LIMITED
LC/CAR/L.32
10 March 2005
ORIGINAL: ENGLISH

# MEASURING THE INFORMATION SOCIETY IN THE CARIBBEAN: AN ASSESSMENT OF THE CAPABILITIES OF STATISTICAL OFFICES IN CDCC MEMBER STATES

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## Introduction

The area of Information Technology has grown exponentially over the last decade and so, too, has the need for statistical indicators to assess this growth. Many of the countries in the Caribbean Development and Cooperation Committee (CDCC) region are only now embracing this new technology and it appears that the region has lagged behind in publishing regular data series on Information Technology Indicators (ITI).

It is a gap that has engaged the attention of the Economic Commission for Latin America and the Caribbean (ECLAC) for some time, but more so following the twentieth Session of the CDCC, which convened in St Croix, United States Virgin Islands, in April 2004. The CDCC member countries urged ECLAC to seek funding to pursue project activities aimed at fostering the development of a Caribbean Information Society. An important aspect of this is the issue of measurement. To assess where we are going as a region in this regard we need first to establish, by means of reliable baseline data, where we are at present.

The role of information and communication technologies (ICT) in economic growth and social change has received considerable attention in recent years, particularly in the debate on the "new economy". The production, dispersion and use of ICT vary considerably among and within countries, although they continue to spread and their economic importance grew during the 1990s.

To focus the policy debate, especially in light of the recent proliferation and subsequent crash in the market value of "dot.com" firms, reliable and comprehensive indicators are needed in order to track developments in new information technologies and understand their impact on our economies and societies. As ICT has only been recognised as a major source of economic and social change in recent years, official statistics on ICT are still under development.

Over the past years, however, much progress has been made in developing internationally comparable ICT statistics. International agencies, such as the Organisation for Economic Cooperation and Development (OECD) and Eurostat, together with statistical offices in OECD member countries, have worked together to develop common definitions, methods, and surveys of ICT. Over a very short time span, these national statistical offices have made great strides towards responding to the challenge and providing high-quality, timely ICT statistics.

In his flagship address at the Millennium Summit of September 2000, the Secretary General of the United Nations, Mr. Kofi Annan made a declaration encompassing the scope of the work of the United Nations and its future direction. This Millennium Declaration made specific mention of ICTs and their role in achieving the overall Millennium Development Goals (MDGs). ICTs can be used as a tool in a number of areas such as poverty reduction, education, the delivery of health care and government services, to name a few. Target 18 of Goal 8 of the Declaration makes specific reference to ICTs in the following statement: "*in cooperation with the private sector make available the benefits of new technologies, specifically information and communications*". The aim of this study is therefore to investigate the importance which national statistical offices in the region place on the collection of these indicators and to assess the stage that member countries have reached in collecting and publishing some of these basic indicators.

The study comes at a time when census information from the 2000 Round of Censuses is being made available. Most countries included questions on computer ownership and internet access on their census questionnaires, the results of which can be used as benchmark data. The information from the census can also be used as a basis for future collection on a geographic basis and for more in-depth household-based surveys on information technology usage.

In addition, regional governments have been trying to design effective policies to facilitate the use of ICTs in an effort to stimulate economic development. Statistics are crucial to the development of policies and well defined statistics essential to the formulation of policy and for international comparison.

**Methodology**

The study initially intended to use a three-phased approach to collect data from member countries. A questionnaire seeking information on the availability of ITI was e-mailed to the' statistical offices of member States, wherever possible. This was followed up by telephone inquiries. A series of visits to selected countries to develop more comprehensive country profiles was planned as the final stage. Unfortunately, time and budget constraints did not permit.

One member State, Grenada, was not included in the survey due to the devastation caused by Hurricane Ivan. It is expected that this country would be surveyed at a later date.

The questionnaire, which is attached as Annex 1, is divided into five sections:

- Section 1: Background information
- Section 2: Data collection
- Section 3: Internet usage
- Section 4: Other agencies
- Section 5: Miscellaneous

Section 1 sought information on the name of the agency, web address details and staffing complements.

Section 2 listed 27 selected ICT indicators and invited respondents to indicate the ones which they collected together with the frequency of collection and the latest information available. Respondents were also asked to list any other ICT-related indicators that they collected and to detail constraints which they faced in collecting these or any other ICT indicators. A full list of the selected indicators is included as Annex 2.

The 27 selected indicators were further categorized into four groups for ease of analysis. These are as follows:

- Telecommunications equipment indicators (10)
- Telecommunications infrastructure indicators (9)
- Cost indicators (5)
- ICT sector indicators (3)

Section 3 investigated internet and other forms of ICT usage by statistical offices.

Section 4 looked at "Other government agencies" in the country involved in the collection of ICT indicators, particularly those dealing with regulating the telecommunications industry as well as those responsible for the advancement of Information Technology.

Section 5 specifically requested information on surveys on Internet usage by households and the business community in member States. It also requested information on the survey activity of the statistical offices.

The output from this study provides a snapshot of the availability of ITI in the region. Additionally, the study documents the agencies responsible for regulating the telecommunications industry in the countries and the agencies responsible for moving forward the ICT agenda.

The study also details any surveys conducted on the utilization of Information Technology by households and businesses. These results will set the stage for a more comprehensive look at the impact of such technology on the economic and social activity in the region.

## Findings

Responses were received from 14 of the 22 countries surveyed at the time of preparing this paper. As expected, there was considerable variation among member States with regard to the number of indicators collected and their abilities to collect the data.

In all of the responding member States, there were a minimum of three government agencies involved in the collection, compilation and publication of ICT indicators. The agencies involved were the statistical offices, the agencies responsible for regulating the telecommunications industry and information technology units.

The regulatory bodies collected mostly data relating to their function, while the information technology units were primarily concerned with surveys on internet usage by households and business establishments. The statistical offices collected a wider cross section of data, but did not consider these collections a priority at this time. As such, there does not appear to be a sustained effort to develop ICT sector-based indicators.

Based on the frequency of the information being collected by member States and the gaps in the data, there does not appear to be a coordinated approach to collecting indicators for the purpose of measuring growth in ICTs.

**Indicators collected**

The number of indicators collected by the statistical offices of member States ranged from seven to 27 as indicated in Table 1. The majority of offices collected at least 10 indicators.

- Only one statistical office, Montserrat, collected all of the selected indicators.
- One other office, Anguilla, collected 75% of the indicators.
- Two offices, Saint Lucia and the British Virgin Islands, collected between 50% and 60% of the indicators.
- Six offices, the Bahamas, Barbados, Dominica, Guyana, St. Vincent and the Grenadines and Trinidad and Tobago, collected between 40 and 50%.
- The other four offices, Aruba, Belize, Netherlands Antilles and St. Kitts and Nevis, collected less than 40%.

It is no accident that Montserrat heads the list of countries in terms of the number of indicators collected. The country has embarked on a programme which incorporates the use of ICT for development.

The Strategic Objectives for 2003–2006 prepared by the Department of Administration clearly outline the policy for the development of ICTs in the country:

"*Development of the ICT capability is also required:*

> *to support the achievement of a professional HR function within government*
>
> *to enable Montserrat to take full advantage of opportunities for economic and social development in an information age, and*

*to enhance the provision of information and services to Montserratians relocated overseas, to advance the success of initiatives to encourage their return*".

