**CARIBBEAN POLICY RESPONSE TO THE INFORMATION AGE:
A REVIEW OF GOVERNMENT INFORMATION AND
COMMUNICATIONS TECHNOLOGY POLICY AND SERVICES
IN SELECTED CARIBBEAN COUNTRIES**

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Abstract

Caribbean governments have been reacting to the phenomenon that is the Information Age with a variety of policy initiatives. Initially governments trained most of their efforts at facilitating the development of an informatics industry, drawn there by the promise of jobs and foreign exchange earnings. However, the motives for these policy interventions have evolved over time and as a consequence, policy has matured. This paper, which is descriptive rather than analytical, draws heavily on statements made by government decision makers. It attempts to provide an overview of some of the major activities undertaken by some Caribbean governments and regional organizations in a real and serious attempt to seize the digital opportunity provided by the Internet and the other technological applications which this technology has spawned. Trinidad and Tobago, Barbados, Guyana, Saint Lucia, and Saint Vincent and the Grenadines are included in this review. Information on Grenada, based exclusively on available documentation is also included.

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Introduction

Traditional analyses of Caribbean economies have pointed to several structural factors in an attempt to explain their persistent under-performance. Among the previously familiar themes were the fact of small size and the vulnerability associated with this; the narrowness of the resource base and the resulting constraints on economic diversification; their status as primary producers, vulnerable to externally driven commodity price fluctuations; the openness of the economies and the heavy reliance on export earnings. The Internet onslaught and the revolutionary capabilities of the World Wide Web called into question some of these traditional assumptions and pointed to the need for an alternative development paradigm.

A new reality beckoned, made achievable through dramatic improvements in information and communications technology. This reality included the potential for significantly increasing exports by exploring the potential of niche markets for items, the production of which prior to the electronic transactions made possible by Internet, was constrained by a structural inability to produce in sufficient volume to attract the mass market. Trade in services would be another positive outcome since the new reality would see an increase in the market for offshore data services. Prospects for accelerating the pace of public sector reform through e-government initiatives was another compelling feature. Equally appealing were the prospects of improving human capital, reducing the unit cost of training, and maximising the returns on scarce teaching resources through greater use of distance learning. Applications in the health sector through tele-medicine, and the Internet's potential with regard to tourism promotion were also contemplated.

Caribbean governments were faced with a complex situation as they attempted to respond with sound and reasoned policy to the information and communications technology revolution. Coming to the table late on this issue however (that is, late in comparison to most industrialized countries) may have allowed Caribbean governments to observe and avoid the pitfalls into which other players had been lured. Web-based technology with its potential applications for e-business, and electronic governance was relatively new and still evolving. As a consequence there was no recognized manual of best practices for a country to follow. Policy makers recognized that a strategy of Information and Communications Technology (ICT) driven development was not without risk. After all, dot com businesses that had seen profits soar to dizzying heights in 1999 came crashing down to earth in 2000, testimony to the fact that while Internet technology offered tremendous opportunity, there were serious challenges to be dealt with as well.

Initially, many countries adopted a posture of accommodation, opting to position themselves to take advantage of the United States quest for cheap data entry and other basic services. Policy decisions focussed on the need to make adjustments in order to become more attractive as a host for offshore information-based business entities. In other words, policy was initially propelled by external factors. "How could we service the US market's need for low cost labour and cheap telecommunications?". Most Caribbean countries had an abundant supply of the first, and lost no

time in trying to secure the second - hence the flurry of activity aimed at bringing the telecommunications authorities to heel, under the general umbrella of "liberalising the telecommunications industry".

Recent evidence suggests that policy has matured. Many Caribbean countries are attempting to craft a reasoned, structured response to the opportunities created by the ICT revolution. Policy makers have begun to integrate ICT planning into total planning, recognizing its value as a foreign exchange earner and job creator in the context of an offshore enclave industry, but also exploiting its potential to add value to other sectors, such as education, health, tourism, manufacturing and even the public service.

Now, there is a new sense of urgency fuelled in large part by a deteriorating domestic economy, but made more pressing by the negative fallout from the traumatic events of September 11th. References to these events are already becoming clichéd, but the impact on the Caribbean has been devastating, with the tourism industry suffering a major decline, estimated by some analysts to be as high as 40 to 50 percent in some countries.

This, therefore, is the context in which the use of information and communications technology is being explored. This study will describe the policy response of selected Caribbean governments to the information and communications technology revolution, paying particular attention to the areas of e-commerce, e-government, human resource development and telecommunications and legislative reform. An attempt will be made where information is available to trace the evolution of policy from political commitment, to implementation, and impact where possible. Relevant activities undertaken by some regional organisations will also be described.

All sources of information used will be listed in the bibliography. Many of the documents referred to will be available from ECLAC's Caribbean Documentation Centre and through the Centre's Caribbean Digital Library, available on the Web at www.eclapos.org/cdl. Interviews were conducted with persons in Trinidad and Tobago, Guyana, Barbados, Saint Vincent and the Grenadines and St Lucia. The information included for Grenada was taken exclusively from documentary sources and will therefore be less comprehensive. One must be reminded that the limitations of a study such as this one is that it can only provide a snapshot of a particular point in time. ECLAC will however continue to monitor policy developments in this area and document these in periodic updates of this work.

Definitions and explanations

Policy

In approaching this subject, we have flirted with two complementary definitions of "policy". In the first, policy is an assertion of intent. In the second, policy implies a governing body's standing decisions by which it regulates, controls, promotes, services, and otherwise influences matters within its sphere of authority.

The second definition goes further than the first. Both interpretations are relevant in an area as dynamic as the information and communications technology sector. Most significant government policies have their genesis in political statements. This is especially so in the democratic countries of the Caribbean. But whereas some countries have not gone much beyond the stage of asserting their intentions, others have made significant progress towards implementing decisions.

Electronic commerce

Electronic commerce, broadly defined as the production, marketing, sale and/or delivery of goods and services via electronic means, has revolutionised the way in which companies and countries do business, erasing in the process many of the constraints that had impeded business expansion in the Caribbean in the past.

Faced with the daunting reality of deteriorating economic circumstances, several Caribbean governments have embarked upon initiatives to promote electronic commerce. It is a move that makes sense, since the ability to deliver products in the required volume, distance from the main business centres of the world, the prohibitive cost of advertising globally, as well as the inability to access international markets have been serious constraints to the development of viable business entities in the Caribbean.

Electronic commerce has also presented the Caribbean with a number of major new challenges. The legislative framework required to regulate and ensure the security of e-business transactions needed to be updated. There was need as well to come to terms with the prospect of the loss of a significant portion of tax revenue due to e-commerce transactions which by and large fall outside the ambit of the tax regime. There also existed a cultural resistance to accepting electronic transactions as valid, a reluctance to "buying cat in bag" as it were. This would have to be faced. A skilled workforce had to be developed; adequate telecommunications infrastructure, especially, sufficient band width had to be put in place; and banks had still not been persuaded to provide the necessary arrangements to facilitate on-line payment or even to provide loans for e-business.

