

# St. Lucia: ICT Assessment

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*18-25 March 2002*



**FINAL: Version 3.0**

# St. Lucia: ICT Assessment

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## Abbreviations and Acronyms

ACS	Association of Caribbean States
C&W	Cable and Wireless
CAGR	Compound Annual Growth Rate
CANA	Caribbean News Agency
CANTO	Caribbean Association of National Telecommunications Organizations
CARICOM	Caribbean Community and Common Market
CDB	Caribbean Development Bank
CET	Common External Tariffs (CARICOM)
CIC	Community Information Center
CLAA	Caribbean Latin American Action
CPTM	Commonwealth Partnership for Technology Management
CSP	Council of Social Partners
CXC	Caribbean Examination Council
DOC	U.S. Department of Commerce
DOT Force	Digital Opportunity Task Force
EC\$	Eastern Caribbean Dollar
ECCB	Eastern Caribbean Central Bank
EC-ICT	Eastern Caribbean Information Communications Technology Initiative
ECLAC	United Nation's Economic Commission for Latin America and the Caribbean
ECTEL	Eastern Caribbean Telecommunications Regulatory Authority (Dominica, Grenada, St. Kitts/Nevis, St. Lucia, St. Vincent/Grenadines)
EDI	Electronic Data Interchange
EMS	Education Management System
EU	European Union
FATF	OECD Financial Action Task Force on Money Laundering

FDI	Foreign Direct Investment
FTAA	Free Trade Area of the Americas
G-8	The Group of Eight
GATT	General Agreement on Tariffs and Trade
GDP	Gross Domestic Product
GNP	Gross National Product
IBC	International Business Company
ICT	Information and Communication Technology
IDB	Inter-American Development Bank
ISDN	Integrated Services Digital Network
ISP	Internet Service Provider
IT	Information Technology
ITU	International Telecommunications Union (UN)
kbps	Kilobits per second
Km	Kilometers
LAN	Local Area Network
Mbps	Megabits per second
MHz	Mega (million) Hertz (cycles/second)
MOC	Ministry of Commerce
MOP	Ministry of Planning, Development, Environment & Housing
NDC	National Development Corporation
NGO	Non-Government Organization
NITTF	National Information Technology Training Fund
NTRC	National Telecommunications Regulatory Commission
OECD	Organization for Economic Cooperation & Development
OECS	Organization of Eastern Caribbean States
OPSR	Office of Private Sector Relations
PC	Personal Computer
PM	Prime Minister
PPP	Purchasing Power Parity
PSDS	Private Sector Development Strategy
PWC	PricewaterhouseCoopers

SME	Small and Medium-Sized Enterprise
SEDP	Small Enterprise Development Project
SEDU	Small Enterprise Development Unit
TA	Technical Assistance
U.K.	United Kingdom
UNCTAD	United Commission on International Trade and Development
UNDP	United Nations Development Program
UPS	Uninterruptible Power Supply
U.S.	United States
USAID	U.S. Agency for International Development
UWI	University of the West Indies
VAT	Value Added Tax
VSAT	Very Small Aperture Terminal
WAN	Wide Area Network
WB	World Bank
W.I.	West Indies
WIPO	World Intellectual Property Organization
WTO	World Trade Organization

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## Management Summary

This Information and Communications Technology (ICT) Assessment was undertaken by Carana Corporation in close coordination with, and in support of, the Organization for Eastern Caribbean States (OECS) and the Eastern Caribbean Telecommunications Regulatory Authority (ECTEL). This work was performed under contract with the U.S. Agency for International Development (USAID) as part of its Eastern Caribbean Information Communications Technology (EC-ICT) initiative.

This Report serves as Phase I of a two-phase effort being coordinated by OECS. Phase II of this effort is being launched in March of 2002 and is being carried out by GOPA (under contract and funding from the World Bank). Whereas this first phase is aimed at compiling and assessing ICT related information for input and recommendations, GOPA's activities are aimed at developing regional policy and strategies based on this, as well as other, input to their initiative. This Phase I will also put forward to USAID considerations for possible future development initiatives as part of their Caribbean Regional Program (CRP).

The ICT Assessment was built around four key areas: (1) **Public Sector**—an examination of the Government of St. Lucia's use of ICTs and its ICT policy and supporting legal/regulatory framework, (2) **Pipes**—an examination of the current state of telecommunications infrastructure, (3) **Private Sector**—an assessment of the current state of the ICT industry sector and the private sector's use ICTs, with focus on growth opportunities, and (4) **People**—a review of the supporting educational systems within the country.

The ICT Assessment defines a number of key opportunities where targeted initiatives can be undertaken that would benefit St. Lucia in each of the four areas. In summary, these are:

- **Public Sector**—At this time, there is no single entity responsible for ICT activities that could facilitate the development of a nationwide ICT strategic and tactical plan. However, there is support for ICTs by the Prime Minister, and there are several key public and private entities that are poised to play a key role should such an effort be undertaken. These include the Prime Minister's Office of Private Sector Relations (OPSR), the National Development Corporation (NDC), the Chamber of Commerce of Industry and Agriculture, as well as others. There is broad-based recognition within St. Lucia that (a) there is the need to pursue an economic diversification strategy, (b) that ICT-enabled industries hold significant promise for economic development and competitiveness, and (c) the liberalization of the telecommunications sector means new opportunities for business and the island. St. Lucia has real potential for providing offshore ICT-related services. At least two call centers are currently in operation, demonstrating the promise of such efforts. The important role of the educational system is also understood and plans are in place to improve ICT education across the secondary school system. An all-encompassing National ICT Master Strategy would (a) serve to unite the various entities, (b) sharpen

the focus on specific activities that need to be undertaken, and (c) advance the growth of the ICT sector in St. Lucia.

- **Pipes**—This area is already being addressed by market liberalization efforts underway via ECTEL and the National Telecommunications Regulatory Commission (NTRC). New licenses are currently being issued that will result in additional investments in the telecommunications sector, increased market competition, and, ultimately, lower prices. Key initiatives put forward in this area of the ICT Assessment focus on ensuring rural areas with lower density and lower income levels are not overlooked and are provided Internet access via shared-access centers. Specific emphasis is placed on leveraging current education initiatives and expanding/opening up current facilities for the delivery of Government services, business development support, health-related services, adult education, etc.
- **Private Sector**—The private sector’s reliance on ICTs is hampered in large part by high telecommunications costs. This issue will be somewhat eased by the liberalization of the telecom market throughout the region. However, since small and medium-sized enterprises (SMEs) comprise the majority of domestic businesses, there is the need to help them leverage ICTs beyond their internal administrative and back office processes and use them more in their core business processes. In addition, there is the need to utilize ICTs to reach out to regional and international markets and to improve competitiveness. Here, ICTs hold significant promise. There is a need to provide internationally-oriented business development support, build a regional Caribbean product/service Web portal, and develop key upstream warehousing and distribution services in target markets. There is also the opportunity to attract foreign direct investment (FDI) for ICT-enabled businesses such as call centers and data storage centers.
- **People**—While the population of St. Lucia is reasonably literate (an estimated 67 percent), and PCs/Internets are now entering secondary schools, there has not been much of a focus in St. Lucia (or in the region), in building IT technical skills to support the growth of ICT usage in the public and private sectors. System support and maintenance remains an employment opportunity throughout the region. Although distance learning has great potential in this arena, the communication costs are prohibitive. Again, with the promise of a more liberal telecom environment, this situation is expected to change in the near-term. The Ministry of Education, in cooperation with the OECS, plans to address the growing need for ICT-related education. However, much work remains that will require significant commitment by the Government and donor community alike.

The main body of the ICT Assessment report puts forward recommendations for consideration by OECS. These are constructed to provide direct input into the Phase II initiative being undertaken by WB/GOPA. In addition, a separate set of recommendations has been developed for consideration by USAID. These are preliminary and are published under a separate cover as their value is for USAID’s internal use only.

The ICT Assessment Team wishes to thank Mr. Wayne A. Vitalis, General Manager of the National Development Corporation (NDC) along with several key members of NDC, including: Avril Edwin, Manager Investment Promotion Division; Anthony Greene, Investment Promotion Officer; Nigel A.M. Mitchell, Manager, Project Management Unit (PMU); and O'Donovan K. Yarde, Project Officer, PMU. In addition, we wish to especially thank Mr. Michael T. Chastanet ESQ, OBE, current Chairman of St. Lucia's NDC, for the opportunity to discuss preliminary findings of our efforts and gain his insights/perspectives.

In addition, the team wishes to thank those within OECS, the various Government Ministries, donor organizations, NGOs, and private sector firms who were so generous with their time and patient during the course of our conversations. We trust this combined effort will lead to meaningful ICT-related action that will bring about substantive improvements throughout the OECS region and St. Lucia.

# St. Lucia: ICT Assessment

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## *I. Background/Context*

This Information and Communication Technology (ICT) Assessment has been undertaken by Carana Corporation, under contract to the U.S. Agency for International Development (USAID). The Assessment is part of a larger initiative being undertaken by USAID/Carana in support of the Organization of Eastern Caribbean States (OECS), specifically to provide technical assistance to the Eastern Caribbean Telecommunications Regulatory Authority (ECTEL) and the five National Telecommunications Regulatory Commissions (NTRCs).

In summary, the technical assistance being provided to OECS, ECTEL, and the NTRCs, is primarily oriented toward telecommunications market liberalization in the region. However, this Assessment is in support of an even larger purpose--that of seeking to leverage ICTs for economic growth within the Eastern Caribbean region.

This ICT Assessment reaches beyond the telecommunications issues; it seeks to gain a broader understanding of the overall utilization of ICTs in St. Lucia and to analyze supporting educational and Governmental considerations. The primary purpose of the Assessment is to identify current constraints to and opportunities for advancing ICTs in the region. The ICT Assessment is being coordinated closely with the OECS Secretariat and is considered Phase I of a two phase initiative. Phase II is a regional policy and strategy initiative being carried out by GOPA through World Bank funding. Thus, this ICT Assessment will serve as a precursor to the follow-on GOPA regional policy and strategy work.

This ICT Assessment for St. Lucia is the third of five ICT Assessments to be carried out for each of the ECTEL countries. The Assessment was carried out between March 18-25, 2002. Combined, these five ICT Assessments will provide direct input into the GOPA initiative that is scheduled from March-June 2002.

In addition to providing support to OECS/ECTEL, this ICT Assessment is being carried out in a manner consistent with USAID's focus on leveraging ICTs in developing and emerging economies. In recent years, USAID's increased attention on using ICTs for international development was reinforced by the G-8 Summit that took place in July 2000 at Okinawa, Japan, and the subsequent adoption of the Digital Opportunity Task Force (DOT Force) Agenda in Genoa, Switzerland in 2001.<sup>1</sup>

In large part, this increased global focus is predicated on the growing awareness of the impact that ICTs have had on the U.S. economy over this past decade. While the "dot-com bubble" has created market uncertainties, for the most part, the market has sorted out the excesses. The actual impact of ICTs has been captured and well documented in a series of

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<sup>1</sup> See DOT Force official Web site at <http://www.dotforce.org/about..>

annual reports prepared by the U.S. Department of Commerce, culminating with the June 2000 report, *Digital Economy 2000*.<sup>2</sup> A brief summary of this report is reflected in Appendix A.

## ICT Assessment Structure/Approach

This ICT Assessment has been structured in such a manner as to provide not only a basic uniformity among the five ICT Assessments being carried out for ECTEL, but also a level of consistency with similar USAID-funded assessments. As such, it relies on a “4-Ps” template in an effort to capture and categorize information from a wide array of sources and to present it to the reader in a readily digestible format. The four “Ps” are as follows, with a section of this report devoted to each:

- 1) **Public Sector**— This section is primarily focused on (a) Government ICT policy and the supporting legal/regulatory framework and (b) the actual use of ICTs by the Government. The coverage of telecommunications policy is minimal due to parallel ECTEL/NTRC work in this area.
- 2) **Pipes**—The thrust of this section is on telecommunications infrastructure, access, and price. It relies upon a core set of information from the International Telecommunications Union (ITU) Development Indicator reports.
- 3) **Private Sector**—This section examines the state of development of the IT industry sector and the use of ICTs by traditional businesses.
- 4) **People**—This section analyzes the education systems relative to producing students and workers with ICT-related skills.

From a methodology perspective, this ICT Assessment was carried out in two parts: (1) research based on a number of prior ICT-related studies and reports produced over the past 2-3 years by various organizational entities, and (2) a one-week on-the-ground assessment during which time a number of interviews were undertaken with individuals from the public, private, and educational sectors. Naturally, with such an abbreviated approach, this ICT Assessment report will not capture all the details.

In this regard, the ICT Assessment is a survey intended to gather sufficient information across a broad array of ICT-related sectors, but it is not designed to be a comprehensive reporting of details (several others have done an excellent job of this in selected areas). This Assessment intends to support recommendations put forward to OECS and USAID regarding potential areas for future engagement. Its purpose is to be a catalyst, not a catalog.

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<sup>2</sup> *Digital Economy 2000*, U.S. Department of Commerce, <http://www.esa.doc.gov/de2k2.htm>.

## Prior ICT-Related Studies

The Bibliography, captured in Appendix C, reflects a number of information sources, including earlier studies, which have been taken into account in carrying out this ICT Assessment. Many of these proved to be invaluable resource materials in preparing this report. One of the more recent, and valuable, reports was undertaken in June-August of 2001, by Alwyn Didar Singh on behalf of the Commonwealth Fund for Technical Cooperation. The report, *A Rainbow Technology for a Rainbow People: E-Business Capacity Development for the CARICOM*,<sup>3</sup> incorporated the Harvard Center for International Development's "Readiness for the Networked World" assessment methodology as part of its analysis.<sup>4</sup> As such, the report reflects a country-by-country review of key ICT-related readiness issues using the Readiness Guide's e-readiness framework of:

- ◆ Infrastructure Framework (Connectivity and Cost)
- ◆ Policy Framework (E-Leadership and Participation)
- ◆ Legal Framework (Security and Privacy)
- ◆ Human Capacity Framework (E-enabled Human Capital)
- ◆ E-Business Environment: Enabling Seamless E-Commerce
- ◆ The International and Regional Framework.

This ICT Assessment in no way seeks to duplicate the excellent efforts of this study, but rather intends to help move an ICT agenda forward in key areas of interest to St. Lucia, OECS, and USAID.

## The Country of St. Lucia

St. Lucia is a small island nation within what are considered the Windward Islands of the Caribbean. The country gained its independence from England on February 22, 1979. The island is 238 square miles in size with a population of 158,178 (2001 estimate). St. Lucia's capital city is Castries, with Micourid, Gros-Islet, Vieux Fort, and Soufriere being the island's secondary cities. Land use is agriculture-cultivation (21%), forests and woodlands (13%), arable land (8%), permanent pastures (5%), and other (53%). These are 1993 estimates.

