Compendium of Practices on the implementation of ICT questions in households and businesses surveys in Latin America and the Caribbean.

With inputs from other sectors.

Draft Version for discussion during the Third Workshop on Information Society Measurement in Latin America and the Caribbean

Observatory for the Information Society in Latin America and the Caribbean ♦

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With the support of the Working Group on harmonization of ICT statistics of the Statistical Conference of the Americas of ECLAC.

Noviembre de 2006

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Summary

The present compendium gathers the Latin America and Caribbean countries experiences that have incorporated core questions on ICT access and use in its households and companies surveys[1]. The compendium tries to join in a single source, the different forms to collect data access and use on Information and Communication Technologies (ICT), and to serve as support material for the ones in charge of ICT Statistics implementation, particularly in the countries of the region. The countries included in the indicators of households or individuals are Brazil, Chile, Costa Rica, El Salvador, Mexico, Paraguay, Dominican Republic and Uruguay and bussiness indicators are Argentina, Chile, Peru and Uruguay.

Note: this first version contains only information on household surveys for five countries: Brazil, Costa Rica, El Salvador, Mexico and Paraguay.

[1] The questions have been compiled by the Partnership in Measurement of ICT for development and presented in the book "Core ICT indicators": http://www.cepal.org/socinfo/noticias/documentosdetrabajo/6/23116/Partnership%20core%20%20indicators%20English.pdf

Chapter 1. Introduction

Various initiatives have been set up in response to the need for data and indicators on the status of the information society in countries throughout the world, particularly in developing countries. One of these is the World Summit on the Information Society (WSIS).[2] The Plan of Action adopted at this summit serves as a basis for work to establish the status of the information society in each country. The Plan contains suggestions relating to the development of indicators on the strength of which it will be possible to evaluate the status of the Information and Communication Technologies (ICT) and, in turn, to benchmark the implementation of this Plan to monitor global progress in the use of ICT.[3]
In Latin America and the Caribbean, the lack of information about ICT present in most of the countries in 2003, motivated ECLAC and the Institute for Connectivity in the Americas (ICA) of the International Development Research Centre of Canada (IDRC) to create the Observatory for the Information Society in Latin America and the Caribbean (OSILAC)[4]. The objective was having an Observatory which would be in charge of fostering the creation of ICT statistics in the region. This Observatory is since its creation under the umbrella of the Statistical Conference of the Americas (SCA) of ECLAC. From 2005, the @LIS project of the European Commission and the PanAmericas program of IDRC, are also supporting OSILAC.

Following the global initiative of the WSIS, the countries of the region held the Regional Preparatory Ministerial Conference of Latin America and the Caribbean for the Second Phase of the World Summit on the Information Society in Rio de Janeiro from 8 to 10 June 2005. At that conference, the countries adopted the Plan of Action eLAC2007, which in goal 26.1 called on participants to "Support and foster, with technical cooperation programmes, institution-building and methodological strengthening and the development of ICT access and usage indicators (...)"[5]. Also, the Statistical Conference of the Americas, in its third meeting in June 2005, decided the creation of a working group on Information and Communication Technologies. OSILAC works together with this group and has jointly proposed the elaboration of this Compendium of Practices.

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[2] The United Nations General Assembly endorsed the holding of the World Summit on the Information Society (WSIS) in two phases. The first phase took place in Geneva from 10 to 12 December 2003 and the second phase took place in Tunis, from 15 to 18 November 2005. The events of the World Summit, which bring together heads of State and Government and other high-profile world leaders, seek, in the long term to place at the top of the global agenda issues such as poverty, environmental degradation and, in this case, the development of an information society. www.itu.int/wsis

[3] Plan of Action of the World Summit on the Information Society, 12 December 2003: E). Follow-up and evaluation 28. A realistic international performance evaluation and benchmarking (both qualitative and quantitative), through comparable statistical indicators and research results, should be developed to follow up the implementation of the objectives, goals and targets in the Plan of Action, taking into account different national circumstances. f) All countries and regions should develop tools so as to provide statistical information on the Information Society, with basic indicators and analysis of its key dimensions. Priority should be given to setting up coherent and internationally comparable indicator systems, taking into account different levels of development."

[4] For more information about OSILAC objectives and activities, see www.cepal.org/socinfo/osilac

[5] Plan of Action eLAC2007, June 2005: "26.1 (...) differentiated by gender and social group and in accordance with the ITU definitions of community access indicators and the recommendations of the World Summit side event on monitoring the information society, taking into account their ongoing evolution and incorporating them into questionnaires and statistical instruments suited to the regional reality."

Another initiative in which the National Statistical Offices of Latin America and the Caribbean are participating through the Economic Commission for Latin America and the Caribbean (ECLAC) and OSILAC, is the Partnership on Measuring ICT for Development. This partnership, launched in June 2005, is formed by the International Telecommunication Union (ITU), the Organization for Economic Co-operation and Development (OECD), the United Nations Conference on Trade and Development (UNCTAD), the UNESCO Institute for Statistics (UIS), the United Nations regional commissions: the Economic Commission for Latin America and the Caribbean (ECLAC), the Economic Commission for Africa (ECA), the Economic and Social Commission for Asia and the Pacific (ESCAP), the Economic and Social Commission for Western Asia (ESCWA), the Statistical Office of the European Community (Eurostat) and the World Bank. This group works to define and collect a common set of ICT indicators and to assist developing countries in their efforts to produce statistics on the Information Society, thereby helping to close the digital divide existing between developed and developing countries.[6]

In the framework of these initiatives, OSILAC has been working jointly with National Statistical Offices and the other members of the Partnership to consolidate a set of core indicators, which was presented at the Thematic Meeting on Measuring the Information Society, held in Geneva from 7 to 9 February 2005. This set is the result of discussions and agreements between National Statistical Offices of developing regions and the agencies members of the Partnership. The definition of those indicators and the proposed questions to be included in surveys, are compiled and explained in the document "Core ICT indicators" (Partnership, 2005b).

Every time we are conscious of the necessity of harmonized information in order to know the state of a thematic within a country, a region or any other geographic context, the first questions arising are: how to measure that thematic, what variables must be considered, what practical cases exist on measuring the subject, how "others" have measured it, what must be the objective population, how to formulate the questions, among others. This document tries to help to answer those questions and to concentrate in a single document all the experiences learned by countries, regions or institutions in that measurement. In addition the document can be seen like a pursuit of the core indicators document mentioned before.

In order to answer these questions, information provided by the National Statistical Offices of Latin America and the Caribbean has been used, together with inputs from other regions.[7] This document is only a step in the process to promote the development of statistics to benchmark the state of advance towards an Information Society and the development of policies for the access and use of ICT.

Measurement of the Information Society

The "Information Society" is a concept that gets more and more importance in the present world, and although the definition and its existence are still object of discussion, the ECLAC's Information Society program (InfoSoc) and the Observatory for the Information Society in Latin America and the Caribbean (OSILAC), have talk about it as

[6] http://measuring-ict.unctad.org

[7] Also, it is hoped to incorporate the case of Spain and practices from Eurostat.

a paradigm that arises thanks to the appearance of new digital technologies that allow a significant increase of information flows and communication processes, that generate new forms of social and productive organizations, and have the potentiality to generate knowledge in society (Katz and Hilbert, 2003).