Notwithstanding the very real challenges outlined above, Caribbean governments have been aggressively trying to position themselves to take advantage of the strategic opportunities presented by this new medium. Some governments focussed, at least initially on the informatics industry. Others viewed electronic commerce as an integral part of their development agenda. It is an important difference and one which has influenced the policy agenda in the various countries. Some opted to become players, others seemed content to merely provide the playing field. On the one hand, countries put policies in place to facilitate the establishment of offshore business. On the other, policies were geared to transform the manner in which already established commercial entities conducted their business. During the course of this paper some electronic commerce policy initiatives of various Caribbean governments will be described.

Electronic government

For a definition of e-government, we used as our source the Comnet.IT: Guidelines for sectoral ICT policy and planning.

> *"Electronic government involves the electronic delivery of services that reduces the cost of internal operations of a government as well as its interactions with communities and citizens. It involves not only the automation of existing processes, but may require radical re-conceptualization of some processes. E-government is a comprehensive concept that involves any aspect of government to consumer, government to business, and government to government interaction that can be enhanced through the use of information and communications technologies".*

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Policy measures in selected countries

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In the following section elements of information and communications policy measures taken by the governments of Guyana, Barbados, Saint Lucia, Grenada, Saint Vincent and the Grenadines, and Trinidad and Tobago will be described. Differences in objective, in approach, and in emphasis will be evident. Guyana's goal was essentially poverty reduction. In the case of Trinidad and Tobago, the rallying cry was the creation of "an intelligent nation". Some countries spent their own money. Others relied on concessionary loans. Some focussed on institutions, others on training. What will be consistent throughout, however, is the recognition by all governments that the information technology phenomenon had to be addressed seriously and with urgency.

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Guyana

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Giving voice to the vision - political commitment

In Guyana policy in respect of information and communications technology and services did not appear to be a major part of the government's development agenda until relatively recently. For example, the Guyana 2000 national budget identifies five priority areas for government investment. Broadly speaking, these areas had to do with maintenance and development activities in the sectors of health, education, water and sanitation, housing, and infrastructure development. References to information and communications technology as an instrument of national development were conspicuously absent, apart from a fleeting reference to the work of the Y2K committee, which had cooperated with the Guyana National Bureau of Standards to develop a set of guidelines to govern the importation of computers.

One year later there was a significant policy shift. Not only did information and communications feature in several major policy speeches and documents, but the government had by then taken several steps towards creating a domestic environment that was favourable to the growth of the information services sector.

In the run up to the general election of March 2001 the ruling political party, in its manifesto, an excerpt of which is reproduced below, articulated a vision for information and communications and committed a new PPP/Civic government to competing in the new Global Information Age economy:

> *".... As we continue to support and develop our agricultural economic base, we must look to the future. We must be prepared to compete globally for our share of the information age businesses and jobs. We have taken bold steps to introduce competition in the telecom sector. Competition and enabling of the telecom business environment will bring IT investments to Guyana, which will create high-paying IT jobs.*
>
> *The Government is introducing the Internet into the public schools to help educate our children. Soon, the Internet will be in your homes, communities and businesses. We aim to ensure that all Guyanese will soon have a phone at reasonable costs and fast and reliable Internet access. Over 40,000 new telephone lines were added during the past 10 years. We will add an additional 50,000 landline and mobile phones in the next five years.*
>
> *The PPP/C Government will bring Guyana to the forefront of IT development in the Caribbean. We are putting the legal, regulatory and business environment in place. We are implementing legal and regulatory telecom reform through $US1.6 million in assistance from the Inter-American Development Bank.*
>
> *Government is developing incentives for IT business investments in Guyana. Competition is being introduced for all telecom products and services, including telephone and Internet. Competition will lower the prices, improve the quality, and provide consumers with a choice.*

World-class international IT call centre operators are negotiating with the Government to invest in Guyana. One call centre is already operational. Other call centres are being established outside of Georgetown. These call centres will hire thousands at good salaries.

The PPP/C Government is developing regional IT training centres. These regional training centres will be strategically located in both Georgetown and throughout Guyana. These regional training centres will train the workforce in entry-level "job-ready" work skills such as basic computer literacy.

The PPP/C Government is establishing community Internet access points for small business. Small businesses and the community will be able to log-on to the Internet, check email, surf the Web, and engage in E-commerce. The community will also have access to the Internet at community centres. For those that cannot afford their own computer or monthly Internet access charges, you will be able to go to the community centres to access the Internet.

The Government will start a computer programme within three years. Computer based learning will supplement teacher instruction. Distance education through the Internet will permit teachers at one school to teach students at another school...."

This position was reinforced in an address by the President on the occasion of the opening of Parliament a few weeks later:

Modern communications technologies should be employed in our battle to break down cultural barriers, root out illiteracy and backwardness and expand the horizons of our people.

Developing the strategy

The policy positions outlined above indicate that information and communications technology had by then, come to be regarded as an essential part of the Guyana government's development planning and a key ingredient in its poverty reduction strategy. The implementation of an information and communication technology strategy, or connectivity agenda, was highlighted in the government's poverty reduction strategy paper as "a pivotal tool to improve governance, accountability and transparency, generate employment especially among women and youth, develop human resource potential, and strengthen national unity".

Telecommunications reform

Three important decisions followed. First, the government retained the services of an international telecommunications specialist to assist in the development of a strategy for telecommunications reform. A consultation paper which identified and discussed issues and options for reforming the telecommunications sector was prepared and circulated to the general public. The intent of the paper was to educate and inform civil society on the reasons reforms were needed in the sector, the intent being that by the time firm policy was arrived at, most sectors of the population would be engaged and informed on all the important issues. The legal and regulatory framework, the structure of the market, licensing, consumer protection, and universal access and interconnection are among the issues aired in the consultation paper.

ICT policy paper

Secondly, the government commissioned an Information and Communications Technology policy paper early in 2001. Besides recommending the establishment of an Information Technology Authority to "lead, the effort to convert Guyana to a knowledge based society" the paper set out several clear objectives which could be achieved through more strategic use of ICT. These were:

- more efficient systems for human capital development

- greater access to public information

- greater access to technology by the handicapped and persons with low-income

- enhanced productivity and economic diversification

- reliable information systems

- open transparent and accountable government

- more efficient public service

- improved links with the rest of the world

IDB funding for Guyana IT project

The government also successfully approached the Inter American Development Bank (IDB) with a request to fund an Information and Communications Technology Project. After an unsuccessful attempt to persuade the government that a loan for building roads would be more appropriate, the Bank agreed to lend the Guyana government some US$20 million, with the government, providing the remaining US$5 million. The project was approved in the context of Guyana's attempts to modernise the state and reform the Civil Service. The project had five distinct components:

- support for an ICT Unit in the Office of the President

- improvements to the legal framework

- increased use of ICT in the public sector (e-government)

- community outreach through the creation of tele-centres

- promotion of ICT exports

An additional US$5 million was earmarked for intervention in the education sector and to support the ICT programme a US$25 million rural electrification project was planned. A major expansion of the telephone service was also projected to bring phone lines to an additional 40,000 households. The Information and Communications Technology Unit has already been set up and a head of Unit appointed. Extensive consultations with the public have been carried out.