More than half of the statistics offices reported that 60% or more of the indicators they collected were census based. This has implications with regard to the frequency with which updated information on these indicators can be made available as censuses are conducted once every 10 years.

Statistical offices will have to find other means to update these data on a more regular basis. Those offices that conduct regular household and establishment surveys can attach ICT modules on an annual basis. Others can "piggy back" on the surveys being conducted by the information technology units, providing that these will not be one-off surveys.

**Table 1**
**Number of selected ICT indicators collected**

| Country | Selected Indicators | | | | | |
|---|---|---|---|---|---|---|
| | Collected | Not collected | Not Applicable | % collected | Census Based | % |
| ANGUILLA | 18 | 6 | 3 | 75% | 10 | 56% |
| ARUBA | 7 | 20 | | 26% | 3 | 43% |
| BAHAMAS | 13 | 14 | | 48% | 7 | 54% |
| BARBADOS | 12 | 15 | | 44% | 10 | 83% |
| BELIZE | 9 | 18 | | 33% | 6 | 67% |
| BRITISH VIRGIN ISLANDS | 15 | 12 | | 56% | 10 | 67% |
| DOMINICA | 13 | 14 | | 48% | 10 | 77% |
| GUYANA | 12 | 15 | | 44% | 11 | 92% |
| MONTSERRAT | 27 | | | 100% | 8 | 30% |
| NETHERLANDS ANTILLES | 10 | 17 | | 37% | 10 | 100% |
| ST, KITTS/NEVIS | 9 | 18 | | 33% | 8 | 89% |
| ST. LUCIA | 16 | 11 | | 59% | 10 | 63% |
| ST. VINCENT & GRENADINES | 11 | 16 | | 41% | 9 | 82% |
| TRINIDAD & TOBAGO | 13 | 14 | | 48% | 8 | 62% |

- Six offices, Barbados, Dominica, Guyana, Netherlands Antilles, St. Kitts and Nevis and St. Vincent and the Grenadines, reported that 75% or more of the ICT indicators were collected as part of the 2000 Round of Censuses. (2000 or 2001).

- Four offices, Belize, British Virgin Islands, Saint Lucia and Trinidad and Tobago, reported that between 60 to 74% were from the last Census.

- The countries where the least proportion of ICT indicators were collected from the census were Montserrat, Aruba, Bahamas and Anguilla, with 30, 43, 54 and 56%, respectively.

- All census-based data is available by geographic location and sex.

Most of the other indicators were collected on an annual basis with eight of the offices having data for 2003.

**Types of indicators collected**

The greater proportion of indicators collected fell into the telecommunications equipment and infrastructure groups. Very few countries collected any information on the costs of information technology services. Table 2 provides detail. The coverage of the ICT sector was somewhat surprising given that the 2000/2001 Census results are being made available and that most, if not all, of the statistics offices collect and publish manufacturing and external trade statistics.

In fact most statistics offices should be able to provide information on ICT sector employment from the census or their business registers. They should also be in a position to provide information on ICT goods imported or exported based on merchandise trade data. ICT goods manufactured can also be made available from their manufacturing surveys. That they are not readily available and were not included as additional indicators compiled, underscores the low priority currently given to the collection of ICT indicators. It may also indicate some definitional problems with ICT. A list of International Standard Industrial Classification (ISIC) codes, compiled by the OECD Secretariat, that make up the ICT sector is shown at Annex 3. A corresponding list of Harmonised System (HS) codes representing ICT goods is shown at Annex 4.

- All the statistical offices from the responding countries collected indicators relating to the availability of telecommunications equipment in the household:

  - Nine offices, Anguilla, Barbados, the British Virgin Islands, Dominica, Guyana, Montserrat, The Netherlands Antilles, Saint Lucia and St. Vincent and the Grenadines, collected all 10 of these indicators.

  - Three offices, the Bahamas, St. Kitts and Nevis and Trinidad and Tobago, collected eight.

  - The remainder, Aruba and Belize, collected four or more indicators.

  - In all cases, 75% or more of the indicators in this category were census based.

**Table 2**
**ICT indicators collected by type**

| Country | Type of Indicator | | | | |
|---|---|---|---|---|---|
| | Equipment (10) | | Infrastructure | Cost | ICT Sector |
| | Collected | Census based | (9) | (5) | (3) |
| ANGUILLA | 10 | 10 | 6 | | 2 |
| ARUBA | 4 | 3 | 1 | | 2 |
| BAHAMAS | 8 | 6 | 4 | | 1 |
| BARBADOS | 10 | 10 | 2 | | |
| BELIZE | 6 | 6 | 2 | | 1 |
| BRITISH VIRGIN ISLANDS | 10 | 10 | 2 | | 3 |
| DOMINICA | 10 | 10 | 3 | | |
| GUYANA | 10 | 10 | 1 | | 1 |
| MONTSERRAT | 10 | 8 | 9 | 5 | 3 |
| NETHERLANDS ANTILLES | 10 | 10 | | | |
| ST, KITTS/NEVIS | 8 | 8 | 1 | | |
| ST. LUCIA | 10 | 10 | 3 | | 3 |
| ST. VINCENT & GRENADINES | 10 | 9 | | 1 | |
| TRINIDAD & TOBAGO | 8 | 8 | 4 | | 1 |

- Twelve statistical offices collected indicators relating to the telecommunications infrastructure:
  - Of these only one, Montserrat, collected all nine of the selected indicators.
  - Another, Anguilla, collected six indicators, while
  - The remaining 10, Aruba, the Bahamas, Barbados, Belize, the British Virgin Islands, Dominica, Guyana, St. Kitts and Nevis, Saint Lucia and Trinidad and Tobago collected four or less.
- Only two statistical offices collected any of the selected indicators relating to costs of information technology:
  - One office, Montserrat, collected all five of the selected indicators, while
  - The St. Vincent and the Grenadines office only collected one cost indicator.

- Nine statistical offices collected indicators relating to the ICT sector.
    - Of these, three offices, the British Virgin Islands, Montserrat and Saint Lucia, collected all three of the selected indicators.
    - Two other offices, Anguilla and Aruba, collected two of the indicators, while
    - Four offices, the Bahamas, Belize, Guyana and Trinidad and Tobago, collected one indicator.
- Only two offices reported that they collected any additional ICT indicators. One office, Aruba, collected information on the number of housing units with cable and the other, Guyana, the number of incoming/outgoing international calls.

**Constraints**

The number of statistical offices indicating that the collection of these indicators was not a priority is somewhat surprising when one realizes that some of these countries have developed IT strategies.

Statistics offices in member States are all governed by statistical acts which give them wide-ranging powers of collection, compilation and dissemination of data. As such, statistical offices can decide what data sets to collect and the importance they place on their collection either through a visionary process or through the persuasions of users, the main one being their own government. That some of the acts are toothless is the basis of an entirely different study.

Be that as it may, it is instructive that statistics offices have not placed a higher premium on the collection of ICT indicators or the measurement of the contribution of ICT to the economy. Several reasons could be offered for this situation, among them being that the offices themselves have not been tuned to the importance of ICT as a means of diversification of the economy; that member governments have not clearly outlined their interest in measuring ICT to the statistics offices or that governments have, instead, decided to set up separate units for this purpose.