The Government is a Westminster-style parliamentary democracy, with the Prime Minister as head of the Government. There is a Cabinet that is appointed by the Governor General (on the advice of the Prime Minister). The Legislative Branch consists of a bicameral Parliament consisting of a Senate with 11 seats—6 members being on the advice of the Prime Minister, 3 on the advice of the leader of opposition, and 2 after consultation with religious, economic, and social groups. The House of Assembly has 17 seats with members elected by popular vote (each serving a five-year term). Administratively, St. Lucia is divided into 11 quarters.

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<sup>3</sup> Alwyn Didar Singh, *A Rainbow Technology for a Rainbow People: E-Business Capacity Development for the CARICOM (draft 15.0.01)*, Report of Diagnostic Mission, Commonwealth Fund for Technical Cooperation, Commonwealth Secretariat, London, June-August 2001 (hereinafter "*Rainbow Report*").

<sup>4</sup> "Readiness for the Networked World," <http://www.readinessguide.org>

St. Lucia has a Gross Domestic Product (GDP) on a Purchasing Power Parity (PPP) of approximately US\$700 million (2000), with a GDP per capita of US\$4,500. The St. Lucia GDP (1999) is comprised of Services (57%), Industry (32.5%), and Agriculture (10.7%). The currency of St. Lucia is the Eastern Caribbean dollar (EC\$) which has an exchange rate of EC\$2.7 to US\$1. Major trading partners are its neighboring CARICOM countries (exports are 16%, imports 22%), the U.K. (exports are 50%, imports 11%), and the U.S. (exports are 24%, imports 36%). The labor force consists of approximately 43,800 workers, with an estimated 15% unemployment. The population is reasonably literate (estimated at 67%), with English as the dominant language. The labor force consists of: agriculture (43.4%), services (38.9%), and industry and commerce (17.7%).

# St. Lucia: ICT Assessment

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## *I. Public Sector*

A critical component of this ICT Assessment was an evaluation of the Government of St. Lucia's position relative to ICTs. Specifically, this focused on two key areas:

- 1) The Government's policy and legal/regulatory framework pertaining to the areas that directly and indirectly impact the widespread deployment and utilization of ICTs within St. Lucia (specifically with regard to telecommunications and e-commerce); and
- 2) The Government's actual use of ICTs to provide e-government services and benefits to citizens and to automate and streamline key Ministries and the functions/activities that they carry out.

### **Summary/Analysis**

#### National Plan

At present, the Government of St. Lucia has no national plan or strategy for the deployment or utilization of ICTs. It also lacks strong, visible leadership within the public sector for ICTs; it has no Government ICT "czar" or designated office providing critical Government commitment and leadership to the deployment and utilization of ICTs in St. Lucia. It does, however, have a couple of separate ICT committees nestled within various Ministries. The Ministry of Planning (MOP) has a National Science Council with an IT Subcommittee and the Ministry of Commerce (MOC) has an ICT Committee, but neither of these appears to have any energy or momentum to build on. Both of the committees, however, could make significant contributions to a national ICT planning process. The National Science Council's IT Committee recognized after a few meetings that a regional ICT strategy and strong private sector participation was needed to effectively address the use of ICTs on a national level and, therefore, decided to hold off on its work until these elements were in place.

Despite a fairly good Government web portal loaded with country statistics, there appears to be a genuine lack of understanding by senior Government officials of the benefits of ICTs for improving the efficiency of their own Ministry operations and providing services to citizens. Although there is a general awareness of the importance of ICTs for economic growth, the Government clearly does not know how to proceed. This, however, is not unique. The Government of St. Lucia -- as in other islands that were assessed -- has not defined its overall plans for economic development in the "post-preference era" following the end of EU banana subsidies. Additionally, the Government and private sector need to examine the country's traditional industry sectors and resources and determine what role ICTs could play in enhancing regional and international competitiveness in these areas. It is encouraging that various persons within the Government expressed interest in working together with the other OECS countries as a regional entity to develop their economies and promote ICT services.

Recognizing that the country's economy must be restructured and repositioned, the Ministry of Planning developed a Medium Term Development Plan for 2000-2002 (Plan) setting forth medium term development goals and objectives and strategies for achieving them. Agriculture, tourism, education and human resource development, financial services, and technology are listed as the core industries of the Government's development strategy. The Plan states that, "the Government will promote the tourism sector as the leading sector, give greater impetus to agricultural diversification, support the transition in the banana industry by establishing an appropriate regulatory framework, and develop the international financial services and informatics sectors."<sup>5</sup>

The Plan calls for "a broad based economic and social strategy that is underpinned by private sector investment, the continued pursuit of sound macroeconomic and trade policies, enhanced efficiency in resource mobilization, and a private sector investment plan that is focused and of adequate size and composition."<sup>6</sup> In the Plan, the Government committed to the following measures:

- i. Improving the incentives framework to stimulate private sector investment;
- ii. Continuing its tax reform program in order to optimize the structure of the tax base and improve the efficiency of tax collection;
- iii. Adopting a stringent expenditure management policy;
- iv. Improving the human resource base of the country;
- v. Maintaining, modernizing, and strategically expanding the country's infrastructure;
- vi. Improving the access of the wider population to basic social services and amenities;
- vii. Implementing a poverty reduction strategy and plan;
- viii. Implementing the National Environmental Action Plan;
- ix. Introducing an integrated approach to national development planning.<sup>7</sup>

One action taken as a consequence of the Medium Term Development Plan was passage of a new law by Parliament that would revamp the National Development Corporation (NDC). The National Development Corporation Act of 2001 formally vests authority in the NDC to "facilitate, stimulate and promote investment opportunities for investors, to promote the economic development of St. Lucia, and for related matters."<sup>8</sup> The functions of the NDC include facilitating and promoting investment opportunities for foreign or local investors in tourism, hotel development, information technology, agro business, entertainment, or any other economic activity that will be conducive to the economic development of St. Lucia.<sup>9</sup> The Minister of Commerce is currently "responsible for" the NDC, even though it is not officially part of the Ministry.<sup>10</sup>

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<sup>5</sup> *Medium Term Development Plan*, Ministry of Planning, Development, Environment & Housing, 2000 at 12.

<sup>6</sup> *Id.* at 12-13.

<sup>7</sup> *Id.* at 13.

<sup>8</sup> National Development Corporation Act of 2001, No. 23 of 2001, Nov. 1, 2001 at p. 713.

<sup>9</sup> *Id.* at Part I, para. 4(1), pp. 717-18.

<sup>10</sup> *Id.* at Preliminary, para 2(1), p. 716.

The Prime Minister recently appointed a prominent local businessman as the new chairman of NDC and a commercial banker as its General Manager. NDC is currently working with PricewaterhouseCoopers (PWC) on a strategic audit of its operations and seeking PWC's assistance with restructuring the organization. NDC is also working on implementing one of its statutory mandates to establish a "one-stop shop" for business licensing and investor assistance. NDC has requested donor assistance to strengthen NDC and help it refine its goals and mission, implement investor tracking on a pre- and post-investment basis, and improve its portfolio management.

St. Lucia's first Industrial Policy was developed in 2000 "to support the development of businesses so that they can compete effectively in the domestic, regional, and international markets."<sup>11</sup> One of the objectives of the Policy was to target and prioritize the most promising industry sectors for investment. Those listed for "priority consideration" were agro food processing, handicrafts, and information technology.<sup>12</sup>

The Industrial Policy does not elaborate on what the information technology sector would entail, but cited certain advantages due to "niche location," time zone compatibility with North America, English speaking population, and trainable workforce. It noted the "possibility of making St. Lucia a regional 'IT hub' for high-end products and services."<sup>13</sup> References to an ICT industry sector frequently conjures up dreams that the island could be another Bangalore, India and offer offshore software programming and engineering services. While there are certainly some opportunities for software application development, the immediate opportunities seem to be with call centers, "back room" data processing, data bank development, data storage operations, and systems administration services. There are some workforce skills issues, however, associated with each of these.

### Public-Private Sector Relations

St. Lucia enjoys an advantage over other islands that were assessed in that it has established impressive mechanisms for advancing public-private sector relations and interaction. Prime Minister Dr. Kenny Anthony established the Office of Private Sector Relations (OPSR) in 1998 to serve as a link between the Government of St. Lucia and the private sector. Its primary objective is the design and facilitation of strategies to strengthen the private sector, including incentive programs. It is the implementing agency for the Private Sector Development Strategy (PSDS), a Government of St. Lucia/European Union program to accelerate diversification within the St. Lucia economy and enhance St. Lucia's international competitiveness. Its policy-related initiatives are designed to encourage domestic and foreign investment and promote productivity across the economy.<sup>14</sup>

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<sup>11</sup> Industrial Policy of St. Lucia (draft), Nov. 23, 2000 at 3.

<sup>12</sup> Id. at 19.

<sup>13</sup> Id.

<sup>14</sup> *Annual Report 2001*, Office of Private Sector Relations, Office of the Prime Minister, St. Lucia at 1 (hereinafter "*Annual Report 2001*"); *OPSR*, magazine of the Office of Private Sector Relations, Vol. 1, No. 5, Aug. 2001.

The head of the OPSR also serves as the Economic Policy Advisor to the Prime Minister. In this capacity, he was appointed to the Commonwealth Partnership for Technology Management (CPTM) Board as Alternate Director for St. Lucia. In association with the Caribbean Council for Europe, OPSR obtained funding approval for a high-level dialogue between St. Lucia policymakers and executives and directors of UK companies with the focus on St. Lucia's global competitiveness. The CPTM partnership and dialogue resulted in the establishment of a Council of Social Partners (CSP) by Parliament. The CSP became active in the first quarter of 2002 and is designed to serve as the institutional mechanism for consultation and consensus between the public and private sectors. OPSR played a lead role in the design of CSP.<sup>15</sup>

The OPSR teamed up with the NDC and the Bank of St. Lucia and established a National Information Technology Training Fund (NITTF) of US\$1 million to enable local and foreign investors to borrow from the fund to train employees in information technology skills.<sup>16</sup> To date, the NITTF has made loans of approximately US\$185,164 to train 80 employees at two local call centers (40 employees each).<sup>17</sup>

Effective national ICT plans require leadership and support from the highest level of Government. As a launching mechanism, the Prime Minister needs to establish a public/private sector task force to develop a national ICT plan and strategy. He should also designate a key staff person to drive and coordinate the planning process. The task force should include selected private sector participants from industry (including multinational corporations), academia, NGOs, and donor organization representatives. The Ministries of Planning, Education and Commerce and the NDC should participate in this planning effort. This step alone would significantly advance the possibility of widespread deployment and utilization of ICTs in St. Lucia. The OPSR would be a likely choice to spearhead such an initiative. The head of the OPSR is a former executive director of the St. Lucia Chamber of Commerce Industry and Agriculture and currently serves on the Chamber's Executive Committee.

### Legal and Regulatory Framework

There is essentially no legal or regulatory framework to support the use of ICTs. There are no laws pertaining to electronic transactions, electronic signatures and certificate authorities, cybercrime, protection of data, economic espionage, consumer protection, personal privacy, online activities, or e-procurement. Intellectual property laws are modeled after Jamaica's. The Ministry of Commerce is currently evaluating existing intellectual property rights laws.

Without question, the lack of an adequate legal framework will inhibit the use of technology and will certainly deter foreign direct investment (FDI) for call centers, "back room" data processing, data bank development and data storage operations. Due to the upcoming Doha GATT round and recent focus on e-commerce in the Free Trade Agreement of the Americas

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<sup>15</sup> *Annual Report 2001* at 10-11.

<sup>16</sup> *OPSR*, magazine of the Office of Private Sector Relations, Vol. 1, No. 5, Aug. 2001.

<sup>17</sup> *Annual Report 2001* at 12.

(FTAA) countries, it is imperative that any legal initiatives be undertaken in a manner consistent with the global developing legal framework for ICTs.<sup>18</sup>

St. Lucia has taken steps to advance its legal framework to accommodate offshore financial companies. In an attempt, however, to avoid some of the problems other islands have experienced with these companies, St. Lucia is structuring its legal framework to satisfy OECD tax disclosure and U.S. anti-money laundering requirements. St. Lucia's Money Laundering Act applies to all financial institutions and covers a wide range of offenses, including proceeds from fraud, terrorism and corruption. At present, St. Lucia and St. Kitts are the only two ECTEL islands that are not on the OECD Financial Action Task Force on Money Laundering (FATF) blacklist.<sup>19</sup> Other laws applicable to international business corporations include the International Business Companies Act, International Trusts Act, International Insurance Act, International Banks Act, and International Mutual Funds Act. The Registered Agent and Trustee Licensing Act ensures all entities are properly licensed and conducting approved businesses. The Financial Services Supervision Unit is responsible for licensing and monitoring registered international companies. St. Lucia proudly offers online registration for offshore financial service companies.<sup>20</sup>

St. Lucia's overall legal and regulatory framework for conducting business is generally favorable. There are no extremely burdensome licensing or administrative requirements and the tax structure is reasonable. No commercial industries are closed to private enterprise, but all non-St. Lucian businesses or businesses in which a non-St. Lucian holds 25% or more of the voting capital or is a director must obtain a license to trade from the Ministry of Trade. Some activities such as utilities, broadcasting, banking and insurance are subject to Government approval or additional licenses.<sup>21</sup>

The Government of St. Lucia welcomes foreign direct investment (FDI). Tax incentives are usually offered to investors, however, they are focused on industrial (primarily manufacturing) investments and are not applicable to ICT investments. Customs duty reductions and exemptions are available for imports to be used in the incentive businesses. If the Government is going to advance ICTs in the country, it is going to have to come up with an investment incentive package that is attractive to that industry sector. The good news is that the Government recognizes this and has already given tax credits to businesses for expenses incurred in ICT training for personnel. The main problem seems to be that the Government does not know what ICT industries they should be trying to attract or what training and facilities are needed, and, therefore, does not know what incentives to offer. The Government should use caution, however, that incentives to foreign investors do not work against local investors. The perceived favoritism for foreign investors is discouraging to local companies.

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<sup>18</sup> See *Rainbow Report* at 20.

<sup>19</sup> *FATF Annual Report for 2001-2002 released*, Organization for Economic Cooperation and Development, <http://www.oecd.org/EN/document/0,,EN-document-590-17-no-12-31431-590,00.html>.

<sup>20</sup> See [www.pinnaclestlucia.com](http://www.pinnaclestlucia.com).

<sup>21</sup> *Doing Business in St. Lucia: Information Guide*, PriceWaterhouse, 1992 & Supp. 1994 at 3.

As in the other islands, there is no required transparency of legislative and regulatory processes. Draft bills are occasionally dispersed to selected entities or individuals for comment, but there is no central point for the public to view proposed laws and regulations or to submit comments. Enacted laws and regulations are not online. A Consolidated Index of Statutes and Subsidiary Legislation is prepared for several Caribbean countries, including St. Lucia, by the faculty of the law library of the University of the West Indies (UWI) through funding by USAID. The country indices are available, however, only in hard copy upon payment of the required fee. An online capability to access the indices for all countries and to view their statutes and regulations would significantly boost all legal systems in the region and encourage harmonization of laws.