Since that knowledge is not easily measurable, it arises naturally that to measure the advance of a society in terms of information access and use, it is necessary to create statistics that report access and level of use of the necessary technologies for transmission and processing that information. The new technologies like mobile telephony, computers and the Internet, along with other traditional ones as fix telephone and television, have been the reference point adopted by OSILAC and the Partnership on Measuring ICT for Development[8], to know how and to what extent countries are advancing towards the construction of an Information Society.

The lack of statistics for policies and strategies formulation in favor of the advantage of these technologies for the benefit of society and economic growth, which can also be an object of international comparisons, has been the main challenge that faced countries and the international and regional organizations to determine such advances. The methods harmonization is important for the comparability on time between countries and regions. The internal comparisons allow to make a follow up to implemented policies, whereas the comparisons between countries, allow to examine how in front of similar or different socioeconomic characteristics, countries obtain experiences which allow them to accomplish established goals and the improvement of their indicators with respect to other countries.

One of the main objectives of the project OSILAC creation has been to promote the creation of harmonized statistics on ICT at a sub regional, national and local level, causing the creation of homogenous methodological frame. This same objective has been raised by the Partnership on Measuring ICT for development, with the spirit to solve the international necessity to have comparable statistics for the pursuit and the evaluation of ICT effects in economic and social evolution.

It is in favor of this objective that this compendium as been made, showing the used practices of the region's countries for the implementation of statistics decided and discussed between OSILAC, the National Statistical Offices of most of the developing and developed world countries, and the organisms involved in the Partnership on Measuring ICT for Development.

This compendium gathers the experiences of the Latin American and Caribbean countries that have incorporated modules or sections with core questions recommended by the Partnership, totally or partially, in its surveys of households and business. These core questions can be divided in basic core questions and extended core questions.

Since the construction of indicators on ICT is in a development stage, the application of questions has been a learning process, as much for the planers and producers of the surveys, as for the respondents and the later users of the information. These experiences that countries are having are a source for proposals revision and overall, serves as a base for countries that don't have them yet and need to organize information to facilitate the incorporation of questions decided in their surveys. It is hoped then that

[8] For more information on the Partnership objectives and activities, see http://measuring-ict.unctad.org

this compendium of practices compile these experiences and facilitates the process of measurement of ICT penetration and use.

Chapter 2. ICT indicators and questions in household surveys

The questions that have been incorporated in the countries household surveys, are in their majority those that the Partnership on Measuring ICT for Development has compiled.. These questions are the result of an intense process of consultations of the Partnership members with national organisms of statistics, which in the case of Latin America and the Caribbean it has been carried out by ECLAC and coordinated through project OSILAC. As part of this process, a survey was made that allowed to obtain metadata about the state of official statistics on the information society, provided by the national organisms of statistics of the entire world, from there a series of regional workshops were carried out where core ICT questions relevant to the monitoring of advances in access and use of ICT were analyzed, according with the participants opinion (Partnership 2005a). From these processes, a proposal of a list of ICT core indicators aroused and then presented by the Partnership at the WSIS Thematic Meeting on the Information Society Measurement, counting with the participant's approval (Geneva, February of 2005).

The list includes 10 core indicators denominated basic and 3 denominated extended, as well as a reference indicator on access and electricity service (Partnership 2005b).For each one of these indicators, the Partnership has suggested models of questions and methodological recommendations detailed in the document of core indicators (2005b). Within the basic core indicators is possible to speak about 'use basic indicators' and 'access basic indicators'. It is necessary to make this precision since in some cases, countries just count on first ones, like part of household equipment. In box 1 the summarized list of indicators and formulated questions are presented. The list with detailed information of these indicators is displayed in the Annex I.

Box 1. Core indicators and questions on ICT access and use by households and individuals.

Basic Core indicators

HH1 Proportion of hoseholds with a radio
Does any member of this household/ do you have access to a radio at home?

HH2 Proportion of households with a televisión set
Does any member of this household/ do you have access to a television at home?

HH3 Proportion of households with a fixed telephone line
Does this household have a fixed telephone line at home?

HH4 Proportion of households with a mobile cellular phone
Does any member of this household/ do you have access to a mobile cellular phone?

HH5 Proportion of households with a Computer

Does any member of this household/ do you have access to a Computer at home?

HH6 Proportion of individuals who used a computer
Have you used a Computer in the last 12 months?

HH7 Proportion of households with Internet access at home
Does any member of this household/ do you have Internet access at home, regardless of wether it is used?

HH8 Proportion of individuals who used the Internet
Have you used the Internet in the last 12 months?

HH9 Location of individual use of the Internet in the last 12 months
Where did you use the Internet in the last 12 months?
At home, at workplace, at an educative establishment, at another people´s house, at a comunitary Internet access place, at a commercial Internet access place, in other places.

HH10 Internet activities undertaken by individuals in the last 12 months
For which of the following activities did you use the Internet for private purposes, in the last 12 months?
for getting information, for communicating, for purchasing or ordering goods or services, , for internet banking, for education or learning activities, for dealing/interacting with government organizations, for leasure activities.

Extended core indicators

HH11 Proportion of individuals with use of a mobile phone
Did you have personal use of a mobile phone during some or all of the last 12 months?

HH12 Proportion of households with access to the internet by type of access
What type of internet access services are used for Internet access at home?

HH13 Frequency of Individual access to the Internet in the last 12 months (from any location)
How often did you typically use the Internet during the last 12 months?
At least once a day; at least once a week, but not every day; at least once a month, but not every week; less than once a month.

Referente indicator
HHR18 Proportion of households with electricity

Some countries have incorporated the complete or partial list, whereas others have even incorporating additional more relevant indicators as for example the access barriers for Internet use in households.

2.1. Definition of ICT variables

The definition of the variables recommended globally and used by the institutes and national statistical offices for the later construction of the indicators are hereafter described.

Table 1. Definition of ICT variables

Variable	Definition
Radio access	Ownership of at least one radio receiver per household, including those of sound equipment. Combined equipment as recorders o cassette players and sound equipment are included.
Television access	Ownership of at least one television set in good state in dwelling (In some countries the question or its definition makes reference to a color television set).
Main telephone line access	Possession of at least one household main telephone line. (Some countries measure it only for dwelling)
Mobile phone access	Possession of at least one mobile phone service per household
Computer access	Ownership of one computer (desktop, laptop or hand devices (as for example personal assistants (PDA))
Internet access	Access to Internet in household (Internet is world-wide computer science network of public use. It provides access to several communication services like the World Wide Web, and transmits electronic mail archives, news, entertainment and data).
Computer use	Individual use of computer on the part of individuals included in the study.
Internet use	Individual use of Internet on the part of individuals included in the study.
Places of Internet use	Place or places where habitually the individuals included in the study make use of Internet: home, work, educative establishment, communitarian access place, commercial access place, etc.
Uses given to Internet	Activities that usually are done in Internet by the individuals included in the study, from any site, including workplace: to obtain information, communication, shop, electronic banking, education, interaction with public authorities, entertainment, etc.
Mobile phone use	Individual use of mobile phone on the part of individuals included in the study.
Internet Connection type	Type of connection used in household to accede to Internet. The answers should allow detecting households with broadband access.
Frequency of use	Use frequency (habitual) of individuals included in the study that used Internet, from any site, including the work place: at least once a day; at least once a week, but not every day; at least once a month, but not every week; or less than once a month).