Preparing for e-government

The government is exploring various options in an effort to change government from being an entity which is essentially bureaucratic to one which is service oriented. The Information Systems Unit of the Ministry of Finance is expected to play a key role in this transformation. The Head of the Information Systems Unit had been sent for training in e-government applications as part of the preparation.

The Guyana Government has been able to maintain a significant presence on the Web. Many of the sites were designed with the assistance of the United Nations Development Programme funded Sustainable Development Networking Programme (SNDP). A list of useful government web sites is available in the appendix to this document. See section on "Web Resources".

Barbados

IT policy in an economy driven by tourism and international business

"We look forward to bringing about a new and UNPRECEDENTED prosperity in Barbados and to the achievement of our potential to be THE WORLD'S SMALLEST DEVELOPED ECONOMY. ... We envision Barbados flourishing as a tourism economy... and ... a premier international financial and business centre."

These were the clear strategic objectives outlined in the manifesto issued by the Barbados Labour Party (BLP) in advance of that country's general election in 1999. The further development of an information services sector was not identified as a priority even though there were several references to the use of information technology in the areas of public sector reform, and crime fighting. Some of these plans are summarised below:

- complete computerisation of the public sector and training of public servants in IT

- proclaim the provisions of the Evidence Act that permit the recording of confessions and make evidence so obtained less susceptible to impeachment.
- refine the system of computerisation to link the courts, immigration department and the prison

- complete computerisation of the judicial system to facilitate judicial case management

- train new and existing court reporters in the use of information technology to generate computer-aided transcripts

- improving information systems to the support the expansion of a hub for regional mail at the airport

The most recent statement of economic and financial policies presented to the Barbados Parliament by the Minister of Finance and Economic Affairs (August 2001) suggests a policy that is now much more conscious of the requirements of the information services sub-sector. It is in the context of facilitating and encouraging the growth of this sector that new policies in respect of human resources development and telecommunications reform were proposed.

"The Information Services has continued to exhibit prospects as an area of potential growth, despite constraints, some of which revolve around the present downturn in the international economy in general and the information technology sector in North America in particular.

This sub-sector has over the past three to four years provided job opportunities for more than 1,500 persons on average per year, two-thirds of whom are female.

The sector has however been challenged to adapt to the rapid change which is sweeping the international market place, and increased emphasis has been placed on the higher value-added activities in Software Technology and Applications Development. In addition, Call Centres have emerged as an activity of favourable prospects for Barbados. These areas, however, require a very much higher level of technical skills - a requirement which has presented us with a major challenge.

In moving to meet this challenge, Government has recently established the Barbados Technology Training Centre, at the Harbour Industrial Park.

The Technology Training Centre, in providing accelerated training in software development, e-commerce and other internet-related applications, will play a significant role in enhancing productivity locally and improving the international competitiveness of the sector. Through its training and certification programmes, it will equip Barbadians to access employment opportunities not only in the Caribbean, but in almost any part of the world. A minimum of 250 persons is expected to be trained by the Centre annually.

In furthering the development and diversification of the information services sector, the promotion of Call Centres and Medical Transcription Services is now being considered. Call Centres have the potential to generate significant employment, ranging between 200 and 800 employees per centre. However, the future growth prospects of these areas could revolve around the success of present efforts to liberalise the local telecommunications industry".

E-government initiatives - GOBINET links government departments

GOBINET, an information network facilitated by a series of government web sites, was established to serve the global public with information on demand, increase transparency of government operations, and provide a medium through which citizens could correspond easily with the government. The Barbados Government Information Service (BGIS), the Central Emergency Relief Organization, the Ministry of Agriculture, Ministry of Labour, Sports and Public Sector Reform and Edu Tech 2000 are already linked under GOBINET.

Another e-government initiative was the use of the *Smart Stream* software which manages and monitors the expenditure of some government departments, in particular, those departments which are necessary to facilitate investment. Essentially an accounting project, the objective of the use of *Smart Stream* was to create an enabling environment, via a "virtual" one-stop shop, for private sector investment. To date thirteen departments were linked in this system, which also has a human resource component. These include: Customs, National Insurance, Inland Revenue, Ministry of Trade and International Business, and the Barbados Investment and Development Corporation. The government also established an Information Technology group within the public sector to explore and advise on e-government and e-commerce possibilities. This committee is overseen by the Ministry with responsibility for the Civil Service. As part of this initiative the Data Processing Department is exploring the practicality of installing an Intranet backbone for the entire public service.

Human resource development: the aim of *Edu Tech* 2000

Another major programme of the government of Barbados is *Edu Tech 2000*, a seven year Education Sector Enhancement Programme, intended to:

"prepare students who are creative, numerate, literate, well trained and readily re-trainable at any point in their development; ensure that all students understand the necessity of being able to live and work harmoniously with other persons in their environments; increase the efficacy of the teaching/learning process by encouraging teachers to shift to child-centred and more collaborative forms of learning in their classrooms; and ensure that all children leave school with the basic skills and abilities that are required to participate productively in the skill- and information-intensive job market".

One of the major components of this programme was the procurement and installation of hardware and software to equip schools with the technologies necessary to enhance their education. *Edu Tech 2000* plans to use technology to assist students in mastering the skills necessary for them to compete in the information age; manage the school systems and motivate the teachers; and facilitate the teaching of various subjects.

E-commerce promoted by the BIDC

Barbados, through the BIDC is attempting to position itself as an ideal location for offshore IT business. Software development, medical records processing, publishing, credit card application processing, tele-marketing, call centres, direct mail, insurance claims processing, litigation support services, and computer-aided design are among the services advertised. Attractive tax rates (maximum corporate tax rate of 2.5% on net profits for International Business Companies); exemption from import duties on production-related equipment; unrestricted repatriation of capital, profits and dividends; office space for rent at competitive rates; assistance with workforce training; and an official government welcome are among the incentives offered to would-be investors.

However, Barbados has now moved beyond the offshore concept of electronic commerce to fully embrace the idea of indigenous Internet-based electronic business transactions. A study entitled "Electronic Commerce and the Barbados International Business Sector" was commissioned. This study raised issues such as, the probable loss of tax revenue; the impossibility of collecting customs duty on digital products; and cross jurisdictional issues that could affect consumer protection, intellectual property rights, privacy and security. The study also recommended some ways in which the challenges could be dealt with.

Telecommunications reform in Barbados

The liberalisation and reform of the telecommunications sector is also engaging the attention of the government. In this area however, Barbados lags a little behind their OECS neighbours. This is not for lack of government concern. A great deal of progress has been made, even though at the time of writing (October 2001) a Cable and Wireless monopoly situation still existed. The government issued a Green Paper on Telecommunications Sector Policy in December 2000. Meanwhile negotiations with Cable and Wireless continue.

Saint Lucia

Political commitment

Prior to assuming office in 1997, the Saint Lucia Labour Party made this commitment in its elections manifesto in respect of plans for the telecommunications and information technology sector:

"We see telecommunications as pivotal to our intention of transforming Saint Lucia into an island of creativity. Each Saint Lucian must have affordable access to all the modern telecommunication services available today. Every family that needs a telephone to be able to call a relative in another community or overseas should be able to do so with little difficulty and at an affordable rate. Those who desire other conveniences such as

call waiting, caller ID, and call transfer should be able to do so. The most fascinating development in information technology has been the popularization of the information superhighway yet it remains an absolute luxury in Saint Lucia because of the high cost of access. There is no reason why every family in Saint Lucia that has a computer cannot be offered Internet services at very affordable rates. In fact, a Labour Party, as a matter of policy, will ensure that each secondary school is provided with access to the information superhighway".