### Ministry of Communications and NTRC

Contrary to some of the other islands, the Ministry of Communications in St. Lucia is one of the weakest supporters of ICTs. Surprisingly, it has very little technical expertise inside the Ministry and claims its two network engineers moved over to the newly established National Telecommunications Regulatory Commission (NTRC).

The NTRC is under the Ministry of Communications, Works and Housing, although it maintains separate offices away from the Ministry. It is responsible for the implementation of the newly enacted Telecommunications Act and the licensing and regulation of communications providers. Although the newly-formed NTRC is quite active, it is clear that additional technical assistance and training would strengthen the agency's operations. Specifically, training for administrative and support personnel would foster a better understanding of NTRC functions, instill professionalism among staff, and enhance communications with the private sector. While the NTRC has close relations with ECTEL and OECS due to geographical advantages, its communications with the private sector are almost nil.

The issuance of top level domains and all domain registration has been contracted to a private sector company, but there were no complaints regarding service. The Government receives no revenue from domain registrations.

### Government Use of ICTs

Government use of ICTs in St. Lucia is moving forward in scattered projects and through separate Ministry plans. The strongest supporter of ICTs is the Ministry of Education. It has a Millennium Project for schools to guide their IT investments and, in December 2001, developed an "Information and Communication Policy Document for the Education System in St. Lucia" based upon the general guidelines of the OECS Education Reform Unit's model strategy document for the OECS region.<sup>22</sup> Comprised of 32 strong ICT Strategy Statements, the Ministry of Education's ICT Policy Document could serve as a model for other OECS education

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<sup>22</sup> *Model ICT Policy Document for the Education System*, OECS Education Reform Unit, Eastern Caribbean Education Reform Project, Information & Communication Technology in the Education Systems of the OECS, June 2001.

Ministries in working up their own strategic plans. The ICT Philosophy statements set forth in the Policy Document include:

- The integration of ICTs in the education system could eventually boost the economic engine of the island since they provide a leveled "playing field" for the creation and distribution of software, information, etc. by its citizens.
- The introduction of ICTs in the Education Sector necessitates the training of all Education Officers, Principals and teachers in the system and, in essence, implies the need for lifelong learning of all stakeholders.
- The implementation and sustenance of ICT projects in the Education System will be via a partnership involving the community, private and public organizations, and funding agencies.
- Curriculum reform as to how ICTs are used in the classroom environment must be reflected in the Education Act.<sup>23</sup>

The Ministry of Education served as a pilot for Education Management System (EMS) software that was installed in 25 schools for web-based education administration management. The software was selected by OECS, who is now working to standardize it. The Ministry found the EMS software a valuable tool and is seeking funding to install it in the remainder of its schools.

The Inland Revenue office and Ministry of Finance are the largest users of ICTs in the Government. The Ministry's Financial Management began as an OECD project funded by the Canadian International Development Agency. The system is fully implemented in the Ministry. Customs also used local advanced ICT expertise to develop an automated system for clearance of duty free items. Additionally, there is a land registry system in the Ministry of Planning that is being converted to a new IT system.

The St. Lucia Court of Appeals is implementing a USAID Administration of Justice Program and is overseeing other islands' implementation on a subset of that project dealing with the use of ICTs to improve efficiency in the judicial system. The Administration of Justice Program deals only with automating records of the islands' Supreme Courts (civil, criminal, probate). Not surprisingly, St. Lucia's courts are the farthest along in implementing these systems. Because the Court of Appeals has supervisory responsibilities for all the islands' Supreme Courts, it is in need of court administration and case management software and a networked infrastructure between the courts. The cost of the communications lines has been the primary inhibitor to this initiative.

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<sup>23</sup> *Information and Communication Technology Policy Document for the Education System in St. Lucia*, Ministry of Education, Human Resource Development, Youth and Sports, Information Technology Unit, Dec. 2001.

Of all Government entities, the Ministry of Health is one of the most lacking in the use of ICTs. There is very limited use of ICTs inside and outside of the Ministry. What PCs they do have are used for word processing. The Ministry has 2 main hospitals, 33 health centers in 8 regions, and two district hospitals that function as outpatient clinics. Almost 2,000 people are employed in the Ministry and its hospitals and clinics, yet they do not have even routine office functions automated. As in Dominica, public health officials urgently need a health "surveillance" system to help detect and report on epidemiological outbreaks and to develop databases. The Ministry has an HIV database and mandatory reporting requirements, but they are not getting timely information from the clinics and people are circumventing the reporting by going off the island for testing. Patient records are held by the patients, and the hospitals desperately need systems to manage medical records, accounting/billing, patient admission/discharge, and pharmacy functions. Victoria Hospital is trying to install an accounting system that will be networked, but this has not been completed. The Ministry is seeking funding from the St. Lucian Government to conduct a study that will identify gaps in the medical records process, but funding is uncertain.

The Government of St. Lucia clearly has the potential to take the lead in shaping an ICT sector through its own use of ICTs and the development of its own internal Government network. The Government needs assistance, however, in developing an overall plan for its system architecture and the enterprise management of ICT resources.

### Government Procurement

The procurement process leaves a great deal to be desired. There are no ICT standards for equipment and virtually no technical expertise to evaluate proposals and perform due diligence on firms' capabilities to deliver. Proposals are awarded more on price than past performance or best value, frequently resulting in failed projects, cut corners, shoddy equipment, etc. Several years ago, the Government set up a state-owned enterprise, The Computer Institute, to handle its computer purchases and ICT functions. Besides competing with the private sector, the Institute reportedly sells computers to the Government that perform poorly.

### **Identified Areas for Further Pursuit**

The above portrays an environment in St. Lucia where many of the basic pieces are in place to support a more focused commitment to the widespread utilization and deployment of ICTs. The following represent a few priority "Public Sector" issues where additional attention is warranted:

- A. Public Sector Engagement.** There is a need to organize the public sector to effectively pursue the development of an ICT industry sector and to advance the deployment and utilization of ICTs in the Government and across the island. Key steps that would advance this process include:

- 1. Prime Minister Support**—Discussions held with public and private sector individuals during the course of the ICT Assessment preliminarily indicate that the Prime Minister (PM) is supportive of pursuing an ICT agenda. While this same tone

may have been captured in various meetings and public statements, it is important that a fresh and forthright statement be put forth by the PM that reflects his vision and strong support for ICTs as a vehicle for economic growth and diversification. This statement should be broadly communicated and should be accompanied by near-term “actionable items” that will advance public and private sector ICT initiatives and will show support for activities now being pursued in this arena.

**2. Establish ICT Public-Private Sector Forum**—At present, there are various ICT-oriented groups already in place addressing aspects of ICT (e.g., private sector growth, education, etc.). It is recommended that the PM establish a public-private sector forum as early as possible to provide a focal point and active forum for addressing ICT-related topics and developing a national ICT plan and strategy. This may be called something on the order of the “Prime Minister’s ICT Council” to communicate its national importance. Leadership for this forum would most logically come out of the Prime Minister’s Office of Private Sector Relations (OPSR). Public sector participation should include (but not be limited to) (a) the NDC, (b) SEDU, (c) the Ministry of Education, (4) the Ministry of Commerce, Tourism, Investment, and Consumer Affairs, (5) the Ministry of Communications and Works, and (6) the Ministry of Planning. Private Sector community engagement should include the Chamber of Commerce and Industry, Albert Daniels, individual local and international firms, and key non-governmental organizations (NGOs).

**3. Participate in Direct Dialog with GOPA**—With GOPA’s engagement over the next three months already underway, there is the need to immediately establish a dialog with the GOPA consultants. A starting point would be to invite them to give a presentation on their efforts at the launch meeting of the Prime Minister’s ICT Council described above. From here, the Council can periodically meet with them and serve as a “sounding board,” not only for their regional efforts, but specifically for St. Lucia. Additional engagement with GOPA could include securing their permission that key individuals from St. Lucia be allowed to attend their meetings around the region, as well as providing comments on draft materials they prepare. St. Lucia, due to its geographical advantage of having GOPA located there, could play a key consultative role in helping guide this regional ICT policy and strategic initiative during April, May, and June of 2002. This active dialog should also be instrumental in shaping potential follow-on pilot initiatives where St. Lucia could possibly participate.

The above should be acted upon quickly, and, if managed properly, should set the stage for pursuing critical follow-on actions, some of which could be initiated concurrently with the above, depending on available resources. A key focus here is the potential outcome to establish a collective regional initiative that would seek to attract FDI into the region for ICT-related projects.

**B. National ICT Strategic and Tactical Plan**—The next logical step is to develop a National ICT Strategic and Tactical Plan. This should be a public-private sector endeavor, led by the Prime Minister’s ICT Council. International consultants could be

brought in to add experience and direction, but it is critical that this planning process be visibly supported by the Prime Minister and driven by local participants.

A key focus here will be growing the private sector, specifically the ICT sector, as a vehicle for economic growth and diversification. This will likely require a “competitiveness study” to help St. Lucia determine the best course of action relative to selecting and growing the ICT sector in the country, and using ICTs in traditional industry sectors to enhance St. Lucia’s competitiveness regionally and internationally. This effort should take into account the most current Medium Term Development Plan and St. Lucia Industrial Policy, plus other relevant documents that would provide guidance to this effort. This should not be a long process, but one that could be completed within several months. There are many examples to draw upon that would make the process shorter and ensure the various topics needing attention are taken into account.

- C. Training mid-upper level Government Managers**—Within the Government, awareness of the use and value of ICTs, especially the potential for leveraging the more advanced capabilities, is clearly lacking. Rather than wait for this to slowly evolve, there is an opportunity to significantly raise the awareness of upper-level management and “fast track” their ICT knowledge base through a series of staged seminars. This would help develop a shared vision and perspective of how ICTs can play a key role in improving Government operations and in growing the economy of St. Lucia.
- D. Strengthen the National Development Corporation**—There is the need to place additional focus on the possible reshaping and strengthening of the NDC as it seeks to attract new businesses and FDI into St. Lucia. This could well build on the dialog with GOPA and directions set for the region, as well as the proposed National ICT Strategic and Tactical Plan. The current audit now underway could well provide the organizational framework for pursuing a track that would strengthen NDC’s knowledge/skill set and capacity in the ICT arena. It would likely need to coordinate closely with other organizations within the Government to ensure a collaborative effort that leverages the “one stop shop” role it is now pursuing.
- E. Government of St. Lucia ICT Plan**—With the National ICT Strategic and Tactical Plan in place, there is the need to further shape and refine public sector use of ICTs. This goes to the networking of Ministries, use of software applications, development of portals, and delivery of services to citizens. The Government is the country’s largest employer and “demander” of ICT in St. Lucia, therefore, its direction will significantly shape the growing local ICT private sector providing the solutions to the Government and will be responsible for training a majority of the island’s workforce. It is also important that valuable Government resources not be wasted on redundant initiatives. This planning effort needs to be in concert with, and supportive of, directions being established in Ministries and other Government planning and budgeting processes. Attention should also be paid to consistency of direction, ICT-related standards, and possibly setting up organizational structures needed to provide support to the growing use of ICTs within the Government.

- F. Supporting Ministry ICT Planning**—Where appropriate, it is anticipated that each Ministry will also develop a stand-alone ICT Plan that will augment their internal plans and be consistent with the broader Government ICT plan. In many cases, it is likely that the Ministry-level ICT Plans would simply be incorporated as subsets to other broader planning efforts. In the case of the Ministry of Education, such a plan has already been developed.
- G. International Donor Coordination/Support**—In many cases, the identified ICT initiatives reflected in these plans may not be funded. However, simply having a plan provides an opportunity to improve the coordination of donor (multilateral and bilateral) organizations and, in some instances, actually gain their support for specific action items within the plans. The plans themselves reflect a country's commitment to pursuing a directed course of action, and this speaks well to the international community—not only the donor community, but the private sector as well. Efforts should be made to ensure that the World Bank, Inter-American Development Bank, Caribbean Development Bank, Canadian International Development Agency, and DFID (UK development fund), etc., are aware of the ICT-related planning efforts as well as the plans themselves.
- H. Continual Tracking**—Having a plan is good, doing the plan is better (Plan the Work; Work the Plan). Each of the above levels of ICT plans will reflect specific initiatives, identify who is responsible, state what preliminary resources are needed to complete the initiatives, and define when they should be completed. These plans need to be tracked on a regular basis, with sufficient attention paid to where needed adjustments/corrections can be made without losing any significant amount of time. Whoever takes the lead in orchestrating the development of the ICT plan within each Ministry should be responsible for tracking and reporting on its implementation. Ideally, there would be recurring meetings (at least quarterly) of these people with the Prime Minister's ICT Council to report progress on each plan and its initiatives.
- I. Annual Refresh of ICT Plans**—For at least the first two or three years, the National ICT Strategic and Tactical Plan, and the Government's ICT Plan should be annually refreshed. This enables adjustments to be made where appropriate and also provides the opportunity to take into account changes that occur on a regular basis in the ICT arena. Here again, the Prime Minister's ICT Council plays a critical role by ensuring a wide-spectrum of input, perspectives, and expertise.
- J. E-Business Legal and Regulatory Reform**—Consistent with other ICT Assessments, one of the key missing ingredients is the need to develop the legal infrastructure to support e-commerce/e-business in St. Lucia. At present, there are no such provisions that adequately address the issues of privacy, encryption, cybercrime, electronic transactions, authentication/certification, rules of evidence pertaining to electronic records, etc. The development of these laws needs to be in harmony with emerging international consensus since they are primarily aimed at facilitating international transactions. Ideally, they should be developed as a collaborative regional initiative in much the same manner as was undertaken for telecommunications via ECTEL and the country NTRCs, where model

laws/provisions are drafted (perhaps at the OECS level) with each country then localizing to the degree needed to meet their country's legal structure.

- K. Targeted ICT Government Initiatives**—There are several areas identified in this ICT Assessment where the specific application of ICTs could have significant and wide-based impact. Also, these are quite consistent with the findings of parallel Assessments, indicating the need is common among the ECTEL countries.

Health care is an area desperately needing ICT support at the administrative and hospital levels, including the delivery of health care to those living in rural areas. Specific areas needing attention include the hospital financial/accounting systems. At present, the hospital lacks the ability to effectively bill and collect on accounts. Such a system would have the immediate impact of generating additional revenue for the Government. Patient record systems are also needed. In St. Lucia, as with the other islands, patient records are not automated; they are held by the patient and frequently lost. Therefore, they are not available from one visit to the next or throughout St. Lucia's health care system. There is a critical need to improve health "surveillance" or disease incident collection/reporting. Whether it is HIV/AIDS, Dengue Fever, or other communicable diseases, there are currently no monitoring systems that can collect and assess the dynamics and help in prevention, targeting, education, or improved treatment.

With the expanding use of the Internet, including planned telecenters in the rural areas, there is an opportunity to move key Government services online. This would reach citizens and businesses alike and improve the effectiveness and efficiency of the Government. First, however, it is necessary to advance the Government's use of technology and to develop a central architecture, including a central "Intranet" for e-mail, document sharing, etc.