2.2. Socio-demographic variables of reference

The socio-demographic and economic variables are necessary to make an analysis of the status of households and individuals having or not access to the ICT. Social and economical gaps for ICT access and usage can be established by using those variables.

The availability and use of ICT gives account of the technologies penetration that reach households and the levels of use that users give them, but is not sufficient to establish the breaches or differences between a region and another, between a household with basic income or high income, in young households or with children in school age and households with older people. These variables are necessary to quantify what has been denominated the digital divide and/or digital social inclusion.

It is important that ICT relative variables can be compared and correlated with the reference variables described in this section so that public policies based on this information count on a characterization of the sectors that must be favored.

Recently ECLAC has made an investigation about the presence of ICT goods and services in households, based on the information of the censuses of the 2000 round (Eclac, 2006). This study has included a group of socio-economic variables of interest that in greater or smaller degree allow realizing about the differences mentioned in the access and use of ICT. These variables would have to be specified for the indicators calculated for households and for those referring specifically to ICT use on the part of the individuals. Table 2 and 3 present the definition of a basic group of variables that could be used to establish the mentioned gaps and being the base for public policies of access and use of ICT.

Table 2. Socio-demographic variables of reference for households

Variable	**Description**
Geographic zone	Urban Rural
Geographic region	According to the political division of each country
Per capita income quintiles	Quintiles built over the base of household income
Household size	Number of members, including those who are not included in the considered rank of age.
School years of the household members	There are no members studying.. Members only in elementary school. Members only in high school. Members only in.higher education Members only in elementary and high school Members in elementary school and higher education Members in higher education and high school. Members in the three levels of education.
Possession of sewage system	The sewage system, conceived as an essential basic service, whose access indicates the exigency of a minimum basic condition of quality of living in household

Electricity ownership	Electricity as a essential resource for the access to most of the ICT
Activity condition of the head of household	Employed, unemployed, estudent, retired.
Category of occupation of the head of household	Employer, Independent, wage-earning employee, no wage-earning worker
Gender (Head of the household)	Man Woman

Table 3. Reference variables for individuals

Gender	Man Woman
Age	Recodified in quinquennial or decennial group. The Partnership has tried to restrict the presentation of the indicator to individuals between 16 and 74 years, but the used age depends on the interests and necessities of each country.
Education level	No grade Primary school Secondary school University
Category of occupation and branch of activity	Employer, Independent, wage-earning employee, no wage-earning familiar worker

2.3. Current state of the information in the region

The countries of the region have actively participated in the process of obtaining relevant statistics to make a benchmarking of the state and advance of the access and use of ICT in households. Between 2005 and 2006 there is a small group of countries who have incorporated a module of ICT use in their household's surveys and an even smaller one, in their companies surveys. For some years now, most of the countries have been counting with information of possession of ICT goods in their household's surveys and censuses, as part of the home equipment question. These goods are mainly radio, television, fix telephone and more recently, from 2000, the ownership of a computer, mobile telephone and access to Internet. In table 4 a listing of the countries that count with this information and the dates from it is available appears.

Table 4. Existence of information on core basics indicators of access

Country / In/aicator	Year(s)	Radio	TV	Telephone line	Mobile phone	Computer	Internet
Barbados	2003	n/a	x	n/a	n/a	x	x
Bolivia	2004	x	x	x	n/a	x	n/a
Brazil (IBGE)	2001	x	x	x	x	x	x
	2002	x	x	x	x	x	x
	2003	x	x	x	x	x	x

	2004	x	x	x	x	x	x
	2005	x	x	x	x	x	x
Brazil (CGIB)	2005	x	x	x	x	x	x
	2006	x	x	x	x	x	x
Chile	2000	n/a	n/a	x	x	x	x
	2003	n/a	n/a	x	x	x	x
	2006 a/	n/a	n/a	x	x	x	x
Colombia	2004	x	x	x	n/a	x	x
Costa Rica	2005	x	x	x	x	x	x
El Salvador	2003	x	x	x	x	x	x
	2004	x	x	x	x	x	x
	2005	x	x	x	x	x	x
	2006	x	x	x	x	x	x
Honduras	2003	x	x	x	x	x	n/a
Mexico	2001	x	x	x	n/a	x	x
	2002	x	x	x	n/a	x	x
	2004	x	x	x	x	x	x
	2005	x	x	x	x	x	x
	2006	x	x	x	x	x	x
Nicaragua	2001	x	x	x	x	x	n/a
	2005	x	x	x	x	x	x
Paraguay	2003	n/a	x	x	x	x	x
	2004	n/a	x	x	x	x	x
	2005	n/a	x	x	x	x	x
Peru	2004	x	x	x	x	x	x
	2005	x	x	x	x	n/a	x
	2006	x	x	x	x	n/a	x
Dominican Republic	2004	x	x	x	x	x	n/a
	2005	x	x	x	x	x	x
Saint Lucia	2005	x	x	x	x	x	x
Trinidad & Tobago	2003	n/a	n/a	n/a	n/a	x	x
Uruguay	2003	n/a	x	x	n/a	x	x
	2004	n/a	x	x	n/a	x	x
	2005	n/a	x	x	n/a	x	x
	2006	n/a	x	x	x	x	x
Venezuela, B.R.	2003	x	x	n/a	x	x	x
	2004	x	x	n/a	x	x	x
	2005	x	x	dwellin g	x	x	x

Note: Argentina, Ecuador, Panama, Guatemala do not have equipment data TIC. Guatemala could include them in 2006/2007. Panama included them for the first time in its survey of 2006.

On the other hand, Table 5 presents a listing of the countries that are including total or partially some of the questions about ICT use suggested by the Partnership. The countries that had included a module with the statistics proposed by the Partnership on Measuring ICT for development – or at least basic core indicators- are Brazil, Chile, Costa Rica, El Salvador, Mexico, Dominican Republic, Uruguay. In the case of Trinidad and Tabago and Barbados there were exercises in year 2003 carried out for measuring

the use of ICT in households and business, wich covered some of the core basic indicators proposed, or at least some of the categories of answer including in some of them. Honduras and Saint Lucia have incorporated one and two use indicators respectively.

Some countries have included ICT variables in his more recent surveys of 2006 ends, among them Cuba and Panama but still with no results.

This module has been included in some cases like a section or additional module or in others like a supplement. The permanence of this module will depend on the policy of the INE on the importance of benchmarking the use of the ICT, or the budget available and interest of other financial institutions in its measurement.

Table 5. Countries having indicators at October 2006

Country	Basic ind.	Extented Ind.
Brazil	X	X
Chile	X	X
Paraguay	X	n/a
Uruguay	X	partial (H11 is missing)
Costa Rica	X	X
El Salvador	X	X
Honduras	partial (1)	n/a
Mexico	X	X
Dominican Rep.	X	X
Barbados	x	partial (H13 is missing)
Saint Lucia	partial (2)	n/a
Trinidad & Tobago	partial	partial (only HH12)

2.4. Household surveys with ICT information

The countries of the region count on different types of household surveys that allow to collect information of demographic, social (dwelling, education and health characteristics), economic (economically active population), cultural characteristics, etc, usually denominated **Household Surveys of Multiple Purposes**. This type of surveys allows the inclusion of new questions and thematic modules. Several countries of the region have incorporated modules or sections with ICT questions in this type of survey. Other countries have chosen to include ICT questions on **Life Conditions Surveys**, which also count on occasional modules for their country's interest issues. These types of survey have the purpose of producing basic information to study the socioeconomic development of countries.