The party also pledged to, among other things:

o   *Renegotiate the Agreement between the Government and Cable & Wireless to ensure greater protection of consumers and to enhance the development of Saint Lucia including the Informatics Sector.*

o   *Negotiate a flat rate for telephone services as a means of opening up the country and removing price discrimination for persons living in rural areas.*

o   *Ensure that each secondary school is provided access to the information highway.*

o   *Require Cable and Wireless to increase its penetration rate of installing telephones not just to communities but to households.*

o   *Abolish tax on local telephone calls*

Electronic government for wider participation

The Government of Saint Lucia is committed to using the technology to facilitate wider public participation in national development and influencing for the better, the manner in which its actions are perceived. The Government Information Service was strengthened with the addition of more staff and additional resources. The GIS was also given the responsibility for maintaining the government's official web site www.stlucia.gov.lc, with its network of ancillary sites for each government Ministry and other departments. It is therefore possible to take a virtual tour through the St Lucia public sector, view and download key official documents and learn at first hand about government's policies and programmes. An e-mail system encompassing all sections of the public service, has been introduced. The Government Printery was also in the process of putting systems in place to sell its documents in electronic format.

Another recent project with a similar aim was the launch of a new government television station (October 2001) which would among other things, "provide public education on the work of all public sector agencies". Another project of the Government Information Service, this TV station, the National Television Network has committed itself to producing 25 percent of its programme output and providing St Lucians with an outlet for the cultural and other products of local producers.

Modernizing the Public Sector with FINMAN

If image was a factor in some of the government initiatives, it was by no means the only preoccupation. The Government of St Lucia also took steps to improve efficiency within the public service. It has done this with FINMAN, the Standardized Integrated Government Financial Information System, which allows for the creation of electronic invoices to speed up government

payments. FINMAN also has built-in controls to prevent departments from exceeding their budgets either deliberately or inadvertently. A standardized tax accounting system had also been developed and was fully operational. The introduction of new processes made possible through this programme required process re-engineering and some changes to work flow architecture.

FINMAN is not a new programme. There was a platform on which to build. In 1995, with funding from the Canadian International Development Agency (CIDA) the then government had introduced the financial management project as part of the Eastern Caribbean Management Programme (ECEMP). However, effective implementation did not commence until some time later. Intended for the whole of the OECS sub-region, St Lucia was used as a pilot.

The view from persons involved in implementing the various components was that FINMAN, although a success story, was not without its share of problems. Resistance to change, varying levels of enthusiasm and aptitude, loss of newly trained IT systems staff to other organisations and some difficulties associated with software support were some of the challenges encountered. Some government departments were much more forward looking than others. The Ministry of Education, the Statistics Department, the Inland Revenue Department and the Customs Division have all gone a long way towards embracing the technology, but others lag behind, some for unavoidable logistic reasons, others because of varying degrees of recalcitrance.

Readying the workforce

The increased application of information technology would influence not only the public sector. Several changes were in store for the education system as well. The government prepared an Education Development Plan, which paid a lot of attention to Technical and Vocational Education. Government plans to establish ICT in schools and the sum of ten million Eastern Caribbean dollars (EC$10,000,000.00) has been allocated to this. A recent (November 2001) Green Paper on Public Sector recommends strengthening the information technology capacity of the Civil Service through integrating and sharing of information among ministries and departments; and offering efficient online services to government departments in the initial phase and to citizens and business sectors later on..

One major constraint to the growth of the IT industry in St Lucia has been the skills of the labour force. The government has therefore created a revolving National Technology Training Fund of US$1,000,000.00 in the first instance, aimed at developing a cadre of young persons who would be equipped to work in the information sector. The fund is being administered by the Bank of St Lucia and it will be available to investors to use for training potential employees. Three types of training are envisioned: general computer technology; job specific training; and training in specialised high end support services.

Consideration is currently being given to developing St Lucia's Sir Arthur Lewis Community College as a centre of excellence for delivering short term courses related specifically to the information technology sector. If this materialises, courses would be offered to persons from other islands in the OECS sub-region.

A regional hub for high end products

The pace of ICT development in the public sector appears to have outstripped that of activities aimed at engaging the private sector. Recently however, an Office of Private Sector Relations was created as an arm of the Office of the Prime Minister. The aim of this new entity was to encourage greater private sector involvement in the national development thrust.

A draft industrial policy for St Lucia (November 2000) considered the
"possibility of making St Lucia a regional IT hub for high end products and services"

The 2001 budget statement, which had as its theme "inspiring and sustaining development in a changing world", hints at concerns with a loss of national revenue, since "many tax concepts were developed for trade in tangible goods, and are inapplicable to trade in digital goods and services"; and commits itself to the establishment of a legal framework to regulate the conduct of electronic business transactions. Notwithstanding these reservations, the government established an e-commerce committee to guide developments in this area and recommendations should be forthcoming by the end of 2002.

Freeing up telecommunications

Saint Lucia along with four other partner OECS countries (Grenada, Saint Vincent and the Grenadines, St. Kitts and Nevis, and Dominica) agreed to a phased process of ending the telecommunications monopoly enjoyed by Cable and Wireless and introducing competition in the supply of cellular services, and customer premises equipment.[1]

Grenada[2]

Policy direction

Policy statements by officials of the Grenada government give a fair indication of the strategic importance of information and communications technology in the government's development planning. Indeed, the theme of Grenada's budget address delivered to Parliament by the Minister of Finance on January 12th 2001 was: "towards a knowledge-based economy with equity". Central to the achievement of that goal was the deregulation of the telecommunications industry which the OECS countries achieved as part of a group effort through the establishment of the Eastern Caribbean Telecommunications Authority (ECTEL).

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[1]   For more information on the deregulation of telecommunications see section on "the OECS".

[2]   Grenada was not visited during the course of this research and no interviews were conducted. All information came from available documents.

An increased budget allocation to the education sector of 22 percent over the expenditure for 2000 also illustrates the growing commitment. The section of the budget which speaks to the issue of education and human resource development says in part:

> *"Information technology and computer studies will continue to figure prominently in human resource development in 2001 with the National Employment and Skills Training Programme. It is our intention to make access to a personal computer available to every single Grenadian..."*

The address goes on to detail a plan for reducing the tax on computers and computer accessories and for training programmes which would be undertaken to empower youth to take advantage of the opportunities that exist in high tech, knowledge-based industries. An on-line Labour Market Information System, and some national security applications were also on the drawing board:

> *The computerisation of the Police Force that started with criminal data records has now been extended to immigration. Very soon, all police stations will be linked through a computer network thus improving the speed of crime prevention and detection. An automated identification and fingerprinting system is also planned.*

Significant progress in education and training

Grenada has made some progress in the implementation of its ICT policy. A call centre was established at Seamoon in St. Andrews. The Centre is reported to have employed some 800 young Grenadians, many of them rural residents, and there were plans to increase that number. The Grenada government has a 40 percent share in the company.

