></p>
<p><b>4) Human capacity framework: E-enabled Human Capital</b></p> <p>a) Availability of e-professional for e-business</p> <p>b) Skills and efficiency of the workforce</p>	<p><i>Presently there is availability.</i></p> <p><i>Already high computer literacy in work force.</i></p>

<p>c) Levels of IT teaching in the education system, including private initiatives</p> <p>d) E-literacy amongst citizens</p> <p>e) Is the institutional framework fostering culture of local creativity and information sharing within the society</p>	<p><i>Same as in other OECS states with some more extensive level of private training.</i></p> <p><i>Estimated at 30% and rising.</i></p> <p><i>No policy towards this and therefore tradition of closed systems and secrecy in corporate culture especially continues.</i></p>
<p><b>5) E-Business Environment: Enabling seamless E-Commerce</b></p> <p>a) Present status of IT industry and IT in industry</p> <p>b) Existence of e-enabled financial framework to support electronic transactions</p> <p>c) Availability of venture capital for e-Business</p> <p>d) Transparency and predictability of regulatory implementation, openness of government, rule of law, etc.</p> <p>e) Climate and policy for participation by foreign investors in ICT businesses</p>	<p><i>Some good IT companies with good track-record in existence. Most established enterprises have high computerisation and using Internet and websites.</i></p> <p><i>Not available.</i></p> <p><i>Not available.</i></p> <p><i>Some issues of transparency raised by industry.</i></p> <p><i>Policy encourages investment.</i></p>
<p><b>6) The International and Regional framework</b></p> <p>a) Negotiating stand on E-Commerce at the WTO/FTAA</p> <p>b) Regional and sub-regional collaboration</p>	<p><i>Would depend on RNM.</i></p> <p><i>For cost efficiencies and economies of scale, regional and sub-regional collaboration encouraged.</i></p>



**Country framework analysis for CARICOM States on their E-Readiness for E-Business**  
**(June/July 2001)**

**Member State: SURINAME**

Basic Data:

Population: 408401 (1995)  
 Area: 163,820 Sq Km  
 GDP: EC\$1,154.7 mn  
 GDP Per Capita: EC\$8,881 (1993)

<p><b>1) Infrastructural framework: Connectivity and cost</b></p> <p>a) Availability of communication services, access centres and networked computers</p> <p>b) Existence of effective competition among communication and information services providers</p> <p>c) Affordability and reliability of network access, including the cost of service (against per capita/average wage)</p> <p>d) Reliability of electrical supply for e-Business-critical operations</p> <p>e) Existence of any incubator facilities/IT Parks</p>	<p><i>Telecom infrastructure still not countrywide. Availability is fairly good in urban areas but strong compliant from IT businesses re. Bandwidth. Internet dial-up connections are 5800.</i></p> <p><i>Telecom duopoly exists. 3 ISPs using satellite and fibre backbone.</i></p> <p><i>33.6K unlimited at US\$12 - 17.5(plus phone charge at US\$0.0175per min) (Avg. wage US\$4-600). Lease 64K from US\$120 to 175 monthly. 128K at US\$325 and no ADSL or T-1.</i></p> <p><i>Reliable but some instability and cost issues raised.</i></p> <p><i>Nil</i></p>
<p><b>2) Policy Framework: E-Leadership and Participation</b></p> <p>a) Is E-Readiness a national priority</p> <p>b) Is there a national IT/E-Commerce plan or strategy existing</p>	<p><i>Some talk of IT but not identified as national priority.</i></p> <p><i>No</i></p>