Other countries also make **Expenses and income surveys** and **Work and labor force surveys**. Many of those include within objects of expenses, possession and access to ICT goods. Some countries of the region, although in very few occasions, have made **Specific ICT surveys**. These countries are Trinidad & Tobago (2003), Barbados (2003), Mexico (2002, 2004, 2005 and 2006) and Brazil (2005 and 2006). Particularly Brazil and

Mexico have completely incorporated the questions recommended by the Partnership in addition to an extensive set of ICT questions that follow the guidelines of OECD and Eurostat.

2.4.1. Surveys Identification

Table 6. Surveys with ICT questions on access and use

Country	Survey	Type of Survey	Way of including ICT questions	Accomplishment year
Brazil (IBGE)	Supplementary survey on INTERNET access of the National Survey for dwelling sample (PNAD)	EHPM	ICT Section	2005
Brazil (CGIB)	Survey on Information and Communication Technologies in Brazil	ICT Survey	ICT Survey	2005, 2006
Costa Rica	Multiple Purpose Household Survey (EHPM)	EHPM	ICT Module (2005) Questions on existing sections (2006)	2005 (2006 partially)
El Salvador	Multiple Purpose Household Survey (EHPM)	EHPM	ICT Section	2005, 2006
Mexico	Survey on Information and Communication Technologies in households (ENDUTIH)	ICT Survey	ICT Survey has a chaired module	2001, 2002, 2004, 2005, 2006
Paraguay	Permanent Household Survey	Life Conditions Survey	Other sections no specific about ICT	2005
Dominican Republic	Multiple Purpose Household National Survey (ENHOGAR)	EHPM	ICT Section	2005
Chile	National Socioeconomic Characterization Survey (CASEN)	Life Conditions Survey	ICT Section	2000, 2003 2006

1. In Brazil, the Brazilian Institute of Geography and Statistics - IBGE added an additional ICT module to the Annual households survey (PNAD) of 2005, covering all core indicators, except HH6, individuals that used a computer. The purpose of the PNAD is the production of basic information to study the socioeconomic development of the country. As a complement, the Brazilian Internet Steering Committee - CGIB, has covered all core indicators, basic and extended, in a specific survey on Internet use in households of Brazil in 2005, which a second version made in 2006.

2. Costa Rica has incorporated the ICT thematic in a special module of its Multiple Purpose Household Survey (EHPM) of 2005, covering all core indicators, basic and extended, excepting HH6. In 2006 it only included some questions in existing sections and did not include indicators HH6, HH9, HH10 and HH13.

3, El Salvador included a section with variables related to Information and Communication Technologies (ICT) since 2005 in the Multiple Purpose Household Survey (EHPM). In 2006, with the support of the Ministry of Tourism, it included indicator HH10. In none of the two surveys are included indicators HH11 or HH12.

4. In Mexico the basic source of information on access and use of ICT in households and individuals comes from the results that rise from a survey on households, the Survey on Availability and Use of Information Technologies in Households (ENDUTIH). This survey includes all core indicators, basic and extended, except HH11, and it has been applied in 2001, 2002, 2004, 2005 and 2006 like an integrated module along with other diverse surveys of households. The last one, in 2006, compiled along with the National Survey of Occupation and Labor (ENOE).

5. Paraguay included some questions in the already existing sections on household characteristics and population in the Permanent Survey of Households (EPH). It included all the basic core indicators, except HH6 and it did not include any of the extended ones.

2.4.2. Sampling methodology and sample frame of each survey

1. Most of the countries make multistage designs, with unavoidable inclusion of some layers (regions or municipalities) relevant to them. The population represented in the sample usually corresponds to dwellings and households. All surveys has a national coverage, and only in some cases they are representative also of great regions or metropolitan areas. The usually tried level of confidence is 95% and the errors samples are between 5 and 9%. In some cases the surveys are compiled during some specific months of the year, whereas in others it is compiled permanently throughout the year.

2. In Brazil, the sample that makes the IBGE corresponds to households, whereas the investigation unit is the resident in households, in addition of the household, the sample has national cover and is representative at regional, federal and some metropolitan area levels. The 2005 survey was made from October to December. In the case of the CGIB, the sample represents individuals of 10 years or more and was stratified based in 15 regions of Brazil, the quotas of each layer are based on the Population Census of IBGE 2000 and they are chosen according to censales areas. In addition, in order to have sufficient interviews in each layer to have reliable results, a over-quota of Internet users for layers with low Internet penetration in households, according to PNAD 2003 data, was chosen. This survey was made during the month of September of 2005.

3. In El Salvador, the population represented in the sample corresponds to private dwelling, to households and people who live there, and the sample has national cover. The frame sample is based on cartographic material from the last Population and Household Census (1992), updated in 1995 and again in the last years, to have a total frame of 1.442.660 households. The survey is made permanently throughout year.

4. In Costa Rica, the population represented in the sample corresponds to households, and it has national cover. The sample in 2005 includes 13500 households, of which there were 12000 effective answers. In 2006 the sample covers 14000 households. The survey is made during the month of July.

5. In Mexico, the population represented in the sample corresponds to households, it has national cover. In 2005, the survey was made in the month of June and in 2006, in the month of April.

6. In Paraguay, the last unit of sampling is dwelling and it has cover of households at national level. The survey was made in the months of October, November and December.

Table 7. Characteristics of the Sample designs

Name	Sample Design	Sample Cover	Sample size	Level of confidence and sample error
Brazil PNAD - IBGE- 2005	Three stages design, stratified, with proportional probability to the size and replacements in the two first stages. In the last stage, the household unit was selected with the same probability.	National, with good precision estimations for the 5 Great Regions of the country, 27 Federal Units and 9 Metropolitan Regions.	142 471 households units and 408 148 persons.	
Brazil CGIB – ICT Survey - 2005, 2006	Sampling by quotas, stratified with base in 15 regions of Brazil.	Metropolitan areas of Sao Paulo, Rio de Janeiro, Belo Horizonte, Salvador, Recife, Fortaleza, Belém Curitiba, Porto Alegre, District Federal Other areas of Southeastern, Northeast, North, South and Center-West.	8 540 households. The sample was chosen, so that it represents individuals of 10 years or more.	Confidence: 95% Error: 1.5% nationally, 5% regionally
Costa Rica EHPM - 2005, 2006	Three stages design, stratified and by conglomerates.	National	14 000 households	nd
El Salvador EHPM - 2005, 2006	Two stages design, stratified and by conglomerates, with proportional probability to size. Systematic sampling at second stage.	National, with valid estimations at department level and of the principal 50 municipalities auto represented (forced inclusion).	16 800 households Sample frame: 1 442 660 households	Confidence: 95%
Mexico ENDUTIH-2006	Two stages design stratified and by conglomerates, where the last selection unit is dwelling and the observation unit are households.	National	7 000 households distributed in 32 Federal Entities	Confidence: 90% Error: 8.6%

Paraguay **Permanent Household survey 2005**	Two stages design, stratified at first step and by conglomerates with proportional probability to size.	National, with layers divided like this: Asunción and departments of San Pedro, Caaguazú, Itapúa, Alto Paraná, Central, and Urban and Rural Resto.	5 000 households	Confidence: 95%

2.4.3. Interview methodology

1. In every cases, an in person interview is made (visit to households) to obtain the data, applying a questionnaire in paper. The profile of the person interviewed varies as per the country and usually it is not chosen in a random form but as per particular guidelines given to the interviewer. In some cases, should be a person of 10 years or more, in others a person of 15 or more, or 18 or more. In some countries it is considered to repeat visits (up to three) to assure the information pick up.