In addition, the National Employment and Skills Training Programme offered training to one thousand (1,000) Grenadians in computer literacy and personal development. The 2001 budget address goes on to note significant progress in government's training programme in its effort to "computerise all learning institutions":

- web site creation, where all 25 participants were subsequently able to find jobs;
- the introduction of computer based programmed courses in several core subjects
- provision of software to schools for children with special needs
- four month training programme for secondary school teachers in computer use
- installation of computers in Principal's office of 18 primary schools
- computer training for all 58 primary school principals

Enabling government departments

The Minister of Finance disclosed that one hundred (100) new computers were purchased for use in various government departments in an effort to promote a more efficient and customer-oriented Public Service. Additionally, work was reported to be well advanced on the establishment of a Computer Network linking all Government ministries and departments electronically. A website had been established. for the Ministry of Finance's Department of Economic Affairs. Plans were also underway for a Government of Grenada website that would offer links to the websites of the various ministries and statutory bodies to facilitate more timely and effective information transfer to prospective tourists and investors; and a broad-based Information Communication Technology Council was soon to be launched; and an Information and Communication Technology Plan drafted.

Saint Vincent and the Grenadines

Making the commitment

The incoming Unity Labour Party made a strong commitment to developing information and communications technology and services during the election campaign that preceded their coming into office at the end of March 2001. The following excerpt from their elections manifesto illustrates:

The Information Technology (IT) industry has tremendous growth potential for Saint Vincent and the Grenadines but we need to be focussed in our policies on this matter. Accordingly, a ULP government will:

- *Set up a new Ministry of Industry, Telecommunications, Science and Technology to initiate a new thrust in the information technology sector;*

- *Extend and develop "data entry" operations, e-business, and "call centres" to provide important jobs particularly for young people with basic computer skills;*

- *Launch practical initiatives in the area of software engineering or computer programming which holds tremendous possibilities for Saint Vincent and the Grenadines. In this regard, appropriate training is vital and a ULP government, in conjunction with other countries, software engineering companies, telecommunications companies, and universities will provide such training as a matter of urgency. This training will ensure that young people will have marketable skills for quality jobs here and overseas;*

- *Advocate practically a new competitive regime in telecommunication in accordance with the principles advanced by the Eastern Caribbean Telecommunications Authority (ECTEL);*

- *Negotiate sensibly, without rancour or hostility, with Cable and Wireless as part of a regional approach to telecommunications to ensure a quality telecommunications service in all areas at a much cheaper rate;*

- *Build a quality Informatics Park at Diamond;*

- *Ensure that a sufficiency of computers are put in every educational institution to train every student and teacher in the use of computers;*

- *Utilise science and technology to modernize the economy and make it more competitive*

On the matter of telecommunications, the manifesto continues:

In this age of information technology and globalisation coupled with Saint Vincent and the Grenadines' transition to an increasingly services based economy, a developed telecommunications system is more important than ever before.

All right-thinking persons in the OECS, including Saint Vincent and the Grenadines, agree with the broad principles for a better telecommunications sector as outlined by the Eastern Caribbean Telecommunications Authority including those relating to competition, universal service, the delivery of a much wider range of telecommunications services at much lower rates, and proper regulation of this sector. There are however, divergent views about the approach towards reforming the telecommunications sector, including the framework and tactics in handling the sole incumbent provider, Cable and Wireless.

Reviewing the progress

Fair progress has been made in the seven months since the new government assumed office. The Ministry of Telecommunications, Science, Technology and Industry was established to lead developments in the sector. The thrust appeared to be broad, with attention being paid to five main areas: completing arrangements for telecommunications reform; accelerating human resource development efforts; exploring employment creation possibilities; expediting the process of putting computers in schools; and modernising procedures in the public service.

Telecommunications reform

The coming of the new government into office coincided almost exactly with the passage of a new Telecommunications Bill. Act no. 1 of 2001 came into being in April, based on model legislation prepared for the OECS Member States through the Eastern Caribbean Telecommunications Authority (ECTEL). In keeping with the requirements of the Act a National Telecommunications Regulatory Commission was established to, among other things, oversee the issuance of licences to entities applying to provide telecommunications services. At the time of writing (October 2001) a Chairman of this Authority had recently been appointed and eighteen companies had submitted proposals to supply telecommunications services including cellular services and internet access. As part of the agreement concluded with Cable and Wireless, no licenses for telephony will be issued before April 2002. The liberalisation of the sector is therefore being effected on a phased basis.

One immediate result of the more attractive investment environment has been the ability of information services companies, which had previously used leased circuits from Cable and Wireless to now use their own VSATs at more economical rates. A call centre has been established. It is being managed by the Development Corporation. Other privately owned data services companies have been set up and more are planned. Government has undertaken to train a cadre of persons to be employed in these companies.

Modernising government

A major conference on electronic government was said to be in the works and a programme to computerise the records of the Registry, Electoral Office and other departments was underway. There currently exists a Wide Area Network linking the Ministries of Finance, Health, and Works, but activities were still largely limited to processing payments for these three departments. This network will be extended to encompass other departments. The Telecommunications Department had responsibility for administering the Internet domain with the ".VC" extension.

The feasibility of making the Postal Services a corporation was being studied, and consideration was being given to offering Internet services through post offices in the rural districts. Funding and a site for the building of a new Public Library had been identified. The expectation is that Internet access would be provided for persons living in and around Kingstown through this facility as well.

Human resource development initiatives

Some effort has been made to increase the number of computers available to children, through the school system. Sixteen schools already had networked computer laboratories. As a gesture of goodwill, Cable and Wireless has given free Internet access to schools that have computers. A total of sixty three (63) schools were reported to have Internet access.

A significant effort was also underway to train teachers. The establishment of a National Institute of Technology was being contemplated in order to provide training in the necessary new skills, but some interim measures had been put in place. Two hundred and sixty thousand United States dollars (US$260,000.00) were sourced through the Government of Taiwan and with an arrangement with IBM, to provide two-week computer related training courses. Ten persons, selected on the basis on demonstrated aptitude, were chosen to undergo more advanced training in Microsoft systems engineering. This training was scheduled to be undertaken in November 2001 and other training programmes, in areas such as web design, were being planned. Meanwhile school computer laboratories were being made ready and the Ministry of Education has plans to set up a Technical Unit to deal with systems trouble shooting and computer repair. The government was also facilitating the importation of computers through the various credit unions.

This is the manner in which the information and communications technology programme for Saint Vincent and the Grenadines was taking shape after seven months of a new administration.

Trinidad and Tobago

Prior to resuming government in 2000 the United National Congress in its pre-election manifesto identified: "an intelligent nation" as one of nine national objectives, expanding,

In the emerging knowledge economy, which is driven by information technology and the rapid pace of globalisation, sustainable development is fuelled by ongoing development of human and intellectual capital.

Over the next five years, the full impact of our strategic initiatives in education and training will help propel our economy and our country to the status of a developed country.