- L. Regional Teleconference Centers**—During the course of this ICT Assessment, one of the observed themes has been the focus in each of the countries to work closely with the other OECS/ECTEL countries in advancing ICTs on a regional level and coordinating their efforts. Regional collaboration, however, results in a number of trips by key Government officials to sessions held around the islands on various topics. Naturally, due to costs, the numbers of those attending these sessions is restricted. One potential use of ICTs that would have direct support for improving the regional interaction between the island Governments and their personnel is the establishment of video-based teleconference facilities in each country. This would allow for more frequent exchanges, more participation, and potentially lower costs. Use of this technology would not eliminate conferences, but would allow more to participate—thus improving the dialog. If done properly, the facilities could also be used to support educational initiatives and similar capabilities already available at the World Bank and other support institutions.

One of the underlying components increasingly recognized as critical to the development of any nation is the communications infrastructure. In recent years, this has become even more important as globalization expands and nations increasingly rely upon ICTs to participate in the global marketplace (e.g., e-commerce and e-business).

This section of the ICT Assessment examines the in-country communications environment from several perspectives and levels, including:

- 1) Summary/findings of the communications infrastructure in St. Lucia, and
- 2) Key observations from 1999 data from the International Telecommunications Union (ITU).

### Summary/Findings

#### Current Situation

St. Lucia enjoys a well-developed communications infrastructure, with a considerable amount of fiber optic spread across the island, including fiber and cable access into rural and underserved areas. The largest city, Castries, and secondary cities around the island enjoy good connectivity. There remain, however, some areas without connectivity or access to desired services.

Cable & Wireless Ltd. (C&W) is the only communications provider in St. Lucia. Although C&W has lowered some of its prices, communication costs remain a barrier to doing business. There is some concern regarding reports of C&W solicitations of business and residential customers asking them to sign contracts for service (2-3 years) at a significantly lower cost, compared to today's prices. As yet, however, the market has not been liberalized, therefore, it is difficult to determine if the price offered by C&W would be higher or lower than competitive market pricing by new entrants. There are also reportedly long waits for telephony installation, with suspicions that this is designed to force people into C&W's wireless market.

There are five Internet cafes around Castries, but few or none in rural areas. C&W 56 kbps dial-up Internet access is EC\$129 per month for unlimited service plus EC\$0.75 charge per each access. There are approximately 4,500 Internet connections. A 64 kbps leased line is EC\$2,400 per month and a T-1 is EC\$18,000. The average wage in St. Lucia is EC\$2,500-3,000 per month.<sup>24</sup>

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<sup>24</sup> *Rainbow Report* at Annex 1.

C&W is offering Internet access to the schools at a reduced price and there are ongoing discussions between C&W and the Ministry of Education regarding improving access in the schools and possibly opening up the school labs and libraries in the evenings as community telecenters.

### ITU Telecommunications Information - 1999 Statistics

Each year the International Telecommunications Union (ITU) publishes a *World Telecommunications Development Report (Development Indicators Report)*<sup>25</sup> that provides statistical data for all countries. Its most recent comprehensive report, issued in March 2001, included an expanded set of data that, for the first time, included data on mobile cellular. In addition to this worldwide report, the ITU periodically publishes regional-specific reports with more detailed discussions on a given geographical region. In April 2000, an *Americas Telecommunications Indicators 2000* report was published that provided useful data for this Assessment.<sup>26</sup>

The ITU-compiled data serves as a rich resource that is helpful in understanding the dynamics taking place in telecommunications. While there are several acknowledged weaknesses in the reports (such as timing, accuracy, and incompleteness), they still remain the best set of normalized data from which trends can be identified and macro-level regional/country comparisons can be made. For purposes of this ICT Assessment, selective 1999 data (the most recent available from the ITU) has been extracted from the 2000-2001 *Development Indicators Report* for the ECTEL countries, plus a few other Caribbean Islands (Barbados, Jamaica, and Trinidad/Tobago). Combined, this provides a basis for grasping the current telecommunications situation in the ECTEL countries, including St. Lucia.

The following key observations were derived from reviewing and analyzing these sets of data. The actual data from which these were prepared are contained in Appendix B of this report.

#### Basic Indicators

- The populations of the ECTEL islands are small (typically less than 100,000), but relatively concentrated (with between 100 to nearly 300 people per square kilometer), due to the small size of the islands.
- The economies of the ECTEL islands are relatively small (between US\$300-600 million annual GDP), but on a per capita basis, they are relatively high (between US\$2,400-6,000 per capita GDP), placing most ECTEL countries in what is considered the Upper-Middle income band. St. Lucia's GDP is US\$600 million and US\$3,815 GDP per capita.
- Relative to the world average for Upper-Middle income countries, the ECTEL countries have a higher than average teledensity (ranging from 28-52 whereas the

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<sup>25</sup> *World Telecommunications Development Report 2000-2001-- World Telecommunications Indicators*, ITU, Geneva, March 2001.

<sup>26</sup> *Americas Telecommunications Indicators 2000*, ITU, Geneva, April 2000.

average is 20); St. Lucia's teledensity is 28.93. St. Vincent/Grenadines is a Lower-Middle income country, but here too, it is above the average of similar countries (teledensity of 21 versus an average of 12).

### Main Telephone Lines

- With the exception of St. Kitts/Nevis and St. Lucia, growth in main lines and teledensity between 1995 and 1999 is less than the world averages for similar income level countries. St. Lucia's teledensity of 28.93 is close to that of Dominica (27.88), but substantially less than St. Kitts/Nevis's teledensity of 51.76. The world average is 15.16. St. Lucia's growth in main lines during 1995-1999, however, was the highest of the ECTEL countries with a 9.8% growth rate.

### Local Telephone Network

- Used switching capacity across all the ECTEL countries is 61-83 percent (Grenada is 83 percent). The world average is 81.4 percent and the average for Upper-Middle income countries is 84.4 percent. Dominica and St. Vincent/Grenadines fall significantly below this rate, with only about 61 percent of switching capacity used. Figures are not available for St. Lucia.
- All the switching capacity for the main telephone lines is 100 percent automatic and digital.
- The percentage of main telephone lines that are residential is higher than countries with comparable income levels (76-85 percent versus an average of 75 percent for Upper-Middle income countries). Seventy-six percent of St. Lucia's lines are residential.
- While the data is not available for all ECTEL countries, the faults per 100 main lines appears significantly less than other Lower-Middle and Upper-Middle income countries (no doubt due in part to digital switching and a more concentrated user base). Grenada has only 1.1 faults per 100 main lines per year and St. Vincent has 9.4, compared to an average of 19.8 for Upper-Middle income countries. Data was not available for St. Lucia.

### Teleaccessibility

- The percentage of households with phones throughout the ECTEL countries is considerably higher than the world averages for the Lower-Middle and Upper-Middle income countries (70->100 percent compared to 38-58 percent; St. Lucia has 69.7 percent residential main lines per 100 households).
- The ECTEL countries' number of public telephones per 1000 inhabitants is quite close to the world average for their respective income level, however, as a percentage of main telephone lines, they are somewhat lower than the world average (likely due to the high level of phone lines that exist in households). St. Lucia has 2.88 public telephones per 1000 inhabitants compared to an Upper-Middle income average of 4.22.

### Largest City Main Lines

- With the exception of Dominica and St. Vincent/Grenadines, the percentage of the population of the ECTEL countries living in the largest city is considerably higher than comparable income level countries, but likely consistent with small island nations. St. Lucia has 35.2% of its population living in its largest city.
- Teledensity of the largest ECTEL cities appears to be quite high (53-82 compared to 28 for Upper-Middle income countries) but, again, this is likely due to the nature of island nations. However, some data is missing for several of the islands, including St. Lucia. Grenada's largest city teledensity is 53.3 compared to an average of 27.87 for Upper-Middle income countries.
- There is a significant disparity between the teledensity of the largest city and the rest of the country (e.g., for Dominica, the largest city which contains only 13.5 percent of country's population has a teledensity of 82.22, whereas the rest of the country has a teledensity of 17.37). This is an extreme situation, but reflects the disparity, even though in most cases this is not as exaggerated. Grenada's teledensity for its largest city is 53.3 compared to an overall country teledensity of 31.51. Figures were not available for St. Lucia.

### Telephone Tariffs

- Connection rates for linking up telephone service are typically less in ECTEL countries than in countries with similar income levels (for both residential and businesses). For Grenada, the costs are close to the world average for Upper-Middle income countries (US\$85 for both residential and business compared to average of US\$82 and US\$129). Figures were not available for St. Lucia.
- Monthly subscription costs for Grenada are considerably higher than the average for Upper-Middle income countries (for residential, US\$14.10 compared to US\$8.10; and for business, US\$40.70 compared to US\$15.60). It should be noted that this is 1999 data, and rates have since been reduced. Again, data was not available for St. Lucia.
- Grenada's Telephone Tariffs as a percentage of GDP are very high compared to other Upper-Middle income countries (4.6 percent compared to an average of 1.8 percent). Figures were not available for St. Lucia.

### Cellular Subscribers

- Cellular/Mobile data for ECTEL countries is sketchy and, therefore, its use is limited for drawing conclusions.
- It is clear that the entry of Cellular/Mobil has been late in coming to the ECTEL countries, and that, across the board, the growth rate between 1995 and 1999 has been considerably less than the growth in countries of similar income levels (24-60 percent on a very small base, whereas the average growth rate for the Upper-Middle income level is nearly 85 percent for this same period). St. Lucia's compound annual growth rate for 1995-1999 was 23.9 percent, whereas Grenada's was 49.8 percent.

- Teledensity of Cellular/Mobile as of 1999 is considerably less than countries with comparable income levels (teledensity of Cellular/Mobile of ECTEL being between 1 and 2 whereas the average for Lower-Middle is over 2, and for Upper-Middle income countries it is over 13). St. Lucia's teledensity of Cellular/Mobile subscribers is 1.25.
- Cellular/Mobile as a percentage of the total teledensity is considerably less than averages for comparable countries (3-6.5 percent compared to 16-40 percent). This is due to a late start, but also likely influenced to some degree by the relatively high main line telephone teledensity. The total teledensity for Cellular/ Mobile subscribers in St. Lucia is 4.5 percent, which is much lower than the 35.2 percent world average.

#### International Telephone Traffic

- The outgoing international traffic from the ECTEL islands on a per inhabitant basis is completely "off the charts" relative to comparable income level countries (88-333 minutes per inhabitant for ECTEL countries compared to an average for Upper-Middle income countries of 16). St. Lucia had the lowest number of international minutes per inhabitant, 88.3.
- On a per subscriber basis, this comparison is equally significant (333-652 minutes compared to 79 minutes for Upper-Middle income countries). St. Lucia has 332.5 outgoing international minutes per subscriber.
- These disparities are most likely due to the nature of a tourist-based economy, but are also likely to be partially due to island Diaspora and family members living in the U.S., U.K., and Canada.
- The extremely high outgoing international traffic is a real "cash cow" for the incumbent telecommunications provider and will require serious attention during market liberalization.

#### Telecommunications Staff

- Across the ECTEL countries, it is quite clear that between 1995 to 1999, the current telecommunications provider (C&W) has been undergoing cost-reduction efforts, including dropping staff (0.3 – 7.2 reduction in staffing for this period). St. Lucia's telecom staff dropped 0.9%.
- The number of main lines per telecommunications employee has naturally grown over this same period, but for the Upper-Middle income countries, ECTEL countries are still considerably below the world averages (107-130 lines per employee compared to an average of 179 for Upper-Middle income countries and a world average of 154). For St. Vincent/Grenadines, the comparison is favorable (142 compared to an average for Lower-Middle income countries of 92). St. Lucia has 107 main lines per employee.

#### Telecommunications Revenue

- While information is sketchy for the ECTEL countries, on a per inhabitant basis, telecommunications revenue is considerably higher than the average for similar

income countries (US\$219 compared to US\$31 for Lower-Middle income and US\$175-713 compared to US\$146 for Upper-Middle income countries).

- There is also considerably higher revenue for the ECTEL countries on a per line basis as well as a per employee basis (US\$628-1,512 compared to US\$733 for Upper-Middle income countries and US\$256 for Lower-Middle income countries).
- Telecommunications revenue as a percentage of GDP is also very high for the ECTEL countries (5.1-10.4 percent compared to an average of 2.1 percent for Lower-Middle and 2.9 percent for Upper-Middle income countries).

#### Telecommunications Investment

- The ITU report does not provide sufficient information on the ECTEL countries to detect much in the way of telecommunications investments other than to say it appears to be within the averages relative to population, but lower than average relative to telecommunications revenue.

#### Information Technology

- Overall, the number of Internet hosts in the ECTEL countries is considerably below the averages for similar income countries. Dominica, while still under the average, is at least close (excluding Dominica, the range is .3-2 hosts per 10,000 population whereas the average for Upper-Middle income countries is 37; St. Lucia has .85 hosts per 10,000 inhabitants).
- The number of Internet users in 1999 is very low, with 2,000-3,000 per country. The number of Internet users per 10,000 population ranges between 195-516 in ECTEL countries compared to the average for Upper-Middle income countries of 461; St. Lucia has 195 users per 10,000 population.
- There is a high percentage of PCs per 100 population compared to other countries of similar income levels (6.5-15.5 per 100 population compared to 2.6 for Lower-Middle and 5.8 for Upper-Middle income countries). St. Lucia has 13.66 PCs per 100 population.
- The relatively high availability of PCs and the comparatively low use of the Internet is likely a direct result of limited access and costs (but mostly costs, since there are a high number of mainlines per household across the ECTEL countries).

#### Network Growth

- Growth in the number of main lines taking place between 1998-1999 in the ECTEL countries is close to the averages for similar income countries, with Dominica and Grenada being slightly less (Dominica's compound annual growth rate (CAGR) is 6.3, and Grenada's is 7.1); the average for Upper-Middle income countries is 9.4. St. Lucia's CAGR was 10.1%.
- With the exception of St. Vincent/Grenadines, the growth in Cellular/Mobile for ECTEL countries is well below the growth rates for countries with comparable income levels (43-60 percent compared to 85 percent for Upper-Middle income

countries; St. Vincent/Grenadines had an 89 percent growth in 1999 and Grenada's growth rate was 42.7 percent). Figures were not available for St. Lucia.

- Growth in Internet hosts throughout the ECTEL countries is also well below comparable averages, but data is insufficient to make any additional observations.

## Identified Areas for Further Pursuit

### Areas to Pursue

The foregoing paints a picture of “Pipes” that is on the verge of significant dynamics due to near-term telecommunications market liberalization, which will have a profound impact over the next few months and extending for several years. The following, however, are a few isolated “Pipes” issues where additional attention is warranted now:

**A. Rural Access**—As St. Lucia pursues a liberalized telecommunications market, it is important to address the “digital divide” issue within the country. Simply put, in remote, low-density, and low income areas of the island, even a liberalized market may not be adequate. Ultimately, universal service provisions will establish a form of cross-subsidy for providing access to those living in these areas. However, regardless of the funding source, there is the need for initiatives that get underway early to ensure that as the market matures in the richer areas, there are not those in less attractive areas of the island left behind.