2. In the case of IBGE Brazil, the interviewer is trained to identify the most qualified people to answer the questionnaire, of the basic survey and also the ICT questions. In the case of CGIB, the interviewer has a pre-established list of profiles to interview in each census area, as per the characteristic of that area and considering always people ten years and older. If there isn't a person with established profile in that address, the interviewer should skip three houses and choose the following until he/she found a proper profile.

3. In the case of Costa Rica, the interviews are made in each one of the households that resides in the selected dwelling. The people who inform traditionally have been a person that frequently resides in the household and has at least 15 years old or more.

4. In El Salvador, the visits to the selected households are made as units of investigation. The questions related to ICT are made to people of 10 years old and more age that live in the household.

5. In Mexico, after the dwelling is selected, the interviewer moves physically toward it. At first, identify how many households exist in the dwelling selected to interview them all. Next, it comes to choose the proper informer to the mother survey and to apply the corresponding questionnaire. The proper person that inform from the NDUTIH is an adult older than 18 years old that knows the information. The interviewer will ask the informer selected about all ICT sections for each one of the members of the household with an age of 6 years or more. The interviewer can return up to three times to the household with the purpose to assure the questionnaire pick up. To make the interviews the people selected have a wide experience in households survey pick up. The questionnaires are reviewed by field supervisors and validated by the regional and state working teams.

6. For Paraguay, visits to dwellings are made, the households are identified and are interviewed all the households in the dwelling. The person that inform should be preferably the chief of the household. The interviewer can return up to three times to the households with the purpose of assuring the questionnaire pick up. To make the interviews the people selected are with a wide experience in households surveys pick up. The questionnaires are review by field supervisors and validated by DGEEC.

2.4.4. People that inform and target population for each ICT questions

1. The person that responds to the questions of the surveys vary as per the country, but in generally, is an adult that knows the information of the household, in some cases is the chief of the household but it is not a requirement. In the case of the ICT questions, usually the person that respond is the same that answer the base household survey, sometimes it can be supported by another person that knows more the theme as Mexico proposed, or allow the present people to answer the question about themselves if they are available at the moment of the interview, such as established by Costa Rica.

2. In general, ICT questions are responded by the person that inform for all member of the household that fulfill with the characteristic of having a certain age. Only in the case of Brazil (CIGB) and Dominican Republic the information of only one person is picked up, and that is understood as representative of the household.

3. The age of the population target for the ICT uses, vary as per the interests of each country. Some will consider useful having have this information from the elementary school age, that is, 5 to 6 years (Costa Rica and Mexico cases). Other have been interested in the population that have 10 or 12 years or more (Brazil (IBGE), El Salvador and Paraguay cases) and finally the CGIB, following the Eurostat guidelines have been gathered the information for people of 16 years and more. The recommendation of the Partnership on measuring ICT has been precisely this last one, that is being used by Eurostat (and the OCDE). In all cases the indicators can be calculated to obtain the information from the people 16 years old or more and therefore have harmonized and comparatives indicators.

Table 8. Target population and respondents

Country	Target population for ICT usage	Respondent	Members of the covered household
Brazil (IBGE)	>= 10 years	Only one respondent (the most qualified according to the criteria of the interviewer , previous orientation received from its training)	All members of the household of 10 years old or more
Brazil (CGIB)	>=10	The person of the household that fulfill with the characteristics of the pre-selected profile	The respondent
Costa Rica	>=5 years except by having and using a mobile phone that is apply to people of 10 years and more.	Person member of the household older than 15 years old, that knows the characteristic of the rest of the household. For ICT questions could change but the	All members of the households with 5 years old or more

		change it is not registered. If a self respondent person is found at the moment of the interview, this is chosen to give its own information.	
El Salvador	>=10 years	Only one respondent the chief of the household	All members of the household of 10 years old or more
Mexico	>=6 years	Adult older than 18 years that knows the information. If there s more than an adult in the household, will be selected the one whose birthday is closer to the pick up date. If the selected person to inform does not know about ICT, can be supported by someone who knows, inclusive if it is under the age of 18.	All members of the household of 6 years old or more
Paraguay	>=10 years	Preferably the chief of the household	All members of the household of 10 years old or more
Dominican Republic	>=10 years	A person in a random form is chosen among who has 12 years or more	The respondent

2.4.5 Socio-demographic variables included in the surveys

1. As mentioned in the section 2.2 it is necessary to count with a basic set of variables of harmonized classification to establish the social and economic breaches that works against the access and the use of ICT in the countries of the region. The countries included in this compendium count with in general with the level variables of family incomes, age, sex, level of education and in some cases, the condition of economic activity, like the other variables refer to the physical conditions of the dwelling. Since each country has its particularities in the education system, the form of measuring income and working conditions, it is necessary to make an additional exercise of harmonization for such variables, in order to allow the comparison among the countries of the region.

2. In Brazil, the supplement of ICT of 2005, allow to make crossings of variables with any of the themes investigated in the basic body of the PNAD, such as, education, work, incomes, population and household characteristics. Regarding the CGIB survey, the

variables used are: geographic areas, family income level, socio-economic class, education level, age and gender.

3. In the tabulations made by the INEC, Costa Rica, variables of sex, age, planning region and geographic zone, deciles and quintiles of income per capita, education level (re-codified) are used.

4. The information of the EDUTIH survey of Mexico could be classified through the variables of sex, age (coverage on people over six or more years old at the moment of the interview) schooling level and condition of economic activity.

5. The same as Mexico, the information on ICT could be classified through the variables of sex, age, schooling level and economic activity condition (population economically active and population not economically active).

2.4.6. Frequency of ICT measuring

1. In most cases, the basic core indicators of access are present in a regular form in the household surveys. For being this permanent and of annual frequency, it is guaranteed having these indicators annually. Regarding the core basic indicators of usage and core extended, will be kept as long as resources are available on the other side institutions. It is anticipated that will be biennial in most of cases and every three years in others. It is convenient to emphasize the case of Mexico, who are anticipating an extensive module on access and usage of ICT (ENDUTIH) from the year 2001.

2. In the IBGE, the investigation on basic ICT infrastructure (basic core indicators of access) is held annually in the PNAD, however, the specific supplement on ICT does not have a defined regularity but depend on the resources availability and the interest of other actors. In the case of the specific survey on ICT of CGIB, at the moment the frequency has been annual.