With regard to the selected indicators identified by this study:

- Nine statistical offices, Anguilla, Barbados, Belize, British Virgin Islands, Dominica, St. Kitts and Nevis, Saint Lucia, St. Vincent and the Grenadines and Trinidad and Tobago cited “Not a priority at this time” as one of the constraints to collecting the selected ICT indicators.
    - Of these, five offices, Anguilla, Belize, St. Kitts and Nevis, St. Vincent and the Grenadines and Trinidad and Tobago, also reported insufficient funds as an additional constraint.

- Overall seven offices, the above-mentioned five together with Guyana and the Netherlands Antilles indicated that insufficient funds were a constraint.

- Three offices, Guyana, Netherlands Antilles and Trinidad and Tobago, reported that staffing was a constraint.

- Other issues, such as the reluctance of respondents to provide data or the tardy provision of data, were listed as constraints by the Aruba, Bahamas and Montserrat offices, while Trinidad and Tobago cited "definitional problems" as another limitation.

In response to a question on constraints to collecting additional indicators:

- Eleven statistical offices, Anguilla, Aruba, the Bahamas, Barbados, Belize, British Virgin Islands, Dominica, Guyana, Netherlands Antilles, St. Kitts and Nevis and St. Vincent and the Grenadines cited "Not a priority at this time" as being a constraint to performing this task.

It is perhaps reasonable to assume that this would also apply to Saint Lucia and Trinidad and Tobago both of whom had listed "Not a priority at this time" as a constraint to collecting the selected indicators.

Table 4 provides more detail.

**Other governmental agencies**

The survey found that several government ministries/agencies were involved in managing ICT in member States. There were ministries/agencies responsible for regulating the telecommunications industry and others responsible for ICT. In eight of the 13 countries for which information was available these were different. Annexes 5, 6 and 7 provide more detail.

It is interesting to note that in all, except one country, the traditional providers of government information, the Government Information Services, were not responsible for ICT.

- Eight offices, the Bahamas, Barbados, British Virgin Islands, Dominica, Montserrat, Saint Lucia, St. Vincent and the Grenadines and Trinidad and Tobago reported that they were aware of ICT strategies developed for their respective countries.

- Three offices, Barbados, Saint Lucia and Trinidad and Tobago, reported that at least one survey on the use of the internet by the business community had been conducted. The statistics office was responsible for conducting the survey in Saint Lucia.

- Four offices, Aruba, Barbados, Saint Lucia and Trinidad and Tobago, revealed that household surveys on internet usage had been conducted in their respective

countries. Only in Saint Lucia was the statistics office responsible for the conduct of the survey.

The minimal use of statistics offices in the collection of data on household and business use of information technology supports the view for the integration of data collection efforts in member States. It would appear that regional governments have opted instead to create separate information technology units with mandates that include data collection.

One of the objectives of the Barbados National Council for Science and Technology (NCST), the agency responsible for promoting ICT in the country, taken from their report entitled "Barbados' Information Technology Indicators Study" is instructive:

*"One of the key objectives of the (NCST) is the coordination, collection and dissemination of current Information Technology-related research. In keeping with this mandate, the organization has adopted a more systematic program of research to help them better understand the impact of Information Technology on both the Barbadian corporate and residential segments".*

**Role of statistics offices**

Is there a role for statistical offices to play in the collection of these indicators and, ultimately, in the measurement of growth in the ICT sector? Given the head start these offices now enjoy, it would seem a logical platform from which to begin. Statistics offices already collect import/export, manufacturing and employment data and compile Gross Domestic Product (GDP) estimates. At least half of them conduct business and household surveys on an annual or more frequent basis which can be used for the collection of useful information.

Nearly half of the responding offices are already using information technology to collect data with the Netherlands Antilles conducting their business establishment surveys via the web. Saint Lucia is expected to use the web as an option during their next round of national accounts surveys.

Import and manufacturing statistics would measure the availability of ICT goods, while export statistics would provide information on earnings from these goods. Employment and GDP data provide measures of growth.

There are several issues that will need to be addressed in addition to the importance attached to the collection of data on ICTs. The resources of statistical offices, both physical and financial, their use of the technology and issues of data availability and timeliness will be crucial to their abilities to deliver the proverbial goods at the end of the day. There is also the need to integrate the services of the different agencies involved in compiling data on ICTs in order to avoid duplication of effort.

A look at the activities of statistics offices in member States reveals that:

- Seven statistical offices, the Bahamas, Barbados, Belize, Dominica, the Netherlands Antilles, Saint Lucia and Trinidad and Tobago, conduct business establishment surveys on an annual or more frequent basis.

- Eleven statistical offices, Anguilla, the Bahamas, Barbados, Belize, Dominica, Guyana, Montserrat, the Netherlands Antilles, Saint Lucia, St. Vincent and the Grenadines and Trinidad and Tobago, conduct household surveys on an annual or more frequent basis.

- Eight offices, Anguilla, the Bahamas, Belize, the British Virgin Islands, Montserrat, the Netherlands Antilles, Saint Lucia and Trinidad and Tobago, used the world wide web for disseminating information.

- Two others disseminated information using e-mail facilities.

- Only one of the offices did not have exclusive use of internet facilities.

- Six offices, Anguilla, Aruba, Guyana, the Netherlands Antilles, Saint Lucia and St. Vincent and the Grenadines, collected data through the use of information technology.

**Table 3**
**Number of persons employed in statistics offices**

| Country | Office Web Address | Employment | | | | | | Statistics Office Workers per 10,000 Population |
|---|---|---|---|---|---|---|---|---|
| | | Full Time | | | Part time | | | |
| | | Total | Male | Female | Total | Male | Female | |
| **Anguilla** | www.gov.ai/statistics | **5** | | 5 | | | | 3.8 |
| **Antigua & Barbuda** | | | | | | | | |
| **Aruba** | None | **30** | 14 | 16 | | | | 2.6 |
| **Bahamas** | Bahamas Stats | **85** | 12 | 73 | **1** | | 1 | 2.7 |
| **Barbados** | Being designed | **70** | 29 | 41 | **1** | | 1 | 2.6 |
| **Belize** | www.cso.gov.bz | **28** | 16 | 12 | | | | 0.9 |
| **British Virgin Islands**[1] | www.dpu.gov.vg | **27** | 9 | 18 | | | | 12.2 |
| **Cuba** | www.dne.sld.cu | | | | | | | |
| **Dominica** | None | **13** | 4 | 9 | **2** | | 2 | 1.7 |
| **Dominican Republic** | www.one.gov.do/ | | | | | | | |
| **Grenada** | | | | | | | | |
| **Guyana** | Not yet in operation | **121** | 24 | 97 | | | | 1.4 |
| **Haiti** | | | | | | | | |
| **Jamaica** | www.statinja.com | | | | | | | |
| **Montserrat** | www.gov.ms | **6** | | 6 | | | | 8.6 |
| **Netherland Antilles** | www.cbs.an | **31** | 15 | 16 | | | | 1.4 |
| **Puerto Rico** | | | | | | | | |
| **St. Kitts/Nevis** | None | **14** | 4 | 10 | | | | 2.9 |
| **St. Lucia** | www.stats.gov.lc | **34** | 11 | 23 | **4** | | 4 | 2.1 |
| **St. Vincent & the Grenadines** | None | **15** | 6 | 9 | | | | 1.3 |
| **Suriname** | | | | | | | | |
| **Trinidad & Tobago** | www.cso.gov.tt | **220** | 99 | 121 | | | | 1.7 |
| **United States Virgin Islands** | | | | | | | | |
| | **Total** | **699** | 243 | 456 | **8** | | 8 | 1.8 |

Note: This table includes information for countries that did not respond to the survey.
[1] Staff of the Development Planning Unit which has responsibility for Statistics.