Cyber cafés are just now appearing in St. Lucia in an effort to meet a market demand for Internet access for those who do not have PCs or cannot afford ISP dialup fees. With support, the PC labs within schools could be used as community access points for a wide variety of purposes (e.g., health, enterprise development, adult education, etc.). There are also opportunities to train the youth of St. Lucia to provide ICT support.

**B. Shared Distance Education Facility**—St. Lucia, like many of the Eastern Caribbean islands, has a non-campus University of West Indies (UWI) distance education program. This is currently limited to two-way voice due, in large part, to costs. Two areas of expansion appear needed: (a) expand the courses to include ICT-specific courses and programs (e.g., computer science degree), and (b) expand the delivery to include video (now possible via a more liberalized market and lowering costs). If done well, this expanded access could also enable the country to tap into a broad-array of North American and European university distance education courses. This would have the distinct advantage of allowing students to remain in the Caribbean, lower their costs of education, and obtain scholarships, all without having to go to out of the country (with the high probability they will not return and contribute to the local economy). This video capability could, in part, be shared a shared video conferencing capability (pursuant to the Public Sector recommendation above).

**B. Strengthening NTRC**—The NTRC, like those of other ECTEL countries is new and needs to rapidly address a number of complex telecommunications-related issues. The current Carana contract is aimed at providing support to ECTEL and the NTRCs, and it is apparent that strengthening measures are critical and should receive greater focus as the NTRC’s work proceeds.

# St. Lucia: ICT Assessment

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## III. Private Sector

Ultimately, it is the private sector that must generate the business activity that establishes and maintains economic growth and improves the living standards of the citizens. This third area of the ICT Assessment focuses on two key areas relative to leveraging ICTs in St. Lucia:

- 1) Determining the strength and potential of the ICT-related sector in domestic and international markets, and
- 2) The utilization of ICTs by the local business community in an effort to improve the effectiveness and efficiencies of their operations and where appropriate, to potentially become more competitive in the global marketplace.

### Summary/Analysis

#### National Economy & Private Sector Industries

Overall, the economy in St. Lucia is in a downturn due to drops in tourism and dwindling banana subsidies. There seems to be broad acceptance that the country has to revamp its investment program, attract new foreign direct investment (FDI), and refine and develop existing industry sectors. The new National Development Corporation (NDC) is working hard at restructuring the organization, selling off some assets in its portfolio that are beyond its mission (e.g., residential housing), and defining a new investment plan.

As in other islands, there is lack of clarity regarding what shape a new economy will take. Certainly, tourism will remain a primary industry sector. St. Lucia has several inclusive resorts, a couple of them on the high end, that maintain high occupancy rates. But there is little definition beyond that. Organic agriculture and the fishing industry are two potential candidates. The Japanese have already made investments in the St. Lucian fishing industry, and the highly desired tuna, dolphin, and king fish caught in the Caribbean are desired by North American, European and Japanese markets. *It will be necessary, however, to construct a legal framework to control fishing the waters in the region lest they be over fished and depleted, leaving the islands with another defunct industry to deal with.* Both the public and private sectors recognize they need expert technical assistance to sort through these issues, identify industry sector potential, develop competitive strategies, and target foreign direct investment (FDI). They also need assistance in complying with U.S. agricultural requirements for imports of fruits and other agricultural products.

Although the Government would like to attract more offshore industries and have established a legal framework that is OECD and FATF compliant, these industries do not contribute that much to the local economy. They do not service the community or have large staffs. Therefore, while these industries will contribute something to Government revenues, they cannot be counted on to significantly prop up the country's economy.

Although the legal framework is generally favorable, businesses have an uphill climb in other areas. Communication costs remain the single largest barrier to widespread business use of technology for competitive and efficient business operations. Shipping costs are another common complaint, as most small and medium-sized enterprises do not have large container-size shipments.

Another common complaint throughout the private sector concerns the lack of available financing, especially for SMEs or young companies. Banks are reluctant to open business accounts<sup>27</sup> or merchant accounts for credit card transactions out of fear of "charge-backs."<sup>28</sup> Seven local banks joined together and created a small venture capital fund of EC\$1.5-2 million, but it became dormant after only a few small investments. The Bank of St. Lucia chairs the fund and has expressed interest in obtaining donor assistance in managing the fund. The chair of the fund was going to conduct a poll of the other fund members regarding this.

The overall conservative attitude of the banking sector is out-of-step with modern lending institutions and could benefit from an initiative that brought the private sector and banking industry together to discuss mutual concerns. Part of the problem lies in the legal framework, as there are no laws to support electronic transactions and signatures.

Business development services are very limited. Small businesses have some support from public and private institutions, but it is minimal, and there is very little training or information available to SMEs on the use of ICTs in business operations. The Office of Small Enterprise Development Unit (SEDU) (which operates under the Ministry of Trade as a joint project between the Government of St. Lucia, UNDP, the International Labor Organization) and the OECS plan to lend support to an economic diversification effort, the Small Enterprise Development Project (SEDP), which is to be funded by the EU via the STABEX Funds (95% for EC\$4.838 million) and the Government of St. Lucia (5%). The project is based on studies on SMEs done from 1995-1997 that found the following constraints contributed to the lack of SME growth:

- Inaccessibility to credit
- Underdeveloped market skills
- Inadequate entrepreneurial skills
- Inadequate institutional support
- Limited institutional capacity
- Poor understanding of market issues leading to mismatch between needs of the market and products and services offered for sale
- Dysfunctional management practices as evidenced by the regularity of cash flow problems and the absence of record keeping and financial planning
- Absence of a legal framework to govern the activities of the sector

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<sup>27</sup> Henderson B. Holmes, *Situational Analysis on the Information Technology Sub-Sector and Matters Related Thereto in the Commonwealth of Dominica*, National Development Corporation, Aug. 2000 at 37.

<sup>28</sup> *Rainbow Report* at 34.

- Insufficient information on the sector with particular reference to how many people are doing what, where, for how long and at what level of investment.

The Assessment Team's findings were the same, now five years later. SEDP was designed to stimulate and facilitate SME creation and development and has the following components:

- Small and micro business loans
- Employable skills training
- Entrepreneur and business development training
- Market and product information
- Establishment of an Accounting Center for small and micro businesses
- Institutional strengthening
- Publicity and promotion
- Project management.

St. Lucia is fortunate to have a strong, dynamic Chamber of Commerce Industry and Agriculture. The Chamber has developed an excellent strategic plan for 2001-2003 that will be finalized in September 2002. The Chamber is forming Action Committees to implement the plan.<sup>29</sup> High on its list is strengthening the economy and developing an ICT industry sector. It has even developed a separate document defining a Technology Sector and describing its needs. The Chamber is committed to working with the public sector and is ideally situated to team up with the Prime Minister's Office of Private Sector Relations to effect change. It is planning an Innovation project linked with the Canada's Innovation Center, and the Chamber's Executive Director is interested in coupling this with a competitiveness initiative but needs donor support to do so. It cites international competitiveness and productivity as the country's two biggest issues. The Chamber has made early approaches to USAID seeking funding for competitiveness support.

### ICTs and the Private Sector

Overall, businesses in St. Lucia primarily use ICTs for word processing, accounting functions, and routine administrative business processes. There is little use of ICTs for core business activities. Business use of technology is hampered by the shortage of expertise in hardware and system support and a lack of understanding about how ICTs can be utilized to increase competitiveness. Poor electrical service is also a problem. Continual power interruptions and voltage fluctuations pose grave risks to IT systems that are not supported by adequate Uninterruptible Power Supply (UPS) systems. These power issues must be addressed if St. Lucia can reasonably hope to build ICT capabilities and further the deployment of technology in businesses.

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<sup>29</sup> *Strategic Plan 2001-2003*, St. Lucia Chamber of Commerce, Industry and Agriculture.

Although there is no established ICT industry sector per se in St. Lucia, there is an active private sector in ICT training, advanced ICT consulting (including network engineering) and hardware/software sales and services. There are also two call centers successfully operating in St. Lucia. One is housed in an NDC industrial park facility and has 300 employees. It had such a difficult time getting connected to C&W's infrastructure that it finally got its own license for VSAT communications. The other call center is located in private real estate and has 45 seats servicing U.S. clients. Both have had a difficult time in finding employees with the requisite skills for call center operations and have had to resort to performing their own recruiting, screening and training.

Just what an ICT industry sector might look like in St. Lucia needs refinement. The St. Lucia Chamber identified "real enterprise opportunities" for ICT as hotel guest business centers and Internet cafes, ICT training and education, Internet telephone, online auctions, and servicing outsourced banking and publishing operations. Most of these are soft options. The general tendency is to believe that another Bangalore can be developed by providing software training and grabbing some offshore accounts. Although St. Lucia enjoys good intellectual capital, it lacks the strong engineering educational capabilities that are at the root of Bangalore, and its operating costs are considerably higher than those in India.

There are viable ICT opportunities, however, in call centers, "back room" data processing, data bank development, data storage operations, systems administration services, and software programming -- *provided there is an adequate legal framework to support these operations and protect their data*. St. Lucia has talent for these industries and offers geographical, language, and time zone advantages. Expert assistance could help target potential investors and market St. Lucia as a viable option for these operations. Such an undertaking would require the cooperation of the Government to create suitable workspaces, streamlined procedures, and incentive packages for domestic and foreign investors.

The lack of adequate office space for these companies is a critical issue. The existing industrial parks are inadequate. Any space that would be occupied for ICT purposes in these parks would require considerable upgrading. The NDC's plans for an IT park are under assessment. The planned park would be a joint venture between the Government of St. Lucia, local private sector entities and international investors. If built, the NDC understands that the space must be outfitted properly if it is to be attractive to local and foreign investors. The proposed park, termed the Hewanorra I.T. Park Concept, calls for office centers, a specialized international network, high bandwidth capabilities, video conferencing facilities, a conference center, and production and research facilities for high-tech manufacturing. The plans also call for an I.T. Business Incubator, sports facility, and day care center.<sup>30</sup> Funding, of course, is the biggest problem. The Government should also consider location. It is important that these facilities be located where the workers are, lest the ICT companies continue to face hurdles in attracting qualified employees.

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<sup>30</sup> *Prospects*, The Official Newsletter of the St. Lucia Development Corporation, Jan/Feb. 2002.

## Moving Forward

There is strong support among St. Lucia's private sector for developing a national ICT plan and strategy, and the Prime Minister's Office of Private Sector Relations and the Chamber of Commerce have stepped up to the plate and offered to co-chair such an undertaking. The private sector realizes however that the OPSR cannot fill the lack of a central driving force for ICTs within the Government. This will require a clear statement of support from the Prime Minister and active participation by selected Ministries. Jamaica, for example, has three Ministries all aggressively promoting ICTs. The NDC is also positioned to participate in developing a national ICT plan and strategy. It has developed a brochure, "Expand Your Business Horizons in St. Lucia's I.T. Industry" that is up-to-date and realistic on the types of investment St. Lucia can attract.

Both the public and private sectors have expressed strong support for the regional "branding" of ICT services. Therefore, the development of a national ICT plan could be within the context of a regional perspective, enhancing its chances of success upon implementation. Local businesses expressed dismay that the Eastern Caribbean Investment Promotion Center was closed and stated that it was very helpful in securing business opportunities for them. It is unlikely that a vibrant ICT sector would develop in St. Lucia, or the region, without this kind of support in the targeted markets. Diaspora could be better leveraged in this regard to help promote ICT sector growth. The OECS is reportedly launching an export-oriented development unit chaired by Colin Bully with USAID funding, although the exact support for this project is unclear.

### **Identified Areas for Further Pursuit**

The foregoing paints a very brief picture of the "Private Sector" in St. Lucia, with a focus on leveraging ICTs and identifying possible opportunities for using ICTs for economic development. St. Lucia's ICT opportunities will be boosted by the market liberalization of telecommunications that is currently underway. Lowered communication costs – especially international costs – will be a critical factor. Nevertheless, there are several areas where donor attention to "Private Sector" issues is warranted:

- A. Explore Potential for Pursuing New ICT Enabled Industries**—The Eastern Caribbean countries individually and collectively have the potential for providing a series of off-shore ICT services to the U.S., Canada, and Britain. However, if pursued individually, the costs compared to potential gain may be disproportionate. On the other hand, if pursued collectively, there is the possibility of "branding" the Eastern Caribbean countries in such a way that they could provide a range of value-added ICT-related services, most likely back-office services. There is already a limited number of call centers in St. Lucia that reflect the potential for these types of services, and with the telecommunications market liberalization now underway, providing lower cost options open up this potential even more. In addition to this being pursued collectively, there is the specific need for St. Lucia to also develop improved facilities to entice prospective investors. Currently, there is a shortage of acceptable high-tech

facilities and the Hewanorra I.T. Park, or similar such undertakings, would be a much needed attraction for investors.

- B. Private Sector Participation in Developing National ICT Strategy, including the Diaspora**—St. Lucia has a strong and vibrant public-private interaction, which, to a degree, focuses on ICTs. While the recommendation for developing a national ICT plan and strategy is reflected earlier under “Public Sector,” there is the need to ensure a broad spectrum of private sector participation in order to make it responsive to issues of importance to growing local ICT firms. The Prime Minister’s OPSR and the Chamber of Commerce Industry and Agriculture are core entities that could be pivotal in bringing together the needed resources and energy. In addition, there are indications that there are valuable Diaspora resources that could be brought into the mix in to provide advice and counsel.
- C. ICT Awareness Training for Local Firms**—While there is an increasing use of ICTs in local businesses, for the most part this use is limited to back-office processes such as word processing, accounting, etc. It is not readily apparent that ICTs are being utilized to improve core business processes. Training to help businesses better understand how to leverage ICTs could be carried out through the Chamber of Commerce Industry and Agriculture, with a series of presentations shaped for the various sectors and sub sectors. The key focus would be on making firms aware of how ICTs can be used in their businesses to gain competitive advantages by lower costs, streamlining processes, etc.
- D. ICT-related Training and Technical Assistance for the Banking/Investment Sector**—In an effort to at least partially resolve the issue of lack of capital for ICT-related firms, there is the need to provide awareness training and TA to the local banking sector. The banks currently have no "comfort factor" in dealing with ICT companies, and this needs to be corrected. While ultimately, FDI will be needed for larger projects, there is some modest level of domestic direct investment available. However, the ICT-related firms are frequently service oriented and do not have a lot of capital, thus they are unable to “secure” loans in the traditional manner. Even the venture capital fund supported by seven local banks and managed by the Bank of St. Lucia, has not had the anticipated success once envisioned. This fund is the most logical place to start with such a training program, and perhaps even some ongoing level of technical assistance. The fund chair has indicated they would welcome donor expertise in this area.
- E. Public-Private Dialogue on ICT-related Training and Workforce Development**—There is also the fundamental need for a highly-skilled workforce. It is critical that the development of an ICT-related curriculum in secondary and tertiary schools be shaped by the demands of the private and public sector. It is not uncommon in developing and transitioning economies to find situations where local schools, and even universities, are graduating students who are not qualified to fill local jobs. This is frequently found in the ICT arena because education systems are often slow to retool their curricula with modern techniques and hardware/software. This is partly due to costs, but also partially caused by a lack of communication between the private sector employers and the education system. An effort should be made to ensure a

continuing dialog between the education systems (public and private) and the private sector firms (both small and large, domestic, and international).