3. The questionnaire of the EHPM of Costa Rica has incorporated almost permanently the questions about having home telephone, computer, sound equipment, and color television. From the year 2000 the basic core question of access have been incorporated in an annual way and only for the case of a few variables, biannually. Some questions on the use of Internet have started being annually, from the last two latest surveys.

4. From the year 2001, the INEGI of Mexico has been worrying for picking up in annual way the questionnaire of the ENDUTIH. The only year in which were not possible to pick up the Survey was in 2003, due to budget reasons. Therefore, it is had the series of information that start with the Monaco-2001 Survey and continue with Endutih-2002, Endutih-2004, Endutih-2005, Endutih-2006. It is the intention of the institute to keep annually the periodicity of the Endutih pick up.

5. The permanent households survey of Paraguay is made annually from 1983, Basic core questions of access have then guarantee of annual presence, however, there is no intention about using questions on usage.

Table 9. ICT indicators measurement frequency and reference periods for questions about use

Country	Measurement frequency of basic core indicators of access	Frequency on the use of ICT	Reference period on usage questions (core indicators)
Brazil (IBGE)	Annual	Without defined periodicity.	3 months (if did not use Internet in the last 3 month the interview is not make) The personal use of the cellular phone refers at the moment of the survey.
Brazil (CGIB)	Annual	Annual	Last 3 months
Costa Rica	Annual	Annual (partial)	Last 12 months
El Salvador	Annual	Annual (partial)	Last 3 months
Mexico	Annual	Annual	Present moment. The only question on ICT with reference period is the frequency of usage of Internet, that is referred to the last 12 months (before 2005, it was referred to 6 months)
Paraguay	Annual	Without defined periodicity.	Last 3 month
Dominican Republic			Last 12 months

2.4.7 Reminder period used in the questions

A theme that has been discussed in the establishment of the core indicators of usage has been the period of reference for the questions on the use of Internet. During the first discussion on the theme in the region, it was agreed to use as reference the use of Internet in the last three months, however, during the global discussion that incorporated all the developing regions, it was agreed to refer the use in the last 12 months, to value all type of users, frequent and non-frequent.

Some countries have maintained the initial suggestion from the last 3 months and other has been adapted to global suggestions, asking for the last 12 months. However other countries, as Mexico, have been referred the questions of usage, at the present moment of the survey. As per information of Eurostat, the usage differences between 3 and 12 months are minimum, which will not prevent the comparison among these measures; however, it is remarkable for the harmonization of the statistic, use a common period of reference at the present moment.

The argument used by the Partnership to recommend the use of 12 months period is that the questions that do not depend so much on the exactitude of the reminiscences,

do not imply significant remembering risks, and on the other hand, the use of a different period (for example, three months) can introduce seasonal bias. Finally, a period of 12 months allows reflecting better certain less frequent activities, as for example the information search on health issues or on line purchases.

2.4.8 Cost of the survey or module.

The cost of applying an ICT module or the marginal cost of a section with specific questions on ICT varies as per the size of the module. As appreciate it in the calculations of the table 10, the countries that had incorporated bigger modules or with questions on the specific use of Internet are the ones that has bigger cost, as it is the case of Mexico and Brazil. In the case of countries where they have been applied strictly to the module suggested by the Partnership, the cost is close to US$1.50 per interview.

Table 10. Cost of ICT questions

Name	Cost per interview on ICT questions	Cost ICT module
Brazil PNAD-IBGE-2005	R$4.95 (US$2.31)	R$ 2 018 000 (US$ 943 000)
Brazil CGIB – ICT research 2005	R$35.13 (US$16.42)	R$ 300 000 (US$ 140 000)
Costa Rica EHPM - 2005	¢ 636 (US$ 1.33)	(¢8 900 000) (US$ 18 563)
El Salvador EHPM – 2005, 2006	US$ 1.48	US$ 25 000
Mexico ENDUTIH - 2006	MXN$ 81.50 (US$ 7.50)	MXN$ 570 000 (US$ 52 500)
Paraguay Permanent Household Survey - 2005	The marginal cost it is not estimated, because it has been incorporated few extra questions on the ICT usage, the basic questions about possessing, belong to the usual household survey	

2.4.9. Financing methods for the survey

1. The financing methods are different for each country. In some cases are done with regular budget, in other thanks to the support of other institutions through agreements or alliances made or by direct interest of other institutions that pay to make it done. For the studied cases in this compendium, only one, INE Mexico, make the survey with regular budget, two through agreements with other institutions, Brazil and Costa Rica and one thanks to the permanent financing of other institutions for the permanent household survey.

2. In 2005 the IBGE signed an agreement with the Management Committee of Internet of Brazil – CGIB, to make the specific supplement on ICT. In the meantime, the CGIB

with its regular budget made the specific survey on ICT to have a bigger quantity of information in a short term.

3. In the case of Costa Rica, the budget for the household survey is part of the regular budget of INEC, however, the inclusion of the ICT module was made through an agreement with the Electricity Institute of Costa Rica.

4. In the case of Salvador, it is remarkable that since 2005, the EHPM has been financed exclusively with the funds from the Ministry of Economy guaranteeing that the investment in social statistic that for years financed the Inter-American Development Bank (BID) through its program MECOVI and the International Agency of Development from the Government of the United States of America was preserved and maintained.

5. In the case of Mexico, the pick up of the ENDUTIH is financed with own resources by the INEGI and is already part of the regular households surveys that INEGI pick up every year.

2.4.10 Methodologies of calculations for required indicators

1. The calculation of the basic core indicators suggested is made in a simple manner, because it corresponds to the household portion with access to the ICT goods. This indicators (portions) are calculated dividing the number of household that own the corresponding good (radio, television, main line, mobile telephone, computer) by the number of total households included in the study (indicators HH1 to HH5). The same way is calculated the indicator of Internet access in the household (HH7).

2. Even though differences between the quantity of dwellings and the quantity of households don't differ too much, it would be recommended that all countries present its indicator taking in consideration the households. Some countries make this questions to all types of households (including prisons, elderly nursing homes, or special lodgings, like hotels), whereas others are restricted to private households or particular dwellings. The recommendations to represent the regional indicators are to restrict to particulars or privates households.

3. Regarding indicators which are referred to individuals, each country has a population target chosen as per the interests and the orientation given to their policies (see section 2.4.4.). The recommendation made by the Partnership in the document of core indicators (United Nations, 2005) is to restrict this indicator to a group of population with age between 16 and 74 years old, for the purpose of comparing them among countries.

4. A recommendation for harmonization effects, could be to generate two indicators, one referred to the target population of the study and other using the international recommendation to be able to compare with the rest of the countries, for example, dividing the number of individuals of 16 years or older that used Internet by the number of total individuals of 16 years older included in the study.

5. The question that established more than one category of answers presents some difficulties to compare them. Some countries restricted the answer to the selection of

one category, others to two and even three and others allow multiple choice[9]. This lead that different countries present the corresponding indicator in different possible ways: as independent percentage per each category over the total individuals included in the study: as independent percentage per each category over the total Internet users; as percentage of each category with respect to the total summed by all the categories, this last applied just when there is only one option in the possible answer or when the calculation are restricted to take only the first option marked in the questionnaire (if is specified in the questionnaire). A possible solution is that each country present various indicators recommended over the same question.

