

Benchmarking the Plan of Action of the World Summit on the Information Society (WSIS) in Latin America and the Caribbean (version 3.0)

**OSILAC (Observatory for the Information Society in Latin
America and the Caribbean)**



March 2005

This document was prepared under the frame of OSILAC (Observatorio para la Sociedad de la Información en Latinoamérica y el Caribe), a project developed by the Division of Production, Productivity and Management of ECLAC, which counts with the financial assistance of the Institute of Connectivity in the Americas (ICA) and Panamericas of the International Development Research Centre (IDRC/CRDI) and @LIS, a programme of the European Commission. The document was produced by Martin Hilbert and Doris Olaya, with the active support of the following researchers and consultants: Pilar Castellà, Pablo García, Francisco Gutierrez, Julia Hagenberg, Felipe Izquierdo, Oliver Polletti, Stefan Sickel, Marcia Tavares, Alejandra Zúñiga.

The opinions expressed in this document, which has been produced without formal editing, are those of the authors and do not necessarily reflect the views of the Organizations involved. The views expressed herein cannot be taken to reflect the official opinion of the European Union.

United Nations Publication

LC/W.14

Copyright © United Nations, January 2005. All rights reserved
Printed in United Nations, Santiago of Chile

Applications for the right to reproduce this work are welcomed and should be sent to the Secretary of the Publications Board, United Nations Headquarters, New York, N.Y. 10017, U.S.A. Member States and their governmental institutions may reproduce this work without prior authorization, but are requested to mention the source and inform the United Nations of such reproduction.

Contents

Abstract	7
A. Introduction	8
B. Objectives, goals and targets	9
C. Action Lines	23
C1. The role of governments and all stakeholders in the promotion of icts for development.....	23
C2. Information and communication infrastructure: an essential foundation for the Information Society.....	30
C3. Access to information and knowledge.....	46
C4. Capacity building.....	55
C5. Building confidence and security in the use of ICTs.....	61
C6. Enabling environment.....	70
C7. ICT applications: benefits in all aspects of life.....	81
C8. Cultural diversity and identity, linguistic diversity and local content.....	102
C9. Media.....	106
C10. Ethical dimensions of the Information Society.....	108
C11. International and regional cooperation.....	109
D. Digital Solidarity Agenda	112
E. Follow-up and evaluation	121

Figures

Figure 1 Potential and attended population with access to digital community centers (DCC) in Mexico.....	9
Figure 2 Museums and nature parks with web presence.....	14
Figure 3 ICT infrastructure in Central American municipalities.....	16
Figure 4 ICT Access in Peruvian (N=77) and Chilean (N=106) Municipalities with computer access.....	17
Figure 5 Average of ICT infrastructure per region in Latin America and the	

Caribbean.....	20
Figure 6 ICT infrastructure in Latin America.....	22
Figure 7 Examples of ict related activities of international organizations (n=15), from the region.....	29
Figure 8 Telecommunications expenditures.....	30
Figure 9 Hardware and software expenditures.....	30
Figure 10 Inhabitants per public access centers in Venezuela (n= 796 in 2002), Ecuador (n= 792 in 2004), chile (n=809 in 2003).....	32
Figure 11 Affordability of broadband in Latin American countries	34
Figure 12 Computer users by age group.....	35
Figure 13 Internet users by age group.....	36
Figure 14 ICT access usage distribution.....	37
Figure 15 Illiteracy in the population aged 15 years and over.....	40
Figure 16 Reasons for not having a pc in the household.....	41
Figure 17 International peak-hour internet traffic flows to and from Latin America.....	46
Figure 18 Number of google hits in searches for the expression “software libre” by country.....	49
Figure 19 Estimated linux users of internet users in Latin America and the Caribbean countries.....	50
Figure 20 E-government objectives of chlean and peruvian municipalities with internet access (n _{chile} =106, n _{peru} = 77).....	52
Figure 21 Characteristics of municipality websites in Chile.....	53
Figure 22 E-government obstacles in chilean (n=106) and peruvian.....	53
Figure 23 Financing mechanisms for e-government projects in chilean (n=106) and peruvian (n=77) municipalities with computer access.....	54
Figure 24 Workers with computer training.....	56
Figure 25 Face-to-face ICT training and virtual ICT distance learning courses in Latin America national training and capacity centers (n=17 countries).....	57
Figure 26 Obtained doctoral degrees in brazil	58
Figure 27 Women participation in research activities.....	59
Figure 28 Volunteers’ field of action in latin american volunteering organizations (n = 1336 organizations).....	60
Figure 29 Latin American organizations in science, technology, and communications working with volunteers (n = 66 organizations.....	60
Figure 30 Barriers to internet use in SMES (small and medium sized enterprises) by country	61
Figure 31 SPAM per month received by a user, when spam is sent to multiple e-mail addresses.....	65
Figure 32 Digital attacks vs. estimated internet users per region.....	68
Figure 33 Main reasons for not having internet access in mexican households.....	75
Figure 34 Share of publications included in the list of the memory of the world register of unesco, by region.....	76
Figure 35 SMES with ICT equipment.....	77
Figure 36 SMES by connection type.....	77
Figure 37 SMES by internet usage.....	78
Figure 38 Main internet activities by enterprises with the chilean government.....	79
Figure 39 Computers operative systems used in the government sector in Colombia.....	80
Figure 40 Information included in the on-line political parties portals (n=24 leading political parties from 9 countries).....	82
Figure 41 Online activities of public authorities with internet connection in Colombia.....	83
Figure 42 Companies selling online.....	85