## Conclusions

The OECD Secretariat has done a substantial amount of work in defining the ICT sector and the indicators which would allow for international comparison. Statistical offices in OECD member States have refined much of this work and have developed their individual industry codes to define the ICT sector. They have also developed HS codes that represent ICT goods. Some work has been commenced by the Caribbean Community (CARICOM) Secretariat and the Eastern Caribbean Central Bank (ECCB) in measuring an ICT services as part of a wider programme of quantifying trade in services.

A look at the impact of ICTs on the Canadian economy in 2000 revealed that the ICT sector accounted for 5.1% of GDP. It also revealed that during the period 1993–2000 employment in the ICT sector had grown by 7.2% per annum when compared with the economy-wide figure of 2.6%. Of note also was that employment in the ICT sector was characterized by a higher level of education and above average earnings among its employees. There are lessons to be learnt for the Caribbean here.

The recent passage of Hurricane Ivan through the Caribbean and the trail of destruction wrought on export earning infrastructure, crops, educational facilities and the psyche of the people once again raises the issue of sustainability in fragile economies dependent on tourism and agriculture. ICTs could provide one of the elusive cogs in the wheel of economic diversity.

For a region so prone to disaster, ICTs offer a relatively quick way of returning the education system to normalcy. It might also assist in reducing the brain drain if it can provide its residents with alternative means of earning a living.

The region now has to fully explore the benefits of ICT but must first put in place mechanisms which will speed up the transition to a Caribbean information society. There is also the need to integrate the functions of the different entities involved in the collection of ICT indicators at the national level in order to reduce duplication.

In pursuing the mandate given by its CDCC member States, ECLAC can be in the forefront of this new thrust by heightening the awareness of statistical agencies with regard to benchmarking data for measuring growth in the information sector. It can also assist in the process of creating definitions which, while comparable internationally, still capture any unique characteristics of the region.

This study has been a useful beginning but there is much more work to be done.

# TABLE 4: Constraints to collecting ICT Indicators

| Country | Constraints to collecting selected ICT Indicators | | | | Constraints to collecting additional ICT Indicators | | | |
|---|---|---|---|---|---|---|---|---|
| | Not a Priority | Staffing | Funding | Other | Not a Priority | Staffing | Funding | Other |
| ANGUILLA | X | | X | | X | | X | |
| ARUBA | | | | X | X | | | |
| BAHAMAS | | | | X | X | | | |
| BARBADOS | X | | | | X | | | |
| BELIZE | X | | X | | X | | | X |
| BRITISH VIRGIN ISLANDS | X | | | | X | | | |
| DOMINICA | X | | | | X | | | |
| GUYANA | | X | X | | X | X | | |
| MONTSERRAT | | | | X | | | X | |
| NETHERLANDS ANTILLES | | X | X | | X | | | |
| ST, KITTS/NEVIS | X | | X | | X | X | X | |
| ST. LUCIA | X | | | | | | | |
| ST. VINCENT & GRENADINES | X | | X | | X | | | |
| TRINIDAD & TOBAGO | X | X | X | X | | X | X | |

## Table 5: ICT Employment in Selected Countries

| ISIC Rev 3 | Anguilla[1] | | | Antigua | | | | | | Aruba[2] | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 2003 | | | 2001 Census | | | 1991 Census | | | 2000 Census | | | 1991 Census | | |
| | Total | Male | Female | Total | Male | Female | Total | Male | Female | Total | Male | Female | Total | Male | Female |
| ICT Manufacturing | | | | | | | | | | | | | | | |
| 30 | | | | | | | 1 | | 1 | | | | | | |
| 3130 | | | | | | | | | | | | | | | |
| 3210 | | | | | | | 29 | 17 | 12 | | | | | | |
| 3220 | | | | | | | 2 | 1 | 1 | 12 | 8 | 4 | 24 | 4 | 20 |
| 3230 | | | | | | | | | | 4 | 3 | 1 | | | |
| 3312 | | | | | | | 1 | 1 | | | | | | | |
| 3313 | | | | | | | | | | 2 | 2 | | | | |
| ICT Wholesaling | | | | | | | | | | | | | | | |
| 5150 | | | | | | | 1 | 1 | | 17 | 12 | 5 | | | |
| Telecommunications | | | | | | | | | | | | | | | |
| 6420 | 186 | 90 | 96 | 93 | 50 | 43 | 350 | 244 | 106 | 540 | 338 | 202 | | | |
| ICT Services | | | | | | | | | | | | | | | |
| 7123 | | | | 5 | 4 | 1 | | | | 2 | 2 | | 237 | 210 | 27 |
| 72 | 15 | 10 | 5 | 16 | 11 | 5 | 2 | | 2 | | | | | | |
| Total | 201 | 100 | 101 | 114 | 65 | 49 | 386 | 264 | 122 | 577 | 365 | 212 | 261 | 214 | 47 |

**Notes**

[1] 2003 Business Register

[2] ISIC UNSO Rev used in 2000, ISIC Rev 2 used in 1991

## Table 5: ICT Employment in Selected Countries

| ISIC Rev 3 | Grenada | | | St. Kitts/Nevis | | | St. Vincent & the Grenadines | | |
|---|---|---|---|---|---|---|---|---|---|
| | 1991 Census | | | 2001 Census | | | 1991 Census | | |
| | Total | Male | Female | Total | Male | Female | Total | Male | Female |
| ICT Manufacturing | | | | | | | | | |
| | | | | | | | | | |
| 30 | 2 | 2 | | | | | | | |
| | | | | | | | | | |
| 3130 | | | | 93 | 6 | 87 | 9 | 8 | 1 |
| | | | | | | | | | |
| 3210 | 12 | 2 | 10 | 310 | 35 | 275 | 34 | 4 | 30 |
| | | | | | | | | | |
| 3220 | 1 | 1 | | 5 | 2 | 3 | 5 | 2 | 3 |
| | | | | | | | | | |
| 3230 | | | | 4 | | 4 | | | |
| | | | | | | | | | |
| 3312 | | | | 3 | | 3 | | | |
| | | | | | | | | | |
| 3313 | | | | 12 | | 12 | | | |
| | | | | | | | | | |
| ICT Wholesaling | | | | | | | | | |
| | | | | | | | | | |
| 5150 | 2 | 1 | 1 | 1 | | 1 | 1 | 1 | |
| | | | | | | | | | |
| Telecommunications | | | | | | | | | |
| | | | | | | | | | |
| 6420 | 193 | 140 | 53 | 141 | 100 | 41 | 197 | 156 | 41 |
| | | | | | | | | | |
| ICT Services | | | | | | | | | |
| | | | | | | | | | |
| 7123 | 2 | 2 | | | | | 2 | 2 | |
| | | | | | | | | | |
| 72 | 74 | 16 | 58 | 226 | 72 | 154 | | | |
| | | | | | | | | | |
| Total | 284 | 164 | 122 | 795 | 215 | 580 | 248 | 173 | 75 |