**NOTE:** the following are the same as originally developed as part of the ICT Assessment for Grenada and Dominica. These are repeated here in the context of St. Lucia, as the need is the same and the initiatives are best addressed regionally.

**F. Business Development Services**— There is a need in St. Lucia for an effective array of new or upgraded business development services to assist local firms expand their markets and grow. For the most part, this will mean helping businesses gain access to larger offshore markets for their products in the Caribbean region and in countries such as the U.S., U.K, Canada, and the EU countries. In order to be successful in these markets, local companies must (a) improve the quality and consistency of products, packaging, labels, etc., (b) enhance business management and marketing knowledge/skills, (c) gain access to venture capital, and (d) develop a sound business expansion plan for entering new markets, including all the details for marketing, advertising, distribution, payments, etc. For SMEs, this is a formidable task and will require some collective expert assistance.

With respect specifically to ICTs, there is the need for expanding the current training and hardware/software sales and support to higher-value consulting services. At present, the businesses are relying on ICTs for back office support of payroll, personnel, accounting, and general office automation. Few are utilizing ICTs in their core business functions, nor is there adequate local ICT technical support to do so. With assistance, St. Lucia could build capacity in local businesses, including the development of consulting capacity that readily translates into commercial services/sustainability.

**G. International Internet Portal**—A few companies in St. Lucia have developed Internet Web sites for their products and services. As a rule, these are in the tourism sector, but some of the larger local businesses are also advertising their products on the Internet. However, businesses are both hesitant and unable to take orders and credit card payments over the Internet due to inadequacies in the legal framework and conservatism on the part of the banks, thereby limiting their ability to turn their Internet investment into revenue and expanded market share. In addition, as a general rule, small businesses with individual Web sites rarely attract sufficient Web traffic to their sites to be successful in the e-commerce arena. The whole issue of “branding” in this virtual Internet space is problematic even for the largest U.S.-based firms, and is behind the failure of many of the smaller “dot-com” companies.

However, it does appear there is the opportunity to undertake an initiative that would create a country – and preferably a regional – portal or marketplace on the Internet whereby costs could be shared, and a “branding” of Caribbean products could be achieved. Shared services such as credit-card validation/banking could be put into place so enable purchasers to make payments to a trusted entity. This would create something akin to a virtual “Shop Carib” or “Caribbean Mall” that would enable the small and medium-sized companies in the Caribbean to collectively market their products/services on the Internet (much like a local Saturday market). Collective

advertising, hosting, development, shopping carts, banking services, etc., would keep costs to the individual company low, while increasing the potential for generating traffic to the Web site – and the region.

**H. Shared Upstream Services**—Collective support capabilities are also needed to help businesses get their products and services into targeted markets. When individuals buy over the Internet, they also want quick delivery—it is simply part of the customer expectation and the value-added of the Internet. Unless a company has warehousing facilities in the target market, it is difficult to satisfy this need for quick turnaround. It is also very expensive to ship small shipments from St. Lucia to the U.S. or Canada, or the EU. Here again, in manner similar to the above International Internet Portal, there is the need to establish, on a collective basis, a warehousing facility in each market country. This could be limited to a simple warehousing operation, but, ideally, would include the actual marketing of Caribbean products to a network of outlets in the target markets. This could be a value-added complementary set of services to the in-country business development services discussed above.

The widespread deployment and utilization of ICTs is directly dependent upon the ability of a population to become ICT proficient. Whereas the public sector can set ICT strategy and policy, and the private sector can bring together opportunities and needed financial resources, both are dependent upon the intellectual capital of a nation and the ability of its people to provide the requisite skills and human capabilities. In the end, the ultimate change agent is in the hands of a nation's citizens.

This section explores the intellectual resources of the people of St. Lucia, their educational background, their capabilities and potential from an ICT-related perspective, and their desire and willingness to develop an ICT industry sector and use ICTs. There are a few countries that serve as development models of success and useful case studies for countries to emulate. Ireland and India are two of the more prominent. Ireland used about a third of EU infusion money to develop education and human resources that in turn developed knowledge industries like IT.<sup>31</sup> In this section, we examine St. Lucia's school systems, private training institutions, and employer training initiatives that are each in their own way critical to supporting the country's potential for increased utilization of ICTs.

### Summary/Analysis

#### Education System

The bedrock of any nation's intellectual capital is its education system. St. Lucia provides formal education through grade 7 (age 12). Students then take a Common Entrance Examination to gain entrance to secondary school. The number of positions is limited, and students who do not pass the examination can remain in primary school or drop out. Seventy-six percent of primary students go on to secondary school. The country has a goal for all students to be admitted to secondary school by 2005. Secondary schools have vocational/technical and academic departments. Students must pass the Caribbean Examination Council (CXC) examination to graduate from secondary school and be admitted to tertiary level schools.

Overall, St. Lucia is a nation with very good intellectual capital and a solid foundation for growth of an ICT industry sector. All the islands, however, would be wise to change the long-held dividing line between primary and secondary schools. In an information technology driven world, it no longer makes sense to turn 12 year-olds out of school. There is a common complaint throughout the islands -- and St. Lucia is no exception -- that the CXC examination is out-of-date and students who pass the exam are not prepared for the workplace and have low or no ICT skills. There is a strong working relationship between the Ministry of Education and OECS and

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<sup>31</sup> *Business Central Europe*, September 2000, p. 19.

professionals regionally are working on both of these issues. But educators can not solve all the problems. There is a clear lack of communication between the business community and educational leaders. A dialogue between the two would help educators better understand the needs of business and the skills they require.

### State of Technology and Training in Ministry and Schools

St. Lucia has a strong Ministry of Education and is blessed with some talented, energetic people who are aggressively working on integrating ICTs into the schools, the administrative functions, and the curricula. Within the Ministry of Education, there are 19 secondary schools and 80 primary schools. At present, there are 466 PCs in the school system of which 93 have Internet access. There are 23 computer labs. The Education Department's IT unit is working on a plan to wire the schools, but the cost of communications and the lack of funding are high barriers to implementation. Tertiary schools are not under the Department of Education.

As everywhere in the islands, maintenance of the hardware and software is a continuing problem. There is only one qualified person to perform these functions within the entire Department. Some teachers have been trained in computer servicing, but this "solution" commonly results in overburdened faculty and equipment that eventually needs professional attention. The Department's desire to turn the school computer centers into community telecenters is a distant dream without donor support. Unlike Dominica, St. Lucia does not have an active youth division or telecenters for ICT to rural youth, making the telecenter project all the more important.

The Department is seriously looking at curriculum changes to enhance ICT training, especially in the secondary schools. Support is needed to develop, refine, and implement the proposed changes. There are local training institutions that provide ICT training on an array of subjects ranging from introductory web site technology and programming courses to classes on Microsoft Certified Systems Engineer and Microsoft Certified Systems Administrator. Sir Arthur Community College has 2-3 computer labs and is working with Albert Daniels of the Institute of Self-Improvement Systems (ISIS) on computer training and certification testing. There is also a Government-supported National Skills Development Center that provides some ICT training. Distance learning is available through UWI, and OECS is looking at ways to utilize distance learning in the public school system. The Sir Arthur Community College's ICT program links with UWI's four-year degree program in computer science. Regardless of what ICT training is currently offered by any of the educational institutions in St. Lucia, there is clearly a lack of adequate programs in hardware and system support and advanced programming and systems engineering.

Brain drain is a worry to businesses and educators alike. All too often students go to North American colleges and universities and do not return home to contribute to the local economy. Educational opportunities in high-tech fields that can be achieved at home are highly desired. Businessmen are quick to point out, however, that they believe it is important for students to have a brief (3-6 months) stint in North America or Europe to gain exposure to their business practices.

## Readiness of Workforce

For the most part, what computers are in the public and private sector workplaces are used for word processing or basic spreadsheet applications. Few computers are networked and there is very little use of ICTs for core business functions. Therefore, most of the workforce today is not computer literate. Some employers provide some basic training on the job or pay for short courses. There are hardly any telecenters for adult access to computers. Some community centers could perhaps house a telecenter for Internet access, basic training, and SME computer support services. These could be especially valuable in rural areas and would enable citizens better access to Government data or forms that could be put online. Of course, opening up the school labs for this purpose is another option.

St. Lucia's workforce positions it well for targeted ICT industry development, such as call centers, "back room" functions, data entry and data bank development. More advanced functions, such as data storage operations and systems administration services are also good candidates. It remains to be proven, however, that St. Lucians possess the skills to move into these positions. Technical assistance to match skills with ICT opportunities will help put some definition on development of the ICT sector and will help determine where adjustments need to be made within the education system to meet specific ICT job requirements.

### **Identified Areas for Further Pursuit**

The above paints a very brief picture of the environment in St. Lucia relative to education and to a degree, the culture. The following however are a few "People" issues where additional attention is warranted:

- A. Improve PCs and IT support to Secondary Schools**—At present, not all of the secondary schools have PCs, with only five of 23 having complete computer labs. An estimated 93 schools have Internet access. Secondary schools need state-of-the-art PCs, expanded Internet access, an improved curriculum, improved support for the maintenance and operations of the computer labs, etc. It would be worth exploring possible support from the U.S. via its Peace Corps and also from Canada's Global Net Corps (now available through the Digital Opportunity Trust). Under this innovative program, local youth are trained to provide ICT-related support in-country and commit to providing support in the form of community service for 6-9 months. Similar to the U.S. Peace Corps, a small stipend is provided while they are in the program. There may be a linkage between this service and the IT training for out-of-school youth. This approach has the advantage of providing needed on-the-job skills to the individual and community, an opportunity to gain workplace acumen, and skills/knowledge for employment once they leave the program. Upgraded school labs could also be opened in the evenings for community access, adult education for ICT-related knowledge/skills, SME support, etc.
- B. UWI Computer Science Offering**— With the region's increased focus on leveraging ICTs for economic development and the University of West Indies (UWI) being the regional provider of an array of educational offerings (with some courses offered via

distance learning), consideration should be given to expanding UWI's current distance education offerings to include its degreed Computer Science program. This may require shared infrastructure, as discussed earlier in the "Pipes" section of this report. As the region builds its reliance on ICTs, it is essential that St. Lucia focus on expanding the requisite ICT skills/knowledge base. Every effort should be made to link UWI courses or other programs to the ICT-related activities currently in place or planned by the local community colleges.

- C. Developing Local Educational Content**—There is the need to develop a broad-based regional plan for distance learning in order to meet the needed workforce skills required by ICT opportunities. In addition to UWI, local colleges could refine their curriculum and deliver local course material to multiple locations across the island and throughout the region via distance learning technologies. The OECS has a number of initiatives in place that could be very instrumental in contributing significantly towards improving educational opportunities in the ICT arena. This would require a regional focus and commitment of resources to turn current class-room curriculum into an online format and to establish the communications capability necessary to deliver the content to remote locations across the island and region.
- D. Pursue Links with U.S. and U.K. Universities**—With the proper communications capabilities, the potential exists to deliver a world-class, accredited university education to the Caribbean. A growing number of universities provide audio distance learning over the Internet, and in some situations, offer two-way video. While the region does have the UWI, these capabilities would make it possible to provide scholarships to local students to get their degrees without having to leave St. Lucia, or any of the Caribbean Countries. This has the advantage of lowering costs to the student and improving the probability that the student will remain in country and contribute to the local economy. In addition, donor organization or private foundation scholarships may be possible. To take advantage of this on a broad scale will require the establishment of a broadband network to provide access at a reasonable cost. For video-based education, there is the need access to a video-enabled classroom, but this could be a shared facility with UWI and the local community colleges. This approach, while more costly than distance learning over the Internet, has the critical advantage of the classroom dynamics and interaction, for a richer and more rewarding learning experience.

# St. Lucia: ICT Assessment

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## Appendix A – Digital Economy 2000

On June 5, 2000, the U.S. Department of Commerce (DOC) issued its third annual report on the information technology revolution and its impact on the U.S. economy, titled "Digital Economy 2000."<sup>32</sup> This series of reports has been critical to providing a more comprehensive understanding on the direct and indirect role/impact of the information technology (IT) sector within the U.S. In introducing the report, then-Vice President Gore presented several key highlights from the report:

- IT accounts for half or more of the gains in U.S. productivity since 1995. The U.S. enjoyed a 2.8 percent productivity growth from 1995 to 1999--double the 1.4 percent rate of 1973 to 1995. Improved productivity has lowered inflation and raised real wages.
- IT is lowering inflation. Falling IT prices have directly pulled down overall average inflation by 0.5 percentage points a year. In addition, by raising productivity, IT lowered inflation of other industry sectors.
- The IT sector is rapidly creating jobs at high wages. IT jobs average \$58,000 a year, 85 percent higher than the average for the private sector. Between 1994 and 1998, employment in IT industries expanded by 30 percent, from 4.0 million to 5.2 million jobs. IT occupations that pay the best and require the most education have been growing most rapidly.

Former Secretary of Commerce, William M. Daley, writes in the Report's preface:

*"What we can see clearly are expanding opportunities. To meet these opportunities, we will have to ensure a stable and conducive economic and legal environment for continuing innovation in information technology and e-commerce. We need to encourage the building of a broadband infrastructure that allows all Americans to have access to the advanced services that support the Internet, and take the steps necessary with respect to privacy, consumer protection, security, reliability, and intellectual property rights that will inspire confidence in the Internet. To realize the full potential of this digital economy, every person and every business must be able to participate fully and make their own unique contribution to its development."*

The Executive Summary of the Report provides a strong message regarding the impact of ICTs on the U.S. economy. In addition to the above highlights, these include:

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<sup>32</sup> *Digital Economy 2000*, U.S. Department of Commerce, <http://www.esa.doc.gov/de2k2.htm>.

- The Internet in particular is helping to level the playing field among large and small firms in business-to-business e-commerce.
- There is growing evidence that firms are moving their supply networks and sales channels online and participating in the new online marketplaces.
- Advances in information technologies and the spread of the Internet are also providing significant benefits to individuals.
- The vitality of the digital economy is grounded in the IT-producing industries--the firms that supply the goods and services that support IT-enabled business processes, the Internet, and e-commerce.
- Although IT industries still account for a relatively small share of the economy's total output--an estimated 8.3 percent in 2000--they contributed nearly a third of real U.S. economic growth between 1995 and 1999.
- IT industries have also been a major source of new R&D investments.
- New investments in IT are helping to generate higher rates of U.S. labor productivity growth.
- Growth in the IT workforce accelerated in the mid-1990s, with the most rapid increases coming in industries and job categories associated with the development and use of IT applications.
- Analysis of the computer and communications industries in particular suggest that the pace of technological innovation and rapidly falling prices should continue well into the future.
- Businesses outside the IT sector almost daily announce IT-based organizational and operating changes that reflect their solid confidence in the benefit of further substantial investments in IT goods and services.