6. With respect to the previous point, most of the countries present its indicators relative to the Internet use based on total Internet users, nevertheless, some also display the indicator on the base of total population included in the study. In this case it is recommended preferably to present the first one, leaving place to whom wish and can do it, to expose the both ways of represent the ICT use in all the contexts, the dimensions of it, over all the population study object.

7. In general, the calculation forms recommended by the Partnership are described, with additional explanations and proposals in some cases, as per the calculations done for some countries.

HH6 individual portions that used computers

The proportion of individual using computers is calculated dividing the number of total individual that used computers in any place (in the last 12 months) by the total number of individuals included in the study.

HH8 individual portions that use Internet

The proportion of individual using Internet is calculated dividing the number of total individual that used Internet (in any place) in the last 12 months by the total number of individual included in the study.

HH9 Place of Internet usage in the last 12 month

For the case of more than one possible answer:

1. Proportion of Internet users in each place: for example, the portion of users using Internet in the household, at work, etc. (Allow to see the calculation about the Internet users, independently for each category). To include clarification note: two possible answers, three possible answers, multiples answers possible.)

2. Proportion of the individuals included in the study using Internet in each place (Allow to see the calculation over the total individuals, users and non users, but independently form for each category).

For the case of only one possible answer or restricted post- collection of only one answer:

[9] This restriction has sense for those countries that wish to diminish the costs of data processing.

3. Proportion of Internet users using Internet more frequent en each place, considering only one possible answer (include clarification note: “the question allow only one answer” or “it is being chosen the first of two/three/multiple possible answers). In this case the sum of the percentage will be 100.

4. Proportion of the individuals included in the study using Internet more frequent in each possible place, considering only one possible answer (include clarification note: “the question allow only one answer” or “it is being chosen the first of two/three/multiple possible answers). Here it is recommended to add the percentage of the ones not using Internet, this way the sum of the percentage will be 100.

HH10 Activities made on Internet by individuals in the last 12 months

The activities that can be made on Internet are multiples, nevertheless some countries restrict the question to the two or three more frequent activities. Another case is for example the one of IBGE of Brazil, who asks an independent question for each category. Since it is not possible to have the same level of information in all the countries, it is always recommended in the presentation of the indicators to specify the form in which the question was made and distinguish between "multiple possible answers", "two more frequent", "three more frequent". In agreement with these particularities the following indicators are recommended:

1. Proportion of *Internet* users who make each type of activity from any place, for example, the proportion of users who use Internet for communication, interaction with public authorities, etc. (It allows to observe the calculation only on Internet users, independently of each category). To include explanatory note: "two possible answers, three possible answers, multiple possible answers).

2. Proportion of *the individuals* included in the study that make each type of activity from any place. (It allows to observe the calculation over the total population, users or not, but in a independent way for each category).

3. Proportion of *Internet users* who make each type of activity on Internet more frequently, considering a unique answer possible (to include explanatory note: "the question allows a unique answer" or "it has been choose the first of two/three/multiple possible answers"). In this case the sum of the percentage will give 100. This indicator could not be obtained for example for the case of Brazil, and it would only have sense for those countries restricting their question to the most frequent activities.

Extended Core Indicators

HH11 Proportion of individuals using a mobile telephone

The *proportion of individuals with use of a mobile telephone* is calculated by dividing the total number of in-scope individuals using a mobile telephone by the total number of in-scope individuals.

HH12 Proportion of households with access to the Internet by type of access

This indicator presents particularities in its calculation given principally the difficulties to make the question in the surveys. In many cases the person who answer the survey does not know what type of connection he has, reason why the statistic offices are forced to formulate the question in a very simple way, as for example in the case of Uruguay where it is asked just for two options: i) dial-up Internet connection and ii) Internet connection by contract or monthly payment. It thus becomes difficult to make a classification that allows establishing the type of bandwidth used in households. In other cases (e.g. Mexico) the options extend a little more, asking if a dedicated telephone line exists or if the cable service is used to get the Internet connection. Only Brazil formulated the question about if the household has broadband access, in addition of dial-up access, but without indicate the type of broadband specifically. Additionally, each country has different access service conditions, in some countries, what in theory would be broadband (256Kbits/seg) is still far from reaching. It is anticipated then that the socio-demographic characterization of households having broadband will not be possible at least until users get familiar with new tools. It can be, for some countries, that the Telecommunications Regulation Agencies could have data of broadband residential subscribers thus to determine the proportion, but without doing a characterization.

In agreement with the Partnership, the indicator can be calculated as the proportion of households with broadband Internet access and narrow band (respectively).

Another possible presentation would be to display it only as the proportion of households with Internet access. It is recommended to present both.

HH13 Frequency of individual Internet access in the last 12 months (from any location)

The proportion of in-scope individuals using Internet with each one of the frequencies considered (at least once a day; at least once a week, but not every day; at least once a month, but not every week; or less than once a month).

Another recommendable presentation would be the proportion of Internet users who use Internet with each one of the frequencies listed below.

2.4.11. Publication and diffusion of the results

1. En some cases the INE put the information available for public in its web sites, usually under table format. In other cases, more reduced, make printed publications that are usually also available in their web sites, sometimes for free and others with cost. In most cases the information produced is sent the institutions interested in each particular theme or the institution that financed the survey for its respective use or diffusion. In the specific case of the ICT module, Brazil and Mexico published the results; however Costa Rica and Salvador didn't do it yet. In the case of Paraguay, they publish the general results of the survey, which cover the basic core indicators of access but not of use.

2. The results of the survey of IBGE are published under a table format in printed version and electronically available in CD-ROM and Internet (www.ibge.gov.br). Additional, a CD-Room with micro-data is available in the virtual store of IBGE and the service of dissemination of information located in the state units. Regarding the CGIB survey, all the data is published in the web, in table format and free access

(www.nic.br/indicadores). The data were also organized in an English and Portuguese publication (also available in the web) that includes articles and data analysis. It has been distributed to the government, universities, institutes of research and development, associations and organizations involved with the development of Internet in Brazil and abroad. The publication is annual. All indicators are presented for each one of the 15 metropolitan areas, levels of family incomes, social class, level of education, age and gender.

3. With respect to the data on ICT, the INEC Costa Rica made a series of table of the results is available for the users, the INEC does not make the diffusion of the results immediately through the press, because that duty is made by the institutions that request the information. The tables that are usually generated are updated every year and also are adding new information as per the requisition received.

4. In the case of El Salvador the information of the section ICT has not been diffused. However, public and private institutions have been requesting information about households having and using computers, telephone and Internet. The level of desegregation of the information that can be published is: total, urban, rural, metropolitan area of San Salvador and the local governments self-represented (of forced inclusion).

5. Mexico diffuses the results of the Endutih in three complementary manners. At first, the institute diffuses a press note with the main methodological characteristic of the survey and position in the public opinion the main results obtained. At the same time, is available in the web site of the institute, a publication in PDF format where it is presented and analyzed the main results, a brief methodological description is made and is available for public a terms glossary, as well as the collection instruments used.[10] Finally, is published in Web site, in the section of Science and Technology, a extent set of statistical tables that exploits in great detail the ample information that is possible to generate through the Survey.