<p>c) Is there an agency leading the initiative</p> <p>d) Progress with e-Government and promotion of participation of citizens</p> <p>e) Digitization of trade infrastructure and procedures</p> <p>f) Partnerships between industry and government to improve E-Readiness</p>	<p><i>No</i></p> <p><i>Nil. Use of IT and email in government limited.</i></p> <p><i>ASACUDA established 6 years ago but no on-line access. Trade dept. also computerised but no link or access for public.</i></p> <p><i>Nil. Consultation itself limited.</i></p>
<p><b>3) Legal Framework: Security and privacy</b></p> <p>a) Legal support for e-Commerce transactions</p> <p>b) Strength of legal protections for processing and storage of networked information</p> <p>c) Strength and effectiveness of the legal and regulatory framework to address and prosecute cyber crimes, authorize digital signatures, and enable public key infrastructures etc.</p> <p>d) progress in protecting intellectual property rights.</p> <p>e) Measures of consumer protection and extent of efforts to protect privacy.</p>	<p><i>Nil</i></p> <p><i>Not available</i></p> <p><i>Nil</i></p> <p><i>Trademark/Copyright laws date from 1912. Not updated yet.</i></p> <p><i>Nil.</i></p>
<p><b>4) Human capacity framework: E-enabled Human Capital</b></p> <p>a) Availability of e-professional for e-business</p> <p>b) Skills and efficiency of the workforce</p>	<p><i>Shortage because trained persons leave.</i></p> <p><i>Could be trained</i></p>

<ul style="list-style-type: none"> <li>c) Levels of IT teaching in the education system, including private initiatives</li> <li>d) E-literacy amongst citizens</li> <li>e) Is the institutional framework fostering culture of local creativity and information sharing within the society</li> </ul>	<p><i>IT only now being introduced in schools and University has no computer science degree.</i></p> <p><i>Estimated at 4-5%</i></p> <p><i>Traditional systems. Not very flexible.</i></p>
<p><b>5) E-Business Environment: Enabling seamless E-Commerce</b></p> <ul style="list-style-type: none"> <li>a) Present status of IT industry and IT in industry</li> <li>b) Existence of e-enabled financial framework to support electronic transactions</li> <li>c) Availability of venture capital for e-Business</li> <li>d) Transparency and predictability of regulatory implementation, openness of government, rule of law, etc.</li> <li>e) Climate and policy for participation by foreign investors in ICT businesses</li> </ul>	<p><i>Very little e-Business. Computerization in existing industry 60-70% but negligible e-Commerce.</i></p> <p><i>Not available</i></p> <p><i>Not available. Regular loans from Banks at 30%plus interest/charge.</i></p> <p><i>Rules available but concerns about implementation.</i></p> <p><i>Encouraged. New investment policy (including for IT) under consideration.</i></p>
<p><b>6) The International and Regional framework</b></p> <ul style="list-style-type: none"> <li>a) Negotiating stand on E-Commerce at the WTO/FTAA</li> <li>b) Regional and sub-regional collaboration</li> </ul>	<p><i>Expect assistance from RNM.</i></p> <p><i>Recommend support from CARICOM for e-Business capacity development in areas of legal and policy framework.</i></p>

**Country framework analysis for CARICOM States on their E-Readiness for E-Business**  
**(June/July 2001)**

**Member State: TRINIDAD & TOBAGO**

Basic Data:

Population: 1,269,100 (1996)  
Area: 5128 Sq Km  
GDP: EC\$15,165.0 mn  
GDP Per Capita: EC\$12,002 (1994)

<p><b>1) Infrastructural framework: Connectivity and cost</b></p> <p>a) Availability of communication services, access centres and networked computers</p> <p>b) Existence of effective competition among communication and information services providers</p> <p>c) Affordability and reliability of network access, including the cost of service (against per capita/average wage)</p> <p>d) Reliability of electrical supply for e-Business-critical operations</p> <p>e) Existence of any incubator facilities/IT Parks</p>	<p><i>The monopoly provider today is TSTT (51%Govt. and 49%Cable &amp; Wireless ). Voice communication good but some concerns re. Data. Internet connections are 60,000.</i></p> <p><i>Telecom bill has been passed by both houses of parliament but awaits promulgation. However competition has already started and now 5 other ISPs also operate.</i></p> <p><i>56K unlimited dial-up is TT300 monthly. Lease 64 is 10,000 and T-1 TT 208,000 per month. Only dial-up costs have fallen by half in last year not lease yet.</i></p> <p><i>Quite good</i></p> <p><i>Presently not but are planned for the future.</i></p>
<p><b>2) Policy Framework: E-Leadership and Participation</b></p> <p>a) Is E-Readiness a national priority</p> <p>b) Is there a national IT/E-Commerce plan or strategy existing</p>	<p><i>Yes</i></p> <p><i>A very detailed plan and strategy has been formulated for e-Commerce and for e-Government.</i></p>