While the above reflects dynamics taking place in the U.S. economy relative to the ICT sector and its broader impact on the economy, it also reflects the potential value of ICTs in other economies--including developing and transitioning economies. This is of specific relevance the OECS/ECTEL countries as they seek to grow their economies, not so much by their reliance on traditional agricultural and tourism base, but by expanding their reliance on ICTs for growing their service, information, and knowledge-based sectors.

# St. Lucia: ICT Assessment

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## Appendix B – 1999 ITU Statistics

Each year, the International Telecommunications Union (ITU) publishes a *World Telecommunications Development Report*<sup>33</sup> that provides statistical data for all countries. Its March 2001 report included an expanded set of data that, for the first time, included data on mobile cellular. In addition to this worldwide report, the ITU periodically publishes regional-specific reports with more detailed discussions on a given geographical region. In April 2000, an *Americas Telecommunications Indicators 2000* report was published.<sup>34</sup>

The ITU-compiled data serves as rich resource material for understanding the dynamics taking place in telecommunications. While there are several acknowledged weaknesses in the reports (such as timing, accuracy, and incompleteness), they are still the best set of normalized data whereby trends can be identified and macro-level regional/country comparisons made.

For purposes of this ICT Assessment, selective 1999 data (the most recent available from the ITU) has been extracted from the *World Telecommunications Development Report 2000-2001* for the ECTEL countries and a few other Caribbean Islands (Barbados, Jamaica, and Trinidad/Tobago), along with selected income-level data. Combined, this data provides a quick snapshot of the current telecommunications situation in the ECTEL countries, including St. Lucia.

The following tables provide more details of the situation in St. Lucia. Following each table are keynotes clarifying some of the data on the tables, as well as short comments with respect to what one may conclude from the data.

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<sup>33</sup> *World Telecommunications Development Report 2000-2001-- World Telecommunications Indicators*, ITU, Geneva, March 2001.

<sup>34</sup> *Americas Telecommunications Indicators 2000*, ITU, Geneva, April 2000.

### Basic Indicators

Country	Population – 1999		GDP – 1998		Main Phone Lines	
	Total (Millions)	Density (per km)	Total (US\$ B)	Per Capita (US\$)	Totals (000s)	Teledensity (per 100)
<b>ECTEL Countries</b>						
Dominica (U-M)	0.08	102	0.3	3,391	21.3	27.88
Grenada (U-M)	0.09	271	0.3	3,635	29.4	31.51
St. Kitts/Nevis (U-M)	0.04	148	0.3	6,840	20.1	51.76
St. Lucia (U-M)	0.15	250	0.6	3,815	44.5	28.93
St. Vincent/Gr (L-M)	0.11	291	0.3	2,395	23.6	20.88
Barbados (U-M)	0.27	626	2.3	8,731	115.0	42.71
Jamaica (L-M)	2.56	224	6.9	2,707	509.6	19.91
Trinidad/Tobago (U-M)	1.29	252	6.1	4,726	278.9	21.58
Lower-Middle Income Total/Avg.	861.83	24	1,341.0	1,621	103,294.4	11.99
Upper-Middle Income Tot/Avg.	634.96	27	2,945.1	4,705	126,649.4	19.95
High Income Tot/Avg.	891.52	26	23,263.6	26,288	521,516.1	58.50
Americas Tot/Avg.	814.62	20	11,413.4	14,207	271,006.1	33.27
WORLD	5,980.91	44	29,686.5	5,111	906,713.6	15.16

**NOTES:**

1. Calculations for GDP vary considerably based on source and calculations used. Here, GDP figures are presented utilizing ITU's methodology and normalized across all countries in a consistent manner.
2. Teledensity is the number of phones per 100 inhabitants.

**Observations:**

- The populations of the ECTEL islands are small (typically less than 100,000), but relatively concentrated (with between 100 to nearly 300 people per square kilometer), due to the small size of the islands; Grenada has 271 people per square kilometer.
- The economies of the ECTEL islands are relatively small (between US\$300-600 million annual GDP), but on a per capita basis, they are relatively high (between US\$2,400-6,000 per capita GDP), placing most ECTEL countries in what is considered the Upper-Middle income band. St. Lucia's GDP is US\$600 million and US\$3,815 GDP per capita.
- Relative to the world average for Upper-Middle income countries, the ECTEL countries have a higher than average teledensity (ranging from 28-52 whereas the average is 20); St. Lucia's teledensity is 28.93. St. Vincent/Grenadines is a Lower-Middle income country, but here too, it is above the average of similar countries (teledensity of 21 versus an average of 12).

### Main Telephone Lines

Country	Main Telephone Lines			Teledensity		
	1995 (000)	1999 (000)	CAGR % 1995- 1999	1995	1999	CAGR % 1995-1999
<b>ECTEL Countries</b>						
Dominica (U-M)	17.8	21.3	4.6	24.13	27.88	3.7
Grenada (U-M)	23.2	29.4	6.1	26.02	31.51	4.9
St. Kitts/Nevis (U-M)	14.4	20.1	8.6	36.32	51.76	9.3
St. Lucia (U-M)	30.6	44.5	9.8	21.02	28.93	8.3
St. Vincent/Gr (L-M)	18.2	23.6	6.7	16.46	20.88	6.1
Barbados (U-M)	90.1	115.0	6.3	34.53	42.71	5.5
Jamaica (L-M)	291.8	509.6	15.0	11.67	19.91	14.3
Trinidad/Tobago (U-M)	209.3	278.9	7.4	16.78	21.58	6.5
Lower-Middle Income Total/Avg.	76,081.5	103,294.4	7.9	9.94	11.99	6.7
Upper-Middle Income Tot/Avg.	89,505.5	126,649.6	9.1	14.90	19.95	7.6
High Income Tot/Avg.	460,053.5	521,516.1	3.2	52.81	58.50	2.6
Americas	221,402.5	271,006.1	5.2	28.71	33.27	3.7
WORLD	691,601.0	906,713.6	7.0	12.15	15.16	5.7

**NOTES:**

1. CAGR = Compound Annual Growth Rate

**Observations:**

- With the exception of St. Kitts/Nevis and St. Lucia, growth in main lines and teledensity between 1995 and 1999 is less than the world averages for similar income level countries; St. Lucia's teledensity is 28.93 is close to that of Dominica (27.88), but substantially less than St. Kitts/Nevis's teledensity of 51.76. The world average is 15.16. St. Lucia's growth in main lines during 1995-1999, however, was the highest of the ECTEL countries with a 9.8% growth rate.

### Local Telephone Network

Country	Main Telephone Lines – 1999				Faults per 100 Main Lines/year 1999
	Capacity Used (%)	Automatic	Digital (%)	Residential (%)	
<b>ECTEL Countries</b>					
Dominica (U-M)	61.1	100.0	100.0	85.0	9.0
Grenada (U-M)	83.0	100.0	100.0	81.0	1.1
St. Kitts/Nevis (U-M)	---	100.0	100.0	77.0	---
St. Lucia (U-M)	---	100.0	100.0	76.0	---
St. Vincent/Gr (L-M)	61.6	100.0	100.0	78.0	9.4
Barbados (U-M)	---	100.0	100.0	67.0	---
Jamaica (L-M)	---	100.0	100.0	---	---
Trinidad/Tobago (U-M)	72.1	100.0	100.0	82.3	75.0
Lower-Middle Income Total/Avg.	82.5	99.2	51.7	79.0	31.9
Upper-Middle Income Tot/Avg.	84.4	99.5	84.2	75.3	19.8
High Income Tot/Avg.	89.5	100.0	95.9	69.6	10.6
Americas	87.8	99.8	91.9	67.8	14.1
WORLD	81.4	99.8	89.6	73.1	24.8

**NOTES:**

**Observations:**

- Used switching capacity across all the ECTEL countries is 61-83 percent (Grenada is 83 percent). The world average is 81.4 percent and the average for Upper-Middle income countries is 84.4 percent. Dominica and St. Vincent/Grenadines fall significantly below this rate, with only about 61 percent of switching capacity used. Figures are not available for St. Lucia.
- All the switching capacity for the main telephone lines is 100 percent automatic and digital.
- The percentage of main telephone lines that are residential is higher than countries with comparable income levels (76-85 percent versus an average of 75 percent for Upper-Middle income countries). Seventy-six percent of St. Lucia's lines are residential.
- While the data is not available for all ECTEL countries, the faults per 100 main lines appears significantly less than other Lower-Middle and Upper-Middle income countries (no doubt due in part to digital switching and a more concentrated user base). Grenada has only 1.1 faults per 100 main lines per year, compared to an average of 19.8 for Upper-Middle income countries. Data was not available for St. Lucia.

### Teleaccessibility – 1999

Country	Residential Main Lines		Public Telephones		
	Total (000s)	Per 100 Households	Total (000s)	Per 1000 Inhabitants	As % of Main lines
<b>ECTEL Countries</b>					
Dominica (U-M)	15.9	77.5	0.31	4.20	1.67
Grenada (U-M)	23.8	76.9	0.20	2.17	0.69
St. Kitts/Nevis (U-M)	12.0	>100.0	0.17	4.23	1.07
St. Lucia (U-M)	30.7	69.7	0.42	2.88	1.26
St. Vincent/Gr (L-M)	18.4	73.7	0.21	1.87	0.90
Barbados (U-M)	77.0	81.1	0.87	2.13	0.50
Jamaica (L-M)	---	---	2.07	0.82	0.59
Trinidad/Tobago (U-M)	229.5	66.5	2.15	1.66	0.77
Lower-Middle Income Total/Avg.	76,538.6	38.3	943.04	1.15	0.93
Upper-Middle Income Tot/Avg.	93,147.3	58.5	2,662.24	4.22	2.13
High Income Tot/Avg.	348,714.4	106.1	4,282.43	4.85	0.83
Americas	182,027.6	78.5	3,644.01	4.54	1.35
WORLD	618,042.5	51.2	11,577.02	2.02	1.31

#### Observations:

- The percentage of households with phones throughout the ECTEL countries is considerably higher than the world averages for the Lower-Middle and Upper-Middle income countries (70->100 percent compared to 38-58 percent; St. Lucia has 69.7 percent residential main lines per 100 households).
- The ECTEL countries' number of public telephones per 1000 inhabitants is quite close to the world average for their respective income level, however, as a percentage of main telephone lines, they are somewhat lower than the world average (likely due to the high level of phone lines that exist in households). St. Lucia has 2.88 public telephones per 1000 inhabitants compared to an Upper-Middle income average of 4.22.

### Largest City Main Lines – 1999

Country	Largest City			Teledensity	Rest Of Country	Overall Country Teledensity
	Population as % of Total	Main Lines				
		(000s)	% of Total			
<b>ECTEL Countries</b>						
Dominica (U-M)	13.5	7.4	39.5	82.22	17.37	25.23
Grenada (U-M)	21.4	10.7	36.2	53.30	25.58	31.51
St. Kitts/Nevis (U-M)	54.2	---	---	---	---	---
St. Lucia (U-M)	35.2	---	---	---	---	---
St. Vincent/Gr (L-M)	14.3	4.3	18.0	26.28	19.98	20.88
Barbados (U-M)	43.0	---	---	---	---	---
Jamaica (L-M)	29.7	---	---	---	---	---
Trinidad/Tobago (U-M)	26.0	6.27.2	24.1	19.95	22.15	21.58
Lower-Middle Income Total/Avg.	13.2	26,618.2	27.3	25.06	9.17	11.71
Upper-Middle Income Tot/Avg.	16.0	27,558.3	24.9	27.87	16.15	18.04
High Income Tot/Avg.	10.4	29,676.1	15.2	60.97	52.23	53.40
Americas	13.4	17,537.8	33.1	20.01	9.29	11.29
WORLD	7.8	96,758.1	18.1	24.56	9.00	10.16

**NOTES:**

**Observations:**

- With the exception of Dominica and St. Vincent/Grenadines, the percentage of the population of the ECTEL countries living in the largest city is considerably higher than comparable income level countries, but likely consistent with small island nations. St. Lucia has 35.2% of its population living in its largest city.
- Teledensity of the largest ECTEL cities appears to be quite high (53-82 compared to 28 for Upper-Middle income countries) but, again, this is likely due to the nature of island nations. However, some data is missing for several of the islands, including St. Lucia. Grenada's largest city teledensity is 53.3 compared to an average of 27.87 for Upper-Middle income countries.
- There is a significant disparity between the teledensity of the largest city and the rest of the country (e.g., for Dominica, the largest city which contains only 13.5 percent of country's population has a teledensity of 82.22, whereas the rest of the country has a teledensity of 7.37). This is an extreme situation, but reflects the disparity, even though in most cases this is not as exaggerated. Grenada's teledensity for its largest city is 53.3 compared to an overall country teledensity of 31.51. Figures were not available for St. Lucia.

### Telephone Tariffs - 1999

Country	Residential (US\$)		Business (US\$)		Local Calls US\$	% GDP per Capita
	Connection	Monthly Subscription	Connection	Monthly Subscription		
<b>ECTEL Countries</b>						
Dominica (U-M)	20	2.7	20	7.5	---	1.0
Grenada (U-M)	85	14.1	85	40.7	---	4.6
St. Kitts/Nevis (U-M)	2	3.0	27	3.7	0.02	0.6
St. Lucia (U-M)	---	---	---	---	---	---
St. Vincent/Gr (L-M)	37	6.3	37	14.8	0.09	3.2
Barbados (U-M)	49	15.5	49	42.4	---	2.1
Jamaica (L-M)	16	2.7	23	5.8	0.06	1.5
Trinidad/Tobago (U-M)	11	4.6	22	27.8	0.04	1.2
Lower-Middle Income Total/Avg.	107	4.0	163	7.6	0.05	3.5
Upper-Middle Income Tot/Avg.	82	8.1	129	15.6	0.07	1.8
High Income Tot/Avg.	106	11.5	116	16.6	0.10	0.7
Americas	100	7.9	134	16.3	0.06	3.3
WORLD	94	6.5	128	10.4	0.08	5.6

**NOTES:**

- The % **GDP per capita** column is the subscription cost as a percentage of GDP per capita and is calculated based on 1998 GDP and population data.

**Observations:**

- Connection rates for linking up telephone service are typically less in ECTEL countries than in countries with similar income levels (for both residential and businesses). For Grenada, the costs are close to the world average for Upper-Middle income countries (US\$85 for both residential and business compared to average of US\$82 and US\$129). Figures were not available for St. Lucia.
- Monthly subscription costs for Grenada are considerably higher than the average for Upper-Middle income countries (for residential, US\$14.10 compared to US\$8.10; and for business, US\$40.70 compared to US\$15.60). It should be noted that this is 1999 data, and rates have since been reduced. Again, data was not available for St. Lucia.
- Grenada's Telephone Tariffs as a percentage of GDP are very high compared to other Upper-Middle income countries (4.6 percent compared to an average of 1.8 percent). Figures were not available for St. Lucia.