The Government of Trinidad and Tobago appears to have embraced the opportunity presented by the advances in information and communications technology with some enthusiasm. It has responded with policy statements, but also with a substantial commitment of people and other resources and with the creation of several new institutions, including a new Ministry of Communications and Information Technology, which had a mandate "to become the central planning, policy, advisory and monitoring agency for Trinidad and Tobago's ICT sector.

A list of the "new" information related agencies established by the government is instructive:

- E-Government Unit

- Freedom of Information Unit

- E-Commerce Secretariat

- Distance Learning Secretariat

- National Library and Information Systems Authority (NALIS)

- TT Post (a privatised postal agency to replace the previous Postal Services)

In an all embracing, broad brush approach, Trinidad and Tobago set themselves the ambitious agenda of establishing not just an information economy, but a knowledge society. It is an important difference. The first approach would involve, among other things, the development of a profitable information services sub-sector as a sort of enclave industry which would have minimal impact on the society as a whole. The second approach involves the use of technology as a deliberate tool of community empowerment, and as a vehicle to transform the manner in which the country goes about its business and the way in which the people live their lives.

To this end, government embarked on programmes geared towards developing electronic commerce as a vehicle of business expansion; improving library and information services; facilitating the use of information and communications technology in government departments, telecommunications reform.

Information technology in the public service

A policy for the use of information technology in the public service had been drafted since 1998 in which the following strategic objectives were outlined:

"It is the intention of the Government to:

- *build a technology enabled public service in order to increase the efficiency and effectiveness of the formulation and execution of policies, plans, and programs of the Government;*

- *facilitate a "Total Quality / customer service / customer satisfaction" culture in the Public service;*

- *enhance the appropriate and valued knowledge and skills of public servants;*
- *facilitate the effectiveness of IT in the community, by inter alia, liberalizing the telecommunications market, supporting standards and promoting open systems concepts;*

- *develop and implement an electronic information infrastructure to make it possible to share information and computer resources, as well as to rationalize operations, enterprise wide; and*

- *become a model in the efficient and effective use of IT as an example for emulation by the other sectors.*

A National Information Systems Centre (NISC) was established with responsibility for strategic IT planning and IT standards, development and implementation of IT solutions. The work of this centre was supported by a high level information technology advisory group. Some of the group's recommendations spoke to the issue of managing the change that must of necessity accompany such sweeping adjustments in procedure.

The public sector's IT policy document recommended that all public sector organizations would identify, develop, document, and safeguard with appropriate disaster recovery plans IT projects aimed at increasing efficiency and effectiveness.

The NISC's initial role was the procurement of computer and other electronic equipment for government departments. The Centre also facilitated a decentralised system of data processing.

Evolution to e-government

An E-Government Unit was established in March 2001. Negotiations were ongoing with potential vendors to install a communications backbone to connect all government departments and give the public online access to government services. Meanwhile, a comprehensive government website was designed.

Distance education

The government approached the issue of education with an equally broad brush. In response to what has been described as "critical supply deficiencies", a Distance Learning Secretariat was established in December 1998 and staffed with 10 persons: a Director, curriculum development specialist, a research and development officer, and a marketing officer with other support staff. The Secretariat which came under the auspices of the Ministry of Training and Distance Learning and later absorbed into a new Ministry of Human Development, Youth and Culture, was described by the then Minister as:

> *"A deliberate policy initiative that was responsive to the private and social (public) requirements for development of the people of Trinidad and Tobago, that is, individually as citizens and collectively as a country"*

The most visible achievement of the Distance Learning Secretariat was the establishment of community based distance learning centres in various areas of the twin island republic. At the time of writing, 19 centres had been established, 17 in Trinidad and 2 in Tobago. In the financial year 1999/2000 a budget of one million dollars was allocated to the Distance Learning Secretariat. Government TV and radio channels were the main vehicles of dissemination. One dominant focus of the programmes was entrepreneurship training. Mathematics, Spanish, and Principles of Accounts - delivered through the Government Information Television channel - were among other programmes offered. Speaking at the commissioning of a Distance Learning Centre in 2000, the then Minister expressed the vision in this way:

> *"We must see technology not as a substitute for teaching and learning - but as a tool to help teachers teach and learners learn at the highest levels of efficiency."*

Library and information services with NALIS

Another agency created during this time, was the National Library and Information System Authority, (NALIS) which came into being with the passage of Act No.18 of 1998: an act to establish the National Library and Information System, to provide for the development and co-ordination of all library and information services in Trinidad and Tobago. In its strategic plan for 1999-2004, NALIS envisioned itself as

> *"A dynamic nationwide information network, entrepreneurial and customer oriented in outlook, which, in partnership with other institutions will lead and facilitate developments to achieve a highly effective coordinated network of libraries, offering information services to the nation and the world, utilizing state of the art technology ... the world's leading documentary resource for a knowledge and understanding of Trinidad and Tobago"*

The government has allocated a significant amount of resources to NALIS. In 1993 the total allocation for books for the entire country was TT$150,000.00. This annual allocation has increased steadily and now stands at three million Trinidad and Tobago dollars. (TT$3,000,000 = US$500,000 approximately) for the 2000-2001financial year. As recently as1999, only 4 scholarships were awarded for the study of librarianship. However in 2001 that figure has jumped to 30.

Early in 2001, a Ministry of Communications and Information Technology was established, with the mandate to become "the central planning, policy, advisory and monitoring agency for Trinidad and Tobago's ICT sector."A communique issued by the Ministry to record the successes of its first seven months outlined the vision in this way: "to facilitate the creation of a globally competitive technology-driven society."

Underpinning all these developments is a well advanced plan to create a government communications backbone to facilitate a public service Intranet.

Legislation

An Act for the regulation of Telecommunications in Trinidad and Tobago was assented to on July 5th 2001.

Electronic commerce

The Government of Trinidad and Tobago set up an Electronic Commerce Committee in January 2000 with a mandate to:

examine Trinidad and Tobago's current environment and formulate policy recommendations, which would allow the country to reap the maximum benefits from the new digital economy[3].

The Committee, comprised of members of the private and public sectors submitted a final report to cabinet in June 2000. The Committee articulated the role of the government in this way:

Government's principal role is to facilitate the creation of an environment that facilitates the expanded use of e-commerce and its related technologies by the private sector, government and individuals.

As a direct result of the committee's report, an e-commerce Secretariat was established and a national e-commerce coordinator appointed. By May 2001, the Secretariat had produced a national e-commerce action plan which had five main thrusts:

- strengthening the e-commerce infrastructure by encouraging more telecommunications service providers to enter the market; increasing bandwidth to speed up access,

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[3]   Trinidad and Tobago. National e-commerce action plan. May 2001

facilitating the use of more value added services; and establishing a domain name registry

- increase participation in e-commerce by setting up: an IT support Unit, a web site tentatively called EnterpriseNeTT intended to be the online home for micro, small, and medium enterprise e-business in Trinidad and Tobago; developing enhanced customs procedures and overseas wharehousing; establishing community and home based access centres; and embarking on various initiatives to provide e-commerce education and Internet awareness; and making telephone Internet services more affordable.

- clarification of marketplace rules with respect to intellectual property, e-commerce labour laws, online content law, Internet taxation, conflict resolution mechanisms and self-regulatory better business initiatives.