<ul style="list-style-type: none"> <li>c) Is there an agency leading the initiative</li> <li>d) Progress with e-Government and promotion of participation of citizens</li> <li>e) Digitization of trade infrastructure and procedures</li> <li>f) Partnerships between industry and government to improve E-Readiness</li> </ul>	<p><i>A separate directorate of e-Commerce has been set up.</i></p> <p><i>E-Government also has a separate directorate and several plans are afoot to link up government departments and offer services on-line</i></p> <p><i>Customs still using the old version of ASACUDA with no on-line linkages.</i></p> <p><i>Fairly extensive consultation and opinion building being carried out.</i></p>
<p><b>3) Legal Framework: Security and privacy</b></p> <ul style="list-style-type: none"> <li>a) Legal support for e-Commerce transactions</li> <li>b) Strength of legal protections for processing and storage of networked information</li> <li>c) Strength and effectiveness of the legal and regulatory framework to address and prosecute cyber crimes, authorize digital signatures, and enable public key infrastructures etc.</li> <li>d) progress in protecting intellectual property rights.</li> <li>e) Measures of consumer protection and extent of efforts to protect privacy.</li> </ul>	<p><i>Partial support exists</i></p> <p><i>Computer Misuse Act, 2000 and Electronics Transfer of Funds Crime Act, 2000 in operation.</i></p> <p><i>Electronics Transactions Bill and Electronic Evidence Bill are both under consideration as is the question of regulatory authority.</i></p> <p><i>Totally compatible with WIPO.</i></p> <p><i>Consumer protection legislation needs o be extended to Internet</i></p>
<p><b>4) Human capacity framework: E-enabled Human Capital</b></p> <ul style="list-style-type: none"> <li>a) Availability of e-professional for e-business</li> <li>b) Skills and efficiency of the workforce</li> </ul>	<p><i>Today there is availability though experience is an issue.</i></p> <p><i>Very high and easily trainable for IT.</i></p>

<p>c) Levels of IT teaching in the education system, including private initiatives</p> <p>d) E-literacy amongst citizens</p> <p>e) Is the institutional framework fostering culture of local creativity and information sharing within the society</p>	<p><i>IT teaching at several levels available and of high quality. Several private initiatives also there.</i></p> <p><i>Conscious plan to extend access and raise e-Literacy.</i></p> <p><i>Attempts are on but as system is state run it has limitations of capacity.</i></p>
<p><b>5) E-Business Environment: Enabling seamless E-Commerce</b></p> <p>a) Present status of IT industry and IT in industry</p> <p>b) Existence of e-enabled financial framework to support electronic transactions</p> <p>c) Availability of venture capital for e-Business</p> <p>d) Transparency and predictability of regulatory implementation, openness of government, rule of law, etc.</p> <p>e) Climate and policy for participation by foreign investors in ICT businesses</p>	<p><i>IT industry is strong and developing. Also use of IT I industry is quite high with several businesses having their own websites.</i></p> <p><i>One Bank (Nova Scotia) provides a payment gateway for electronic online transactions over the Internet.</i></p> <p><i>There is a venture capital corporation but success rate is low.</i></p> <p><i>Quite high</i></p> <p><i>Actively encouraged</i></p>
<p><b>6) The International and Regional framework</b></p> <p>a) Negotiating stand on E-Commerce at the WTO/ FTAA</p> <p>b) Regional and sub-regional collaboration</p>	<p><i>A strong presence in FTAA discussions.</i></p> <p><i>Suggest harmonization amongst regional and international agencies.</i></p>