**Notes**

## TABLE 6: Selected ICT Indicators

| Country | Main lines | | Mobile Subscribers | | Internet Subscribers | | Population | |
|---|---|---|---|---|---|---|---|---|
| | Number | Year | Number | Year | Number | Year | Number | Year |
| **Anguilla** | 6,200 | 2002 | 1,800 | 2002 | 3,000 | 2002 | 13,008 | 2003 |
| **Antigua & Barbuda** | 38,740 | 2002 | 38,205 | 2002 | 10,000 | 2002 | 78,600 | 2003 |
| **Aruba** | 37,132 | 2002 | 53,000 | 2001 | 27,742 | 2003 | 114,200 | 2003 |
| **Bahamas** | 131,680 | 2003 | 121,760 | 2002 | 84,000 | 2003 | 317,000 | 2003 |
| **Barbados** | 134,000 | 2003 | 140,000 | 2003 | 100,000 | 2003 | 269,700 | 2003 |
| **Belize** | 33,278 | 2003 | 60,403 | 2003 | 30,000 | 2002 | 295,200 | 2003 |
| **British Virgin Islands** | 11,700 | 2002 | 8,000 | 2002 | | | 22,187 | 2003 |
| **Cuba** | 574,420 | 2001 | 17,851 | 2002 | 120,000 | 2001 | 11,313,000 | 2003 |
| **Dominica** | 23,708 | 2002 | 9,358 | 2002 | 4,474 | 2002 | 78,200 | 2003 |
| **Dominican Republic** | 901,800 | 2003 | 2,120,400 | 2003 | 96,391 | 2003 | 7,813,700 | 2003 |
| **Grenada** | 32,644 | 2003 | 42,293 | 2003 | 4,700 | 2002 | 112,400 | 2003 |
| **Guyana** | 80,441 | 2002 | 87,300 | 2002 | 125,000 | 2002 | 868,100 | 2003 |
| **Haiti** | 130,000 | 2002 | 140,000 | 2002 | 30,000 | 2002 | 8,326,000 | 2003 |
| **Jamaica** | 444,360 | 2002 | 1,400,000 | 2002 | 95,000 | 2003 | 2,645,300 | 2003 |
| **Montserrat** | | | | | | | 7,000 | 2003 |
| **Netherland Antilles** | 81,000 | 2001 | | | 2,000 | 2000 | 222,500 | 2003 |
| **Puerto Rico** | 1,276,500 | 2002 | 1,800,000 | 2002 | 256,600 | 2002 | 3,879,100 | 2003 |
| **St. Kitts/Nevis** | 23,500 | 2002 | 5,000 | 2002 | 4,600 | 2002 | 47,900 | 2003 |
| **St. Lucia** | 51,121 | 2002 | 14,313 | 2002 | 13,000 | 2002 | 162,300 | 2003 |
| **St. Vincent & the Grenadines** | 27,323 | 2002 | 9,982 | 2002 | 5,982 | 2002 | 119,000 | 2003 |
| **Suriname** | 79,815 | 2003 | 168,070 | 2003 | 20,000 | 2002 | 526,100 | 2003 |
| **Trinidad & Tobago** | 325,050 | 2002 | 361,900 | 2002 | 138,000 | 2002 | 1,303,000 | 2003 |
| **United States Virgin Islands** | 69,400 | 2001 | 41,000 | 2001 | 30,000 | 2002 | 110,700 | 2003 |

**Notes :** Main Lines: a telephone line connecting the subscriber's terminal equipment to the public switched network and which has a dedicated port in the telephone exchange equipment. (including commercial lines).

Mobile Subscriber: portable telephones subscribing to an automatic public mobile telephone service which provides access to the Public Switched Telephone Network (PSTN) using cellular technology.

Internet Subscriber: the number of Internet subscribers including dial-up, leased and broadband.

**Source:** International Telecommunications Union Yearbook 2004 and industry estimates

## TABLE 7: Selected ICT Rates per 1,000 persons

| Country | Main lines | | Mobile Subscribers | | Internet Subscribers | |
|---|---|---|---|---|---|---|
| | Rate/1,000 | Year | Rate/1,000 | Year | Rate/1,000 | Year |
| **Anguilla** | 477 | 2002 | 138 | 2002 | 231 | 2002 |
| **Antigua & Barbuda** | 493 | 2002 | 486 | 2002 | 127 | 2002 |
| **Aruba** | 325 | 2002 | 464 | 2001 | 243 | 2003 |
| **Bahamas** | 415 | 2003 | 384 | 2002 | 265 | 2003 |
| **Barbados** | 497 | 2003 | 519 | 2003 | 371 | 2003 |
| **Belize** | 113 | 2003 | 205 | 2003 | 102 | 2002 |
| **British Virgin Islands** | 527 | 2002 | 361 | 2002 | | |
| **Cuba** | 51 | 2001 | 2 | 2002 | 11 | 2001 |
| **Dominica** | 303 | 2002 | 120 | 2002 | 57 | 2002 |
| **Dominican Republic** | 115 | 2003 | 271 | 2003 | 12 | 2003 |
| **Grenada** | 290 | 2003 | 376 | 2003 | 42 | 2002 |
| **Guyana** | 93 | 2002 | 101 | 2002 | 144 | 2002 |
| **Haiti** | 16 | 2002 | 17 | 2002 | 4 | 2002 |
| **Jamaica** | 168 | 2002 | 529 | 2002 | 36 | 2003 |
| **Montserrat** | | | | | | |
| **Netherland Antilles** | 364 | 2001 | - | | 9 | 2000 |
| **Puerto Rico** | 329 | 2002 | 464 | 2001 | 66 | 2002 |
| **St. Kitts/Nevis** | 491 | 2002 | 104 | 2002 | 96 | 2002 |
| **St. Lucia** | 315 | 2002 | 88 | 2002 | 80 | 2002 |
| **St. Vincent & the Grenadines** | 230 | 2002 | 84 | 2002 | 50 | 2002 |
| **Suriname** | 152 | 2003 | 319 | 2003 | 38 | 2002 |
| **Trinidad & Tobago** | 249 | 2002 | 278 | 2002 | 106 | 2002 |
| **United States Virgin Islands** | 627 | 2002 | 370 | 2002 | 271 | 2002 |

**Notes :**

Main Lines: a telephone line connecting the subscriber's terminal equipment to the public switched network and which has a dedicated port in the telephone exchange equipment. (including commercial)

Mobile Subscriber: portable telephones subscribing to an automatic public mobile telephone service which provides access to the Public Switched Telephone Network (PSTN) using cellular technology.

Internet Subscriber: the number of Internet subscribers including dial-up, leased and broadband.

**Source:** International Telecommunications Union Yearbook 2004 and industry estimates

Annex 1

## INFORMATION SOCIETY INDICATORS SURVEY

***Notes for Completing the Questionnaire***

The questionnaire is designed so that it may be completed in Microsoft Word and e-mailed or printed and faxed on completion. Click in the relevant columns in 1.4 and Q1 to enter data or double click in the text boxes to place an "x" in the appropriate box.

The list of indicators in Q1 is by no means exhaustive and can be supplemented in Q2.

***SOME DEFINITIONS***

SECTION 1

| | | |
|---|---|---|
| 1.4 | Part Time | Persons working for less than 30 hours per week. |

SECTION 2

The following codes should be used in the "frequency of Collection" column in Q1:

| | |
|---|---|
| A | Annually |
| C | Census |
| M | Monthly |
| O | Occasional survey |
| W | Weekly |

Reference to "main" residential and fixed lines in Q1, is made in order to exclude extensions.