Regarding the publication in PDF format, two exist at the moment, the first one titled Availability **and Use of Technologies of Information in households in Mexico, Presentation of the Results of 2001, 2002 and 2004 Surveys,** and the second one takes by title **Statistics on Availability and Use of Information and Communications Technology in Households, 2005.** The desegregation level of the publication just contemplates the national level, with the possible breakdowns depending on the different classifications used and on the options of answer including in the collecting instrument.

6. Paraguay spreads the results of the Household Survey in a publication called "Main Results". In parallel it is available on Internet, in DGEEC´s web site, a publication in PDF format. This publication contains the basic access core indicators suggested, but it does not the uses ones including already in the survey.The information is showed at a

[10] The address from where materials can be access are:
http://www.INEGI.gob.mx/prod_serv/contenidos/espanol/bvINEGI/productos/encuestas/especiales/endutih2004.pdf
http://www.INEGI.gob.mx/prod_serv/contenidos/espanol/bvINEGI/productos/encuestas/especiales/endutih/endutih2005.pdf
http://www.dgeec.gov.py

household level and for 2005 is also presented at a population level. In relation to breakdown levels, the information dissemination is representative in a national level, as well as by large departments of the country.

Bibliography

Partnership on Measuring ICT for Development (2005a). *Measuring ICT: the global status of ICT Indicators*. United Nations ICT Task Force, New York. http://www.cepal.org/socinfo/noticias/documentosdetrabajo/1/23121/A5-Partnership%20global%20stocktaking.pdf

Partnership on Measuring ICT for Development (2005b). *Core ICT indicators.* United Nations. http://www.cepal.org/socinfo/noticias/documentosdetrabajo/6/23116/Partnership%20core%20%20indicators%20English.pdf

ECLAC (2006). *Patrones de penetración de los bienes y servicios TIC en los hogares de América Latina y el Caribe. Análisis basados en datos Censos Nacionales de Población y Vivienda de la ronda del 2000*. Santiago de Chile.

Katz, Jorge y Hilbert, Martin (2003). *Los caminos hacia una sociedad de la información en América Latina y el Caribe*. Naciones Unidas, Santiago de Chile,

Annex I. Core list of ICT indicators

Core indicators on ICT infrastructure and access

Basic core	
A1	Fixed telephone lines per 100 inhabitants
A2	Mobile cellular subscribers per 100 inhabitants
A3	Computers per 100 inhabitants
A4	Internet subscribers per 100 inhabitants
A5	Broadband Internet subscribers per 100 inhabitants
A6	International Internet bandwidth per inhabitant
A7	Percentage of population covered by mobile cellular telephony
A8	Internet access tariffs (20 hours per month), in US$, and as a percentage of per capita income
A9	Mobile cellular tariffs (100 minutes of use per month), in US$, and as a percentage of per capita income
A10	Percentage of localities with public Internet access centres (PIACs) by number of inhabitants (rural/urban)
Extended core	
A11	Radio sets per 100 inhabitants
A12	Television sets per 100 inhabitants

Core indicators on access to, and use of, ICT by households and individuals

Basic core	
HH1	Proportion of households with a radio
HH2	Proportion of households with a TV
HH3	Proportion of households with a fixed line telephone
HH4	Proportion of households with a mobile cellular telephone
HH5	Proportion of households with a computer
HH6	Proportion of individuals who used a computer (from any location) in the last 12 months
HH7	Proportion of households with Internet access at home
HH8	Proportion of individuals who used the Internet (from any location) in the last 12 months
HH9	Location of individual use of the Internet in the last 12 months 1. At home 2. At work 3. Place of education 4. At another person's home 5. Community Internet access facility (specific denomination depends on national practices)[11] 6. Commercial Internet access facility (specific denomination depends on national practices)[12] 7. Others
HH10	Internet activities undertaken by individuals in the last 12 months: 8. Getting information o About goods or services o Related to health or health services o From government organisations/public authorities via websites or e-mail o Other information or general Web browsing 9. Communicating 10. Purchasing or ordering goods or services 11. Internet banking[13] 12. Formal education or training activities[14] 13. Dealing with government organisations/public authorities 14. Leisure activities o Playing/downloading video or computer games o Downloading movies, music or software

[11]. In the list adopted by the February meeting, this category was entitled *Free Public Internet Access Centre*. It is proposed that it be changed to *Community Internet access facility* to reflect the fact that community access may be charged, albeit often at subsidised rates.

[12]. In the list adopted by the February meeting, this category was entitled *Charged Public Internet Access Centre*. It is proposed that it be changed to *Commercial Internet access facility* to reflect the fact that commercial access is not necessarily charged.

	○ Reading/downloading electronic books, newspapers or magazines ○ Other leisure activities
Extended core	
HH11	Proportion of individuals with use of a mobile telephone
HH12	Proportion of households with access to the Internet by type of access 15. Categories allow an aggregation to narrowband and broadband, where broadband excludes slower speed technologies, such as dial-up modem, ISDN and most 2G mobile phone access. Broadband will usually have an advertised download speed of at least 256 kbit/s.
HH13	Frequency of individual access to the Internet in the last 12 months (from any location) 16. at least once a day 17. at least once a week but not every day 18. at least once a month but not every week 19. less than once a month
Reference indicator	
HHR1[15]	Proportion of households with electricity

Core indicators on use of ICT by businesses

Basic core	
B1	Proportion of businesses using computers
B2	Proportion of employees using computers
B3	Proportion of businesses using the Internet
B4	Proportion of employees using the Internet
B5	Proportion of businesses with a Web presence
B6	Proportion of businesses with an intranet
B7	Proportion of businesses receiving orders over the Internet
B8	Proportion of businesses placing orders over the Internet
Extended core	
B9	Proportion of businesses using the Internet by type of access 20. Categories allow an aggregation to narrowband and broadband, where broadband excludes slower speed technologies, such as dial-up modem, ISDN and most 2G mobile phone access. Broadband will usually have an advertised download speed of at least 256 kbit/s.
B10	Proportion of businesses with a Local Area Network (LAN)
B11	Proportion of businesses with an extranet
B12	Proportion of businesses using the Internet by type of activity 21. Sending and receiving e-mail 22. Getting information ○ About goods or services ○ From government organisations/public authorities via websites or e-mail ○ Other information searches or research activities 23. Performing Internet banking or accessing other financial services 24. Dealing with government organisations/public authorities 25. Providing customer services 26. Delivering products online

Core indicators on the ICT sector and trade in ICT goods

ICT sector and trade basic core	
ICT1	Proportion of total business sector workforce involved in the ICT sector
ICT2	Value added in the ICT sector (as a percentage of total business sector value added)
ICT3	ICT goods imports as a percentage of total imports
ICT4	ICT goods exports as a percentage of total exports

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[13]. In the list adopted by the February meeting, this category was entitled *Internet banking or other financial services.* It is proposed that it be changed to *Internet banking* following changes made to the OECD and Eurostat model questionnaires.

[14]. In the list adopted by the February meeting, this category was entitled *For education and learning.* It is proposed that it be changed to *Formal education or training activities* as the previous category is very broad and potentially includes many Internet activities (for instance searching for information).

[15]. Since electricity is not specifically an ICT commodity, but an important prerequisite for using ICT, it is not included in the core list, but included as a reference indicator.