**Information technology indicators<sup>97</sup> (as a % of total population)**  
**Latin America and Caribbean - Caribbean (CARICOM States)**

	Year	Inter net hosts	Internet users	Estim ated PCs	Main telepho ne lines	Mobile cellular subscriber	Digital cellular subscriber	Television receivers	Cable TV subscribers
Antigua and Barbuda	1990	0	-	-	25.3	-	0	36.4	-
	1995	0.2	2.3	-	38.8	-	0	40.5	-
	1999	0.3	-	-	48.9	11.4	-	-	-
Barbados	1990	0	-	-	28.1	0	0	26.5	-
	1995	0	0	5.7	34.5	1.8	0	28.7	-
Belize	1990	0	-	-	9.2	0	0	14.3	-
	1995	0	0	2.8	13.4	0.7	0	18.1	-
	1999	0.1	5.1	-	15.6	2.6	-	-	-
Dominica	1990	0	-	-	16.4	0	0	7.0	-
	1995	0	0.5	-	24.1	0	0	13.6	12.2
	1999	0.2	-	-	27.9	-	-	-	-
Grenada	1990	0	0	-	17.7	0.2	0	8.7	-
	1995	0	0	-	26.0	0.4	0	35.9	-
	1999	0	-	-	31.5	2.2	0	-	-
Guyana	1990	0	-	-	2.0	0	0	3.5	-
	1995	0	-	-	5.4	0.1	0	4.2	-
	1999	0	0.4	-	7.5	-	-	-	-
Jamaica	1990	0	-	-	4.5	0	0	13.6	-
	1995	0	0.1	0.5	11.7	1.8	0	16.0	5.5
	1999	0	-	-	19.9	5.6	-	-	-
Montserrat	1990	-	-	-	32.7	-	-	17.7	-
	1995	-	-	-	43.0	0.8	-	18.2	-
	1999	0.9	-	-	-	-	-	-	-
Saint Kitts and Nevis	1990	0	-	-	23.7	-	0	22.0	-
	1995	0	-	-	36.3	-	0	25.2	-
	1999	0	-	-	51.8	1.8	0	-	-
Saint Lucia	1990	0	-	-	12.7	-	0	18.6	-
	1995	0	0.3	-	21.0	0.7	0	34.4	4.8
Saint Vincent and the Grenadine s	1990	0	-	-	12.4	0	0	14.2	-
	1995	0	0.1	-	16.5	-	-	21.2	-
	1998	0	1.8	8.9	18.8	0.7	-	22.8	-

<sup>97</sup> World Employment Report, 2001, International Labour Organisation, Geneva

	Year	Inter net hosts	Internet users	Estim ated PCs	Main teleph one lines	Mobile cellular subscribe r	Digital cellular subscribe r	Televisio n receivers	Cable TV subscriber s
Suriname	1990	0	-	-	9.2	0	0	13.8	0
	1995	0	0.1	-	13.2	0.4	0	19.5	0
	1999	0	-	-	17.1	4.2	-	-	-
Trinidad and Tobago	1990	0	-	-	14.1	0	0	33.1	-
	1995	0	0.2	2.0	16.8	0.5	0	33.3	-
	1999	0.4	-	-	21.4	3.0	-	-	-

**notes**

- 1 Data refer to year beginning 1 April.
- 2 Data refer to year ending 30 June.
- 3 Financial data refer to year ending 30 September.
- 4 Data refer to the mainland.
- 5 Data refer to year ending 30 September.
- 6 Data refer to Puerto Rico Telephone Authority.
- 7 Data refer to year ending November.
- 8 Data refer to year ending 30 September. Including Eritrea.
- 9 Data after 1990 may not be directly comparable to earlier years due to civil uprising.
- 10 Data refer to year beginning 22 March.
- 11 Data refer to Heigirian year, correspondence to Gregorian year is assumed.