Q3 – Q6 should only be answered if the respondent has answered "Yes" to any of the categories in Q1 and/or "Yes" in Q2.

For any queries please contact me at (868) 623 5595 ext 2218 or e-mail me at bboxill@eclacpos.org

## SECTION 1: BACKGROUND INFORMATION

1.1 Name of Office:

1.2 Country: 1.3 Web Address:

1.4 Number of Employees:

| Full Time | | Part Time | |
|---|---|---|---|
| **Male** | **Female** | **Male** | **Female** |
| | | | |

**SECTION2: DATA COLLECTION**

Q1. Does the Statistics Office collect any of the following Information Communications Technology Indicators?

| INDICATOR | Yes | Frequency of Collection | Latest Period Available | No |
|---|---|---|---|---|
| Number of households with television sets | | | | |
| Number of persons living in households with television sets | | | | |
| Number of Households with personal computers | | | | |
| Number of persons living in households with personal computers | | | | |
| Number of households with telephones (fixed lines) | | | | |
| Number of persons living in households with fixed lines | | | | |
| Number of households with internet connections | | | | |
| Number of persons living in households with internet connections | | | | |
| Number of households with access to mobile phones | | | | |
| Number of persons living in households with access to mobile phones | | | | |
| Number of (main) fixed line subscribers: Business | | | | |
| Number of (main) fixed line subscribers: Residential | | | | |
| Number of pager subscribers | | | | |
| Number of mobile cellular subscribers | | | | |
| Number of cell sites | | | | |
| Number of Internet cafes | | | | |

| | | | | |
|---|---|---|---|---|
| Number of fixed line service providers | | | | |
| Number of Internet Service Providers(ISPs) | | | | |
| Number of pager service providers | | | | |
| Cost of internet access from ISPs | | | | |
| Cost of internet access from internet cafes | | | | |
| Cost of (main) fixed line services: Business | | | | |
| Cost of (main) fixed line services: Residential | | | | |
| Cost of pager services | | | | |
| Number of persons employed in the telecommunications sector | | | | |
| Number of firms active in Information Communications Technology(ICT) | | | | |
| Number of persons employed in firms active in ICT | | | | |

Frequency of collection

A Annually
C Census
M Monthly
O Occasional survey
W Weekly

Q2. Are there any other data sets not listed above, relating to either Information Technology Indicators or the Telecommunications Sector that are collected by the Statistics Office?

☐ 1 Yes (**Please List below**) ☐ 2 No

**IF YOU HAVE ANSWERED NO TO Q2 AND NO TO ALL THE CATEGORIES IN Q1 PLEASE GO TO Q7.**

**List Data sets**

| INDICATOR | Frequency of Collection | Latest Period Available |
|---|---|---|

Q3. Is any of the information from Q1 and/or Q2 collected by geographic area? (e.g. District/Region/Parish/Settlement)

☐ 1 Yes Please list below ☐ 2 No

Q4. Is any of the information from Q1 and/or Q2 collected by gender composition?

☐ 1 Yes Please list below ☐ 2 No

Q5. Is any of the information collected in Q1 and/or Q2 published?

☐ 1 Yes ☐ 2 No **(Go to Q7)**

Q6. How often is this information published? **(Tick all that apply)**

☐ 1 Monthly

☐ 2 Quarterly

☐ 3 Annually

☐ 4 One off Survey

☐ 5 As part of the Census

☐ 6 Other **(Please Specify)**

Q7. What constraints are there to collecting information on **any** of the data sets listed in Q1 and/or Q2? **(Tick all that apply)**

☐ 1 Not a priority at this time

☐ 2 Definitional problems

☐ 3 Already collected by another institution

☐ 4 Insufficient funds

☐ 5 Other **(Please specify)**

Q8. What constraints if any would there to collecting additional indicators? (**Tick all that apply**)

| | | |
|---|---|---|
| ☐ | 1 | Not a priority at this time |
| ☐ | 2 | Definitional problems |
| ☐ | 3 | Already collected by another institution |
| ☐ | 4 | None |
| ☐ | 5 | Other **(Please specify)** |

Q9. Are there any other institutions in the country that collect/publish any of the information listed in Q1 and/or Q2?

| **Institution/ Contact Person** | **Phone** | **Web address** |
|---|---|---|

## SECTION 3: INTERNET USAGE

Q10. Which members of staff in the Statistics Office have access to the Internet? **(Tick only one)**

| | | |
|---|---|---|
| ☐ | 1 | Head of Department (HOD) only |
| ☐ | 2 | Head of Department and Senior Staff |
| ☐ | 3 | HOD, Senior Staff and some members of support staff |
| ☐ | 4 | All members of staff |
| ☐ | 5 | None |
| ☐ | 6 | Other **(Please Specify)** |

Q11. Does the Statistics Office use the internet to disseminate information?

☐ 1 Yes ☐ 2 No (**GO to Q16)**

Q12. What type of information is disseminated? Please list.

Q13. At what web address can this information be accessed?

**Web address:**

Q14. Does this address have links to any other Government web sites?

☐ 1 Yes ☐ 2 No

Q15. Do any other Government web sites have links to this address?

☐ 1 Yes ☐ 2 No

Q16. Does the Statistics Office use the internet or any other form of Information Communications Technology for data collection purposes?

☐ 1 Yes ☐ 2 No (**Go to Q18)**

Q17. What type of information is collected?

## SECTION 4: OTHER AGENCIES

Q18. List any Government Ministries/Departments/Agencies that use the internet for dissemination or collection of information.

☐ None

**Ministry/Department Agency Phone Web address Contact Person**

Q19. Which Ministry/Department/Agency is responsible for regulating the Tele-communications industry in your country?

**Ministry/Department Agency Phone Web address Contact Person**

Q20. Which Ministry/Department/Agency is responsible for Information Communications Technology? If more than one is responsible please list them and indicate their areas of responsibility.

**Ministry/Department Agency Phone Area of responsibility Contact**

Q21. Does your country have (or is currently developing) a National Information and Communications Technology Strategy/Plan?

☐ 1 Yes ☐ 2 No **(Go to Q23)**

Q22. Which Ministry/Department/Agency is responsible for this strategy?

**Ministry/Department Agency Phone Web address Contact Person**

## SECTION 5: MISCELLANEOUS

Q23. Have any surveys on the utilization of Information Technology by households been conducted?

☐ 1 Yes ☐ 2 No **(GO TO Q26.)**

Q24. In what year was the latest survey conducted? ☐☐☐☐

Q25. Which Ministry/Department/Agency was responsible for the conduct of the survey?

**Ministry/Department Agency Phone Web address Contact Person**

Q26. Have any surveys on the utilization of Information Technology by Business establishments been conducted?

☐ 1 Yes ☐ 2 No **Go to Q29**

Q27. In what year was the latest survey conducted? ☐☐☐

Q28. Which Ministry/Department/Agency was responsible for the conduct of the survey?

**Ministry/Department Agency Phone Web address Contact Person**

Q29. Does your office conduct quarterly/biannual or annual Household surveys?

☐ 1 Yes ☐ 2 No

Q30. Does your office conduct quarterly/biannual or annual Business Establishment surveys?