- building confidence in e-commerce through privacy protection education; consumer protection mechanisms; consumer education; the establishment of an electronic certification authority; and the creation of a Cyber-Crime Unit within the police service.

- jump-starting the e-economy by facilitating onshore payment; developing a strategy to encouraging the use of e-cash; an identifying e-commerce opportunities.

The regional response

Some regional and international organizations have been actively trying to assist governments in one or more of the following ways:

- using the technology to achieve greater efficiencies in the execution of their own programmes of assistance to governments

- leading efforts to inform and advise governments in areas such as, e-commerce, e-government, and telecommunications liberalisation

- conducting studies and convening meetings and seminars

The activities of a few of these organizations are briefly described below.

Caribbean Epidemiology Centre (CAREC)

CAREC's business is health, in particular, monitoring and preventing the spread of diseases, both infectious and chronic. Perhaps because of the life and death nature of its mission and the limitation of its financial resources, CAREC has aggressively sought to use technology in an effort to do more with less. The Centre recently established C-Health.Net which is intended to serve as a health

information portal for all of CAREC's stakeholders, mainly health professionals and personnel in the Ministries of Health in the countries of the Caribbean.

C-Health.Net was conceived as a channel for communication, product distribution and information collection. It is also expected to be used to facilitate the production and dissemination of health information and assist in the conduct of training programmes. Aligned in a strategic partnership with Dakota Networks Caribbean, CAREC, through C-Health.Net provides online access to information on health status and trends in the region. Through the use of VSAT (Very Small Aperture Terminal) technology, C-Health.Net offers high speed broad band access to the Internet. It also has the capacity for on-line video conferencing, satellite enabled telephony and web hosting.

Plans are in the pipeline to extend the capability of C-Health.Net to facilitate real time data collection, remote diagnosis, (already done successfully on an experimental basis) and distance education.

Caribbean Community Secretariat (CARICOM)

The CARICOM Secretariat has, not surprisingly, taken the position that an integrated approach to exploring the potential of the information and communications sector in the region would serve its Member States best. The focus of the Secretariat has therefore been on the need for the region to "work collaboratively towards bridging the already widening gap between the information rich and information poor". A regional approach guided by the need to address issues of security, access, choice and diversity and supported by an enabling legal and regulatory framework, and underpinned by an adequate programme of human resource development was therefore recommended. This approach has considerable merit because it is in the process of sharing information that faster progress could be achieved
.

At the request of the CARICOM Council on Trade and Economic Development the Commonwealth Fund for Technical Cooperation, engaged a consultant to conduct a study on the e-business capacity of individual Caribbean countries, the rationale for which was the need to find new ways of doing business in a competitive global environment.

The study, entitled: "A rainbow technology for a rainbow people: e-business capacity development for the CARICOM: report of a diagnostic mission" was carried out by Alwyn Singh. It sought to discover the degree of e-readiness by first examining the available infrastructure in the region. Was there inexpensive access to hardware, to the Internet? Was there a reliable power supply and was there an adequate supporting banking system? It also attempted to determine the nature, trends, volume and scope of e-business activity in the CARICOM region by finding out: the number of persons who had access to the Internet, the number of Internet based transactions, the monetary value of these transactions, the businesses and sub-sectors involved, and the number of CARICOM-based web sites. The study also identified options for development of the e-business sector in CARICOM having regard to the cross jurisdictional issues which would arise as a consequence of policies on the free movement of capital, stock, and capital market integration.

It is a useful source of information containing as it does, a succinct description of the e-business activities of each CARICOM country, the status of telecommunications liberalisation efforts, institutions which had been set up by governments to promote and facilitate e-business, and comments on the supportive legislative framework. This study is to be presented to CARICOM governments as part of a broader effort to influence in a positive way the further development of information and communications technology and services in the region.

The CARICOM Secretariat recently collaborated with the Government of Antigua and Barbuda's Information Technology Centre to hold a conference on e-government. (November 2001, Antigua). The conference, dubbed "Techfest" was followed by a CARICOM sponsored workshop which sought to determine best practices and establish collaborative relationships among CARICOM Member States in an effort to raise their level of e-readiness.

Caribbean Development Bank (CDB)

CDB also has a programme for information and communications technology. The Bank has given financial and technical support to several of its borrowing member countries to develop their IT sectors. In addition it has sponsored workshops on the subject. One such workshop was held in Jamaica on April 3-5, 2001, in partnership with UNESCO, the Commonwealth Secretariat, and the Government of Jamaica to devise a regional strategy for informatics. It was attended by participants from several Caribbean countries. The Bank has also supported the work of the Consultative Committee on Caribbean Regional Information Systems (CCCRIS), now referred to as the Caribbean Information Action Group, which monitors developments in information systems in the region.

Economic Commission for Latin America and the Caribbean - Subregional Headquarters for the Caribbean

ECLAC's role has traditionally been one of research and fact finding, training, organizing, and pioneering the use of certain applications. One obvious indicator of the involvement of the ECLAC Subregional Headquarters for the Caribbean in facilitating greater use of information and communications technology in the region is its commitment of time and resources to the carrying out of this present study which is essentially a compilation of information about what individual governments and regional agencies are doing in this area. It should in the short term at least, serve the useful purpose of informing other agencies about current activities, and reveal gaps still requiring intervention. It should also reveal to government policy makers actions which other countries have taken and assist them in developing their own policies. ECLAC's involvement however, extends way beyond this present work. Other useful initiatives have already started and more are in the planning stages.

The Caribbean Digital Library (CDL), a collection of electronic documents in full text was established a year and a half ago (May 2000) to facilitate access to web-based Caribbean policy, technical, and research documents in a wide variety of subject areas. This project is being implemented under the umbrella of the Caribbean Digital Library Consortium, a loose grouping of

institutions which contribute to the growth of the CDL by adding documents regularly. The CDL can be accessed at www.eclacpos.org/cdl This activity also has the support of the membership of the Caribbean Information Action Group.

ECLAC has compiled and updates annually, selected macroeconomic indicators for each member country of the Caribbean Development Cooperation Committee (CDCC). The tables can be viewed on the ECLAC web site at http://www.eclacpos.org/ProgrammeUnits/econstats/default.htm. ECLAC is also developing a web-base regional database of Social Indicators and it is currently promoting the use of its Redatam software as a means of adding value to census data. A database of projects and programmes related to Small Island Developing States (SIDS) is also being maintained. In addition, all technical documents produced by ECLAC are accessible through its web site at www.eclacpos.org.

Organisation of Eastern Caribbean States (OECS) and the Eastern Caribbean Telecommunications Authority (ECTEL)

The Organisation of Eastern Caribbean States (OECS) in keeping with its policy and practice of functional cooperation, was mandated to act on behalf of its Member States in the matter of telecommunications reform and other areas necessary to support the development of an efficient IT sector. Through a recently established organ, the Eastern Caribbean Telecommunications Authority (ECTEL), the OECS assumed a strong leadership role in advancing the process of liberalising the telecommunications sector in the OECS Member States.