**TABLE - Duties sand Taxes on IT Equipment***CARICOM member states Duties & Taxes on Computers, Parts & Software (2000)*

Country	Customs Duty	Internal taxes	Common Taxes
Antigua	5% computers & parts 25% software	30% CT 30% CT	5% Customs Service Tax
Barbados	5% computer & parts 0 % software	15% VAT 15% VAT	1 % environmental levy
Belize	0 % computer & parts 25 % software	8% Sales tax 8% Sales tax	
Dominica	5% computer & parts 5% software	Free CT 25% CT	1 % customs service charge
Grenada	5% computer & parts 20% software	25% GCT 25% GCT	5 % customs service charge
Guyana	5% computer & parts 20% software	Free CT 30% CT	
Jamaica	0 % computer & parts 20% software	15% GCT 15% GCT	
St Kitts	0 % computer 5% parts 25% software	15% CT 15% CT 15% CT	3 % customs service tax
St Lucia	0% computer & parts 20% software	0% CT 10 % CT	4 % customs service 1 % environ'tal levy
St Vincent	0 % computer 5% parts 20% software	Free CT 30% CT 40% CT	2.5% customs service
Trinidad	0 % computer & parts 20% software	0% VAT 15% VAT	
Suriname	5% computer & parts 20% software	7% VAT 7% VAT	0.5 % statistics tax 1.5 % consent tax

CT- Consumption Tax      GCT- General Consumption Tax

Source: *Caribbean Export Development Trade Regulations Database*

**Field Research Schedule of Mr. Alwyn Didar Singh, Consultant**  
**CARICOM Mission - E- Business Capacity Development**

<i><b>Member State</b></i>	<i><b>Arrival</b></i>	<i><b>Meeting Days</b></i>	<i><b>Departure</b></i>
Guyana	9 June (Sat)	11 & 12 July –CARICOM 13-15 July -Guyana	17 June (Sun) BW432-605am
Belize	17 June (Sun) TA134-525pm	18 Jun (Mon) 19 Jun (Tue)	20 June (Wed) AA2104-119pm
Jamaica	20 June (Wed) JM26-1105am	21 Jun (Thr) 22 Jun (Fri)	24 June (Sun) BW415-1245pm
Antigua and Barbuda	24 June (Sun) BW415-405pm	25 Jun (Mon) 26 Jun (Tue)	28 June (Thr) LI520-630am
[Montserrat	27 June (Wed)	27 Jun (Wed)	27 Jun (ferry)]
St. Kitts and Nevis	28 June (Thr) LI520-655am	28 Jun (Thr) 29 Jun (Fri)	1 July (Sun) LI553-315pm
Dominica	1 July (Sun) LI345-515pm	2 Jul (Mon) 3 Jul (Tue)	4 July (Wed) LI103-250pm
St. Lucia	4 July (Wed) LI103-330pm	5 Jul (Thur) 6 Jul (Fri)	8 July (Sun) LI373-350pm
Barbados	8 July (Sun) LI373-430pm	9 July (Mon) 10 July (Tue)	11 July (Wed) LI351-725pm
St. Vincent and the Grenadines	11 July (Wed) LI351-805pm	12 July (Thr) 13 July (Fri)	14 July (Sat) LI311-630pm
Grenada	14 July (Sat) LI311-700pm	16 July (Mon) 17 July (Tue)	18 July (Wed) LI 311-715pm
Trinidad and Tobago	18 July (Wed) LI 311-750pm	19 July (Thr) 20 July (Fri)	23 July (Mon) PY462-615pm
Suriname	23 July (Mon) PY462-830pm	24 July (Tue) 25 July (Wed)	26 July (Thr) PY219-1100am
Guyana	26 July (Thr) PY219-1130am	27 July onwards report writing	