☐ 1 Yes ☐ 2 No

Q31. Name of person(s) completing the questionnaire:

E-mail address:

Telephone:

THANK YOU FOR YOUR COOPERATION

Annex 2

## LIST OF SELECTED INDICATORS

### Telecommunications equipment

Number of households with television sets
Number of persons living in households with television sets
Number of Households with personal computers
Number of persons living in households with personal computers
Number of households with telephones (fixed lines)
Number of persons living in households with fixed lines
Number of households with internet connections
Number of persons living in households with internet connections
Number of households with access to mobile phones
Number of persons living in households with access to mobile phones

### Telecommunications Infrastructure

Number of (main) fixed line subscribers: Business
Number of (main) fixed line subscribers: Residential
Number of pager subscribers
Number of mobile cellular subscribers
Number of cell sites
Number of Internet cafes
Number of fixed line service providers
Number of Internet Service Providers(ISPs)
Number of pager service providers

### Cost

Cost of internet access from ISPs
Cost of internet access from internet cafes
Cost of (main) fixed line services: Business
Cost of (main) fixed line services: Residential
Cost of pager services

### ICT Sector

Number of persons employed in the telecommunications sector
Number of firms active in Information Communications Technology(ICT)
Number of persons employed in firms active in ICT

Annex 3

## ICT SECTOR

| ISIC Rev 3 | Description |
|---|---|
| | **ICT Manufacturing** |
| 30 | Manufacture of office, accounting and computing machinery |
| | |
| 3130 | Manufacture of insulated wire and cable |
| | |
| 3210 | Manufacture of electronic valves and tubes and other electronic components |
| | |
| 3220 | Manufacture of television and radio transmitters and apparatus for line telephony and line telegraphy |
| | |
| 3230 | Manufacture of television and radio receivers, sound or video recording or reproducing apparatus, and associated goods |
| | |
| 3312 | Manufacture of instruments and appliances for measuring, checking, testing, navigating and other purposes, except industrial process control equipment |
| | |
| 3313 | Manufacture of industrial process control equipment |
| | |
| | **ICT Wholesaling** |
| 5150 | Wholesale of machinery, equipment and supplies |
| | |
| | **Telecommunications** |
| 6420 | Telecommunications |
| | |
| | **ICT Services** |
| 7123 | Renting of office machinery and equipment (including computers) |
| | |
| 72 | Computer and related activities |
| | |

Annex 4

## THE PRODUCT CLASSIFICATION USED TO ESTIMATE ICT SECTOR TRADE

In the absence of tables of international trade in goods and services by detailed industrial activity which are compatible with the national accounts, ICT sector exports and imports have been estimated using the OECD's International Trade in Commodity Statistics (ITCS) database by applying a Harmonised System Rev. 1 (HS1) to ISIC Rev. 3 conversion key. The conversion method was developed within the OECD for the new STAN database – ahead of implementation of a full HS Rev. 1 to detailed ISIC Rev. 3 conversion regime.

The OECD definition of the ICT manufacturing sector (see Annex 1), based on ISIC Rev. 3 has been used as the basis for the ICT trade indicators. Thus, the trade indicators constructed here reflect trade in goods for which the ICT manufacturing sector can be considered the origin (exports) or the destination (imports) according to the UN standard conversion table. This type of aggregation, as well as the use of a single conversion key for all OECD countries, means that the figures reported here are not strictly comparable with those published in national accounts.

The following table shows the conversion of ICT manufacturing codes using the HS REV 1 classification to the ISIC Rev. 3 classification as used in the STAN database.

**HS Rev. 1 to ISIC Rev. 3 conversion regime used to estimate ICT sector trade**

| ISIC Rev. 3 HS Rev. 1 | *less* | DESCRIPTION |
|---|---|---|
| **3000** | | **Office, accounting and computing machinery** |
| 844312 | | Offset printing machinery : Sheet fed, office type (sheet size not exceeding 22 x 36 cm) |
| 8469. | | Typewriters and word-processing machines |
| 8470 | | Calculating machines; accounting machines, cash registers, postage-franking machines, ticket-issuing machines and similar machines, incorporating a calculating device |
| 8471 | | Automatic data processing machines and units thereof; magnetic or optical readers, machines for transcribing data onto data media in coded form and machines for processing such data, not elsewhere specified or included |
| 8472 | | Other office machines (for example, hectograph or stencil duplicating machines, addressing machines, automatic banknote dispensers, coin-sorting machines, coin-counting or wrapping machines, pencil-sharpening machines, perforating or stapling machines) |
| 8473 | | Parts and accessories (other than covers, carrying cases and the like) suitable for use solely or principally with machines of headings Nos. 84.69 to 84.72. |
| 9009 | | Photo-copying apparatus incorporating an optical system or of the contact type and thermo-copying apparatus. |
| **3130** | | **Insulated wire and cable** |
| 8544 | *-854430* | Insulated (including enamelled or anodised) wire, cable (including co-axial cable) and other insulated electric conductors, whether or not fitted with connectors; optical fibre cables, made up of individually sheathed fibres, whether or not assembled with<br>*Ignition wiring sets and other wiring sets of a kind used in vehicles, aircraft or ships* |
| **3210** | | **Electronic valves and tubes and other electronic components** |
| 8532 | | Electrical capacitors, fixed, variable or adjustable (pre-set). |
| 8533 | | Electrical resistors (including rheostats and potentiometers), other than heating resistors. |
| 8534. | | Printed circuits |
| 8540 | | Thermionic, cold cathode or photo-cathode valves and tubes (for example, vacuum or vapour or gas filled valves and tubes, mercury arc rectifying valves and tubes, cathode-ray tubes, television camera tubes). |

| ISIC Rev. 3 HS Rev. 1 | *less* | DESCRIPTION |
|---|---|---|
| 8541 | | Diodes, transistors and similar semiconductor devices; photosensitive semiconductor devices, including photovoltaic cells whether or not assembled in modules or made up into panels; light emitting diodes; mounted piezo-electric crystals. |
| **3210** | | **Electronic valves and tubes and other electronic components (cont'd)** |
| 8542 | | Electronic integrated circuits and micro-assemblies. |
| **3220** | | **TV and radio transmitters and apparatus for line telephony and telegraphy** |
| 8517 | | Electrical apparatus for line telephony or line telegraphy, including such apparatus for carrier-current line systems. |
| 8525 | | Transmission apparatus for radio-telephony, radio-telegraphy, radio-broadcasting or television, whether or not incorporating reception apparatus or sound recording or reproducing apparatus; television cameras. |
| **3230** | | **TV and radio receivers, sound or video recording or reproducing apparatus etc.** |
| 8518 | | Microphones and stands therefore; loud-speakers, whether or not mounted in their enclosures; headphones, earphones and combined microphone/speaker sets; audio-frequency electric amplifiers; electric sound amplifier sets. |
| 8519 | | Turntables (record-decks) record-players, cassette-players and other sound reproducing apparatus, not incorporating a sound recording device. |
| 8520 | | Magnetic tape recorders and other sound recording apparatus, whether or not incorporating a sound reproducing device. |
| | | Video recording or reproducing apparatus. |
| 8521 | | |
| 8522 | | Parts and accessories of apparatus of headings Nos. 85.19 to 85.21. |
| 8527 | | Reception apparatus for radio-telephony, radio-telegraphy or radio-broadcasting, whether or not combined, in the same housing, with sound recording or reproducing apparatus or a clock. |
| 8528 | | Television receivers (including video monitors and video projectors), whether or not combined, in the same housing, with radio-broadcast receivers or sound or video recording or reproducing apparatus. |
| 8529 | | Parts suitable for use solely or principally with the apparatus of headings Nos. 85.25 to 85.28. |
| **3312 +3313** | | **Instruments and appliances for measuring, checking, testing, navigating etc. Industrial process control equipment** |
| 8526. | | Radar apparatus, radio navigational aid apparatus and radio remote control apparatus |
| 9012 | | Microscopes other than optical microscopes; diffraction apparatus. |
| 9014 | | Direction finding compasses; other navigational instruments and appliances. |