Model telecommunications legislation was prepared on ECTEL's behalf and circulated among the OECS Member States. Five States (Grenada, Dominica, St. Kitts and Nevis, Saint Lucia, and Saint Vincent and the Grenadines, that is, all independent OECS States except Antigua and Barbuda) subsequently signed telecommunications reform bills, which among other things, released them from the telecommunications monopoly previously enjoyed by Cable and Wireless. ECTEL has also commenced a distance programme for telecommunications regulations.

A recent and quite revolutionary related development was a decision that would allow telephone calls between OECS signatories to the ECTEL Treaty to be charged at local rates.

The OECS Secretariat has spearheaded other programmes as well. OECS Member States received loans from the World Bank and the International Development Association to be used to procure information and communications technology services, in an effort to provide "the framework for Information and Communications Technology to become a lead sector in these economies".

Conclusion

Much is often made of the similarities of Caribbean countries. This study revealed some distinct differences in approach, in expectations and in focus.

Barbados with its reputation for quiet efficiency took a cautious iterative approach, making a commitment to the overall development of Barbados and not to the development of the ICT sector for its own sake. Currently 31st on the world human development rankings, and numbered among the countries with high human development, Barbados has set itself the goal of becoming the "smallest developed country in the world". But its approach has been as always conservative and deliberate. The information services sector in Barbados has been an important contributor to that country's economy for several years and a significant employer, especially of women. But this has not placed them ahead of the pack. Most of the recent investment has been in education. No matter which way things go, this investment will not be wasted. Meanwhile they listen and watch and learn from the achievements and also the mistakes of those who might have been more precipitate.

In the case of Saint Lucia, the implementation of information technology policy lies mostly in the hands of a group of committed, mostly young, technocrats, who, unfettered by excessive bureaucracy, bring impetus and enthusiasm to the transformation process. The pace of developments seem determined by the personalities and talents of the players, free to use their initiative within certain common sense limits. They have achieved an admirable level of progress, particularly in the area of electronic government.

Guyana's dogged insistence on pursuing the course which it had set for itself was also interesting to observe. They are forging ahead with development assistance to define and create an information and telecommunications sector to suit their own particular need. They are also doing so in defiance of development agencies which have suggested that basic needs, such as roads, should be met before ambitious incursions into information and communications. The government has taken the firm position that the information and communications technology developments is a basic need, especially in a country as sprawling and as geographically challenging as Guyana.

Saint Vincent and the Grenadines' approach has been pragmatic, problem solving and people centred. They have used the assistance of the OECS to good effect in a number of ways, the most obvious being telecommunications reform. They have also taken some urgent steps to translate policy into employment opportunity. They are moving ahead deliberately without a grandiose (or even a grand) vision, taking practical steps to educate people for, and then employ young persons in, the new information industry.

Trinidad and Tobago has gone the way of creating new institutions and giving them the financial resources to deliver the required outcomes. There has been a fair amount of information sharing among these agencies, but some older agencies need to be brought more fully into the new dispensation if an adequate return on all the investment is to be realised.

This paper makes no pretences to being an in-depth analysis. Rather, it is a report of our observations. What is clear is that there has been a recent flurry of activity and investment surrounding information and communications technology and services in the Caribbean. There has been visible, even dramatic signs of progress in some areas. But the jury is still out as to whether the hoped for economic benefits will materialise.

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Information Sources - Selected Caribbean Government Web Resources

Barbados

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http://www.belgrafix.com/Government/   Government of Grenada

Guyana

http://www.bankofguyana.org.gy/   Bank of Guyana

http://www.guyana.org/govt/embassy.html   Guyana Embassy, Washington, DC

http://www.sdnp.org.gy/gina/   Guyana Information Agency

http://www.iastguyana.org/   Institute of Applied Science and Technology

http://www.sdnp.org.gy/minedu/   Ministry of Education

http://www.sdnp.org.gy/minfor/   Ministry of Foreign Affairs

http://www.sdnp.org.gy/mohss/   Min. of Labour Human Services Social Security

http://www.sdnp.org.gy/mtti/   Ministry of Tourism

Jamaica

http://www.statinja.com/   Statistical Institute of Jamaica

http://www.mnsj.gov.jm/   Ministry of National Security and Justice

http://www.jdfmil.org/   Jamaica Defence Force

http://www.mct.gov.jm/   Ministry of Industry, Commerce and Technology

http://www.jhcuk.com/   Jamaican High Commission - United Kingdom

http://www.congenjamaica-ny.org/   Consulate General of Jamaica, New York

http://www.cabinet.gov.jm/   Cabinet Office of the Government of Jamaica

http://www.un.int/jamaica/	Permanent Mission of Jamaica to the United Nations
http://www.nrca.org/	National Environment and Planning Agency
http://www.mof.gov.jm/	Ministry of Finance and Planning
http://www.moh.gov.jm/	Ministry of Health
http://www.minlab.gov.jm/	Ministry of Labour and Social Security
http://www.mtw.gov.jm/	Ministry of Transport and Works
http://www.sc.gov.jm/	Supreme Court of Jamaica

St Lucia

http://www.stlucia.gov.lc/	Government of St Lucia
http://www.opsr.org	Office of Private Sector Relations
www.stats.gov.lc	St Lucia Statistical Office

St Vincent and the Grenadines

http://www.nbcsvg.com/	National Broadcasting Corporation
http://www.svgtourism.com	Ministry of Tourism
http://www.carnivalsvg.com/	St Vincent and the Grenadines Carnival

Trinidad and Tobago

http://www.ttparliament.org/	Parliament of the Republic of Trinidad and Tobago
http://www.tstt.co.tt	Telecommunications Services of Trinidad & Tobago
http://www.ttgov.gov.tt	Trinidad and Tobago Government
http://www.foreign.gov.tt/	Ministry of Enterprise Development, and Foreign Affairs (MEDFA).
http://www.tidco.co.tt/	Tourism and Industrial Development Company of Trinidad and Tobago Limited (TIDCO)
http://www.central-bank.org.tt/	Central Bank of Trinidad and Tobago
http://opm.gov.tt/opm/index.html	Office of the Prime Minister
http://www.agla.gov.tt/agla/index.html	Office of the Attorney General and Ministry of Legal Affairs
http://www.finance.gov.tt/	Ministry of Finance

http://www.ict.gov.tt/ict/default.asp   Ministry of Information and Technology

http://www.energy.gov.tt/   Ministry of Energy and Energy Industries

http://www.ipo.gov.tt/   Intellectual Property Office

http://www.ttdf.mil.tt/   Trinidad and Tobago Defence Force

http://www.ema.co.tt/main.htm   Environmental Management Authority

http://www.ngc.co.tt/   National Gas Company of Trinidad and Tobago Limited

http://www.petrotrin.com/   Petroleum Company of Trinidad and Tobago Limited

Regional

http://www.oecs.org   Organisation of Eastern Caribbean States

http://www.ectel.org   Eastern Caribbean Telecommunications Authority

http://www.caribank.org   Caribbean Development Bank

http://www.carec.org   Caribbean Epidemiology Centre

http://www.caricom.org   CARICOM Secretariat

http://www.eclacpos.org   United Nations Economic Commission for Latin America and the Caribbean Subregional Headquarters for the Caribbean