### Cellular Subscribers

Country	Cellular Mobile Subscribers					As % of Total Telephone
	Subscribers (000s)		CAGR % 1995-1999	Teledensity 1999	% Digital 1999	
	1995	1999				
<b>ECTEL Countries</b>						
Dominica (U-M)	---	0.7	---	0.86	100.0	3.1
Grenada (U-M)	0.4	2.0	49.8	2.15	---	6.4
St. Kitts/Nevis (U-M)	---	0.7	---	1.81	---	3.4
St. Lucia (U-M)	1.0	1.9	23.9	1.25	---	4.5
St. Vincent/Gr (L-M)	0.2	1.4	60.3	1.25	7.0	5.7
Barbados (U-M)	4.6	30.0	59.7	11.14	90.0	20.7
Jamaica (L-M)	45.2	144.4	33.7	5.64	---	22.1
Trinidad/Tobago (U-M)	6.4	38.7	57.1	2.99	---	12.2
Lower-Middle Income Total/Avg.	2,719.3	19,670.2	64.0	2.28	25.6	16.0
Upper-Middle Income Tot/Avg.	7,526.5	85,097.6	83.4	13.4	66.1	40.2
High Income Tot/Avg.	76,404.0	36,904.8	44.9	37.79	70.6	39.2
Americas	40,257.2	135,128.8	35.3	16.59	10.8	33.3
WORLD	90,719.8	491,342.5	52.6	8.22	70.2	35.2

#### Observations:

- Cellular/Mobile data for ECTEL countries is sketchy and, therefore, its use is limited for drawing conclusions.
- It is clear that the entry of Cellular/Mobil has been late in coming to the ECTEL countries, and that, across the board, the growth rate between 1995 and 1999 has been considerably less than the growth in countries of similar income levels (24-60 percent on a very small base, whereas the average growth rate for the Upper-Middle income level is nearly 85 percent for this same period). St. Lucia's compound annual growth rate for 1995-1999 was 23.9 percent, whereas Grenada's was 49.8%.
- Teledensity of Cellular/Mobile as of 1999 is considerably less than countries with comparable income levels (teledensity of Cellular/Mobil of ECTEL being between 1 and 2 whereas the average for Lower-Middle is over 2, and for Upper-Middle income countries it is over 13). St. Lucia's teledensity of Cellular/Mobile subscribers is 1.25.
- Cellular/Mobile as a percentage of the total teledensity is considerably less than averages for comparable countries (3-6.5 percent compared to 16-40 percent). This is due to a late start, but also likely influenced to some degree by the relatively high main line telephone teledensity. The total teledensity for Cellular/Mobile subscribers in St. Lucia is 4.5%, which is much lower than the 35.2 percent world average.

### International Telephone Traffic – 1999

Country	Outgoing Telephone Traffic					International Circuits (000)
	Million Minutes		CAGR % 1995-1999	Minutes Per Inhabitant	Minutes Per Subscriber	
	1995	1999				
<b>ECTEL Countries</b>						
Dominica (U-M)	7.5	7.3	-0.8	94.8	340.1	0.4
Grenada (U-M)	7.8	10.3	7.4	110.5	350.7	0.6
St. Kitts/Nevis (U-M)	8.0	13.1	12.9	337.3	651.7	---
St. Lucia (U-M)	12.7	13.4	1.9	88.3	332.5	---
St. Vincent/Gr (L-M)	---	11.6	---	102.5	491.1	0.4
Barbados (U-M)	32.0	45.0	8.9	167.1	391.3	---
Jamaica (L-M)	62.0	70.1	3.1	27.4	137.5	---
Trinidad/Tobago (U-M)	58.6	67.8	3.7	53.5	243.2	1.9
Lower-Middle Income Total/Avg.	4,149.4	5,558.2	7.2	6.6	54.2	141.0
Upper-Middle Income Tot/Avg.	6,313.3	10,005.1	12.1	15.8	79.0	150.5
High Income Tot/Avg.	50,164.3	81,451.7	12.9	91.4	156.3	599.3
Americas	22,343.8	39,319.9	15.1	48.3	145.1	256.0
WORLD	63,416.6	100,805.4	12.2	17.2	111.4	1,014.8

**NOTES:**

**Observations:**

- The outgoing international traffic from the ECTEL islands on a per inhabitant basis is completely “off the charts” relative to comparable income level countries (88-333 minutes per inhabitant for ECTEL countries compared to an average for Upper-Middle income countries of 16). St. Lucia had the lowest number of outgoing international minutes per inhabitant, 88.3.
- On a per subscriber basis, this comparison is equally significant (333-652 minutes compared to 79 minutes for Upper-Middle income countries). St. Lucia has 332.5 outgoing international minutes per subscriber.
- These disparities are most likely due to the nature of a tourist-based economy, but are also likely to be partially due to island Diaspora and family members living in the U.S., U.K., and Canada.
- The extremely high outgoing international traffic is a real “cash cow” for the incumbent telecommunications provider and will require serious attention during market liberalization.

### Telecommunications Staff – 1999

Country	Telecommunications Staff			Main Lines per Employee		
	(000s)		CAGR % 1995-1999	1995	1999	CAGR % 1995-99
	1995	1999				
<b>ECTEL Countries</b>						
Dominica (U-M)	0.2	0.2	-7.2	81	130	12.7
Grenada (U-M)	0.3	0.3	-0.3	85	109	6.4
St. Kitts/Nevis (U-M)	0.2	0.2	-5.0	70	119	14.3
St. Lucia (U-M)	0.4	0.4	-0.9	79	107	10.7
St. Vincent/Gr (L-M)	0.2	0.2	-5.7	87	142	13.2
Barbados (U-M)	1.0	1.1	2.2	90	105	4.0
Jamaica (L-M)	4.3	3.2	-7.4	67	160	24.1
Trinidad/Tobago (U-M)	2.7	2.8	0.4	77	100	7.0
Lower-Middle Income Total/Avg.	1,112.1	1,114.7	0.1	68	92	7.9
Upper-Middle Income Tot/Avg.	642.9	700.9	2.2	139	179	6.5
High Income Tot/Avg.	2,359.5	2,550.5	2.0	195	2.4	1.2
Americas	1,316.9	1,574.1	4.6	168	172	0.6
WORLD	5,357.4	5,843.3	2.2	129	154	4.7

**NOTES:**

**Observations:**

- Across the ECTEL countries, it is quite clear that between 1995 to 1999, the current telecommunications provider (C&W) has been undergoing cost-reduction efforts, including dropping staff (0.3 – 7.2 reduction in staffing for this period). St. Lucia's telecom staff dropped 0.9%.
- The number of main lines per telecommunications employee has naturally grown over this same period, but for the Upper-Middle income countries, ECTEL countries are still considerably below the world averages (107-130 lines per employee compared to an average of 179 for Upper-Middle income countries and a world average of 154). For St. Vincent/Grenadines, the comparison is favorable (142 compared to an average for Lower-Middle income countries of 92). St. Lucia has 107 main lines per employee.

## Telecommunications Revenue

Country	Telecommunication Revenue – 1999				
	Total (M US\$)	Per Inhabitant (US\$)	Per Main Line (US\$)	Per Employee (US\$)	As a % of GDP
<b>ECTEL Countries</b>					
Dominica (U-M)	13.4	175.0	628	81,650	5.1
Grenada (U-M)	---	---	---	---	---
St. Kitts/Nevis (U-M)	27.8	712.6	1,512	168,350	10.4
St. Lucia (U-M)	---	---	---	---	---
St. Vincent/Gr (L-M)	24.8	219.3	1,050	149,487	9.0
Barbados (U-M)	191.9	712.6	1,669	174,453	8.1
Jamaica (L-M)	462.6	180.7	908	145,066	6.6
Trinidad/Tobago (U-M)	226.9	175.6	814	81,679	3.1
Lower-Middle Income Total/Avg.	25,590.9	31.1	256	23,030	2.1
Upper-Middle Income Tot/Avg.	92,6045	145.9	733	138,086	2.9
High Income Tot/Avg.	682,740.4	766.1	1,310	268,690	2.7
Americas	344,154.7	427.8	1,276	220,233	2.8
WORLD	841,921.1	144.5	934	147,222	2.6

**NOTES:**

**Observations:**

- While information is sketchy for the ECTEL countries, on a per inhabitant basis, telecommunications revenue is considerably higher than the average for similar income countries (US\$219 compared to US\$31 for Lower-Middle income and US\$175-713 compared to US\$146 for Upper-Middle income countries).
- There is also considerably higher revenue for the ECTEL countries on a per line basis as well as a per employee basis (US\$628-1,512 compared to US\$733 for Upper-Middle income countries and US\$256 for Lower-Middle income countries).
- Telecommunications revenue as a percentage of GDP is also very high for the ECTEL countries (5.1-10.4 percent compared to an average of 2.1 percent for Lower-Middle and 2.9 percent for Upper-Middle income countries).

## Telecommunications Investment

Country	Telecommunication Investment – 1999				
	Total (M US\$)	Per Inhabitant (US\$)	Per Main Line (US\$)	As % of Revenue	As a % of GFCF
<b>ECTEL Countries</b>					
Dominica (U-M)	---	---	---	---	---
Grenada (U-M)	---	---	---	---	---
St. Kitts/Nevis (U-M)	3.1	79.5	200	12.6	4.8
St. Lucia (U-M)	---	---	---	---	---
St. Vincent/Gr (L-M)	4.1	36.0	172	16.4	5.5
Barbados (U-M)	28.1	104.3	244	14.6	5.5
Jamaica (L-M)	135.8	53.0	266	29.4	6.6
Trinidad/Tobago (U-M)	69.7	54.3	264	32.8	4.5
Lower-Middle Income Total/Avg.	7,557.5	9.5	77	30.3	3.0
Upper-Middle Income Tot/Avg.	28,087.5	46.0	229	32.1	4.8
High Income Tot/Avg.	127,612.9	143.4	245	18.7	2.5
Americas	47,807.6	61.0	178	14.0	5.1
WORLD	188,486.6	33.0	210	22.6	2.9

**NOTES:**

- GFCF = Gross Fixed Capital Formation

**Observations:**

- The ITU report does not provide sufficient information on the ECTEL countries to detect much in the way of telecommunications investments other than to say it appears to be within the averages relative to population, but lower than average relative to telecommunications revenue.

## Information Technology

Country	Internet – 1999				Estimated PCs	
	Hosts		Users		Total (000)	Per 100 Pop
	Total	Per 10K Pop	Total	Per 10K Pop		
<b>ECTEL Countries</b>						
Dominica (U-M)	181	23.66	2.0	261.44	5	6.54
Grenada (U-M)	3	0.32	2.5	267.70	11	11.78
St. Kitts/Nevis (U-M)	8	2.06	2.0	516.10	6	15.48
St. Lucia (U-M)	13	0.85	3.0	195.18	21	13.66
St. Vincent/Gr (L-M)	---	---	3.0	265.09	11	9.72
Barbados (U-M)	68	2.53	6.0	222.82	21	7.80
Jamaica (L-M)	367	1.43	60.0	234.35	110	4.30
Trinidad/Tobago (U-M)	4,852	37.54	30.0	232.14	70	5.42
Lower-Middle Income Total/Avg.	376,585	4.28	6,593.6	78.84	19,516	2.57
Upper-Middle Income Tot/Avg.	2,347,283	36.97	29,297.5	461.50	36,291	5.80
High Income Tot/Avg.	69,150,849	775.65	186,099.3	2,088.05	309,641	34.80
Americas	56,005,148	687.50	94,407.6	1,158.92	170,532	21.50
WORLD	72,005,852	120.46	235,449.42	398.44	389,890	6.84

**NOTES:**

**Observations:**

- Overall, the number of Internet hosts in the ECTEL countries is considerably below the averages for similar income countries. Dominica, while still under the average, is at least close (excluding Dominica, the range is .3-2 hosts per 10,000 population whereas the average for Upper-Middle income countries is 37; St. Lucia has .85 hosts per 10,000 population).
- The number of Internet users in 1999 is very low, with 2,000-3,000 per country. The number of Internet users per 10,000 population ranges between 195-516 in ECTEL countries compared to the average for Upper-Middle income countries of 461; St. Lucia has 195 users per 10,000 population.
- There is a high percentage of PCs per 100 population compared to other countries of similar income levels (6.5-15.5 per 100 population compared to 2.6 for Lower-Middle and 5.8 for Upper-Middle income countries). St. Lucia has 13.66 PCs per 100 population.
- The relatively high availability of PCs and the comparatively low use of the Internet is likely a direct result of limited access and costs (but mostly costs, since there are a high number of main lines per household across the ECTEL countries).

## Network Growth

Country	New Telephone Lines Added (1998-1999)		New Mobil Subscribers Added (1998-1999)		New Internet Hosts Added (1998-1999)	
	Total (000)	CAGR %	Total (000)	CAGR %	Total (000)	CAGR %
<b>ECTEL Countries</b>						
Dominica (U-M)	1.3	6.3	---	---	---	22.3
Grenada (U-M)	1.9	7.1	0.6	42.7	35.8	41.4
St. Kitts/Nevis (U-M)	1.7	9.2	0.3	59.1	---	60.0
St. Lucia (U-M)	4.1	10.1	---	---	---	-43.5
St. Vincent/Gr (L-M)	2.6	12.3	0.7	89.3	---	---
Barbados (U-M)	2.0	1.7	18.0	150.0	---	54.5
Jamaica (L-M)	39.3	8.4	65.8	83.6	---	14.0
Trinidad/Tobago (U-M)	14.8	5.6	12.4	47.0	2.9	147.6
Lower-Middle Income Total/Avg.	6,729.7	7.0	8,453.7	75.6	17.4	5.0
Upper-Middle Income Tot/Avg.	10,883.9	9.4	39,033.5	84.9	1,078.1	84.9
High Income Tot/Avg.	13,213.6	2.6	102,211.4	43.6	27,283.8	65.2
Americas	11,686.4	4.5	38,894.7	40.5	23,905.9	74.5
WORLD	58,626.8	6.9	172,045.8	53.9	28,460.4	65.4

**NOTES:**

**Observations:**

- Growth in the number of main lines taking place between 1998-1999 in the ECTEL countries is close to the averages for similar income countries, with Dominica and Grenada being slightly less (Dominica's compound annual growth rate (CAGR) is 6.3, and Grenada's is 7.1); the average for Upper-Middle income countries is 9.4. St. Lucia's CAGR was 10.1%.
- With the exception of St. Vincent/Grenadines, the growth in Cellular/Mobile for ECTEL countries is well below the growth rates for countries with comparable income levels (43-60 percent compared to 85 percent for Upper-Middle income countries; St. Vincent/Grenadines had an 89 percent growth in 1999 and Grenada's growth rate was 42.7 percent). Figures were not available for St. Lucia.
- Growth in Internet hosts throughout the ECTEL countries is also well below comparable averages, but data is insufficient to make any additional observations.

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