| | | |
|---|---|---|
| 9015 | | Surveying (including photogrammetrical surveying), hydrographic, oceanographic, hydrological, meteorological or geophysical instruments and appliances, excluding compasses; rangefinders. |
| 9016 | | Balances of a sensitivity of 5 cg or better, with or without weights. |
| 9017 | | Drawing, marking-out or mathematical calculating instruments (for example, drafting machines, pantographs, protractors, drawing sets, slide rules, disc calculators); instruments for measuring length, for use in the hand (for example, measuring rods and tapes, micrometers, callipers) n.e.s. |
| 9024 | | Machines and appliances for testing the hardness, strength, compressibility, elasticity or other mechanical properties of materials (for example, metals, wood, textiles, paper, plastics). |
| 9025 | | Hydrometers and similar floating instruments, thermometers, pyrometers, barometers, hygrometers and psychrometers, recording or not, and any combination of these instruments. |
| 9027 | | Instruments and apparatus for physical or chemical analysis (for example, polarimeters, refractometers, spectrometers, gas or smoke analysis apparatus); instruments and apparatus for measuring or checking viscosity, porosity, expansion, surface tension or quantities of heat, sound and light |
| 9028 | | Gas, liquid or electricity supply or production meters, including calibrating meters therefor. |
| 9029 | | Revolution counters, production counters, taximeters, mileometers, pedometers and the like; speed indicators and tachometers, other than those of heading No. 90.15; stroboscopes |
| 9030 | | Oscilloscopes, spectrum analysers and other instruments and apparatus for measuring or checking electrical quantities, excluding meters of heading No. 90.28; instruments and apparatus for measuring or detecting alpha, beta, gamma, X-ray, cosmic or other radiationsi |
| 9031 | | Measuring or checking instruments, appliances and machines, not specified or included elsewhere in this Chapter; profile projectors. |
| 9032 | | Automatic regulating or controlling instruments and apparatus. |
| 9033 | | Parts and accessories (not specified or included elsewhere in this Chapter) for machines, appliances, instruments or apparatus of Chapter 90. |

Source: Measuring the Information Economy OECD

Annex 5

## Ministry/Agency Responsible for Regulating the Telecommunicaions Sector

| Country | Ministry/Agency | Phone | WebAddress | Contact |
|---|---|---|---|---|
| **Anguilla** | Communications, Utilties & Housing | 264 497 2651 | www.gov.ai | Bill Withers |
| **Aruba** | General Affairs | 297 588 0300 | | Manolo Giel |
| **Bahamas** | Min of Works & Utilities | 242 322 4830 | | Anita Bernard |
| **Barbados**[1] | Fair Trading Commission<br>Telecommunications Unit | 246 424 0260<br>246 430 2200 | | Director<br>Chief, Telecomms Officer |
| **Belize** | Energy & Communication | 822 2817 | | |
| **British Virgin Islands** | Communications & Works | 284 494 3701 | | |
| **Dominica** | National Telecommunication Regulatory Commission | | www.ectel.int/dma | |
| **Guyana** | Office of the Prime Minister | 592 22 73101 | | |
| **Montserrat** | Min of Comm & Works | 664 491 2521 | www.gov.ms | Alric Taylor |
| **Netherland Antilles** | Bureau Telecommunicatie | 599 9 463 1700 | | |
| **St. Lucia** | National Telecommnication Regulatory Commission | | www.ectel.int/lca | |
| **St. Vincent & the Grenadines** | National Telecommnication Regulatory Commission | (784) 457 2279 | www.ntrc.vc | Mr Apollo Knights |
| **Trinidad & Tobago** | Ministry of Public Administration | 868 628 2175 | | |

Annex 6

## Ministry/Agency responsible for Information and Communications Technology

| Country | Ministry/Agency | Phone | Responsibility | Contact |
|---|---|---|---|---|
| **Anguilla** | Department of Information Technology and E-government Services | 264 497 5233 or 497 2451 x 2700 | | Larry Franklin |
| **Aruba** | General Affairs | 297 588 0300 | | Manolo Giel |
| **Bahamas** | Ministry of Finance | 242 327 1530 | | Ruth Millar |
| **Barbados** | Commerce, Consumer Affairs & Business Development<br>Ministry of the Civil Service<br>Data Processing Department | 246 427 5260<br>246 426 4596<br>246 426 0740 | E-Commerce<br>E-Government<br>ICT solutions, co-ordinating Government's IS & IT resources | Permanent Secretary<br>Permanent Secretary<br>Director |
| **Belize** | Energy & Communication | 822 2817 | | |
| **British Virgin Islands** | Communications & Works | 284 494 3701 | | |
| **Dominica** | Min of Communication, Telecom Unit | 767 448 2401 x 3095 | | Julian Johnson |
| **Guyana** | ICT Unit, Ministry of Finance | 592 22 37041 | | Mr Shafraz Bacchus |
| **Montserrat** | Government Info Services | 664 491 7379 | IT Strategy | Mr. Alric Taylor |
| **Netherlands Antilles** | Bureau Telecommunicatie | 599 9 463 1700 | | |
| **St. Lucia** | Office of the Prime Minister | 758 468 2183 | Public Sector Reform (ICT & Electronic Government) | Cletus Bertin |
| **St. Vincent & the Grenadines** | Min. of Telecommunications, Science & Technology | (784) 457 1007 | | Mr Andre Bailey |
| **Trinidad & Tobago** | Ministry of Public Administration | 868 627 3396 | | Denise White |

Annex 7

| Ministry/Agency responsible for Information and Communications Technology Strategy | | | | |
|---|---|---|---|---|
| | | | | |
| | | | | |
| **Country** | **Ministry/Agency** | **Phone** | **WebAddress** | **Contact** |
| | | | | |
| | | | | |
| **Bahamas** | Min. of Finance, Data Processing Unit | 242 322 4151<br>242 327 1530/1 | | Ruth Millar |
| **Barbados** | Commerce, Consumer Affairs & Business Dev. | 246 427 5270 | www.commerce.gov.bb | Permanent Secretary |
| **British Virgin Islands** | Communications & Works | 284 494 3701 | | |
| **Dominica** | Min of Communication. Telecom Unit | 767 448 2401 x 3095 | | Sylvester Cadette |
| **Montserrat** | Government Information Services | 664 491 7379 | | Mr. Alric Taylor |
| **St. Lucia** | Prime Ministers Office | 758 468 2183 | | Cletus Bertin |
| **St. Vincent & the Grenadines** | Min. of Telecommunications, Science & Technology | 784 457 1007 | | Mr Andre Bailey |
| **Trinidad & Tobago** | Ministry of Public Administration | 868 627 3396 | | Denise White |