Figure 43 SMES doing online transactions.....	86
Figure 44 Internet users purchasing online.....	86
Figure 45 ICT coverage and usage in chilean enterprises.....	87
Figure 46 ICT coverage and usage in colombian enterprises.....	88
Figure 47 Contents of portals in Latin American health ministries (n=16 countries).	93
Figure 48 Share of employees corresponding to services sector, by regions.....	94
Figure 49 Full-time telecommunications staff by gender.....	95
Figure 50 National centers for the prevention of/ information on disasters (n=13 countries).....	96
Figure 51 National disaster information systems by kind of provided information (n=13 countries).....	96
Figure 52 Historical evolution of the total number of applicants and participants in distance learning for agricultural policy makers of fodepal/fao.....	98
Figure 53 Information systems for farmers and cattle breeders on the internet (n = 5 systems from 5 different countries).....	98
Figure 54 Universities with computers and internet conection, by conection type in Colombia.....	99
Figure 55 Breadth of international coauthorship ties in selected countries/economies.....	100
Figure 56 Percentage of internet users per gender.....	105
Figure 57 Average language coverage of multilingual translators (n=13 translators).....	106
Figure 58 Major donor countries of bilateral cooperation for communication projects in latin america by amount donated / number of projects.....	111
Figure 59 Major receptor countries of bilateral cooperation for communication projects in Latin America by: amount donated / number of projects.....	111
Figure 60 ICT expenditures in US\$ and as % of GDP.....	116
Figure 61 Development of ODA.....	117
Figure 62 Total ODA and ODA designated to Latin America and the Caribbean from selected donor countries.....	117
Figure 63 Debt services vs. education vs. ICT vs. telecommunications.....	118

Tables

Table 1 Educational establishments with ICT access in Colombia	10
Table 2 Use of computers in educational establishments in Colombia.....	10
Table 3 Advanced research networks.....	11
Table 4 Hospitals with information systems.....	15
Table 5 ICT focus in school curricula in selected countries.....	18
Table 6 Access to ict in primary and secondary educational establishments.....	19
Table 7 World population, internet users and web content per language.....	21
Table 8 National information society strategies in selected countries.....	24
Table 9 Examples of civil society and private sector initiatives in the region.....	26
Table 10 Characteristics of public access centers and internet cafes in peru.....	33
Table 11 Average rates and affordability of broadband in latin american countries.....	34
Table 12 Tiflolibros- digital library for visually disabled people in latin america..	39
Table 13 Haiti.....	42
Table 14 Interconnection regulations in regulatel countries.....	43
Table 15 Radio and tv channels on the internet.....	46
Table 16 Freedom of information legislation in latin american and caribbean countries.....	47
Table 17 Digital publications in eclac's caribbean digital library.....	55
Table 18 Companies from seven latin american countries that are implementing	

e-learning (n = 480 companies) for personnel training.....	56
Table 19 UNCITRAL model law on electronic signatures.....	62
Table 20 Legislation on cyber crime.....	63
Table 21 Protection of privacy legislation.....	64
Table 22 Global statistics about spam.....	65
Table 23 Legislation on electronic documents and transactions.....	66
Table 24 Legislation on electronic commerce.....	67
Table 25 Legislation on digital/electronic signature.....	69
Table 26 Telecommunication regulators of regulatel.....	71
Table 27 NIC (national information centers) in latin america and the caribbean.....	73
Table 28 Government e-procurement and public tenders.....	81
Table 29 Online-presence of the public sector.....	84
Table 30 Examples of educational portals in Latin merica.....	89
Table 31 Regional disaster information centers offering information in internet and/or with information systems.....	97
Table 32 Intraregional scientific collaboration in central and south america.....	101
Table 33 Indigenous population in selected Latin American countries.....	103
Table 34 MUlti-stakeholder portals for indigenous peoples at national level.....	103
Table 35 Large latin american media groups and selected subsidiaries per media sector.....	107
Table 36 Ownership distribution of top five daily newspapers and top five television stations in percent.....	108
Table 37 Examples of content control legislation in Peru.....	109
Table 38 Examples of public action for information society financing (development banks, specific funds and science and technology funds).....	112
Table 39 Universal access funds.....	119
Table 40 Recomend indicators for household surveys to monitor the information society development in latin america and the caribbean.....	122
Table 41 Recomend indicators for business surveys to monitor the development of the information society in latin america and the Caribbean.....	123

Abstract

This document is the third version of an ongoing exercise to benchmark the Plan of Action of the World Summit on the Information Society (WSIS). The first version was delivered to the delegates of PrepCom I of WSIS in Hammamet, Tunisia, June 2004. A second version to the delegates of the Latin American and Caribbean – European Union Forum on the Information Society, in Rio de Janeiro, November 2004. Graphs and tables are indicative and aim at demonstrating the current situation of Latin America and the Caribbean countries in relation to achieving the actions proposed during the 2003 Geneva phase of WSIS. Conclusions are drawn from the presented evidence in every field, which results in the particular challenges the region faces in the transition toward a Latin American and Caribbean Information Society.

A. Introduction

Given the limited data available, the presented evidence is partial, often anecdotic and sometimes incomplete (fields marked with n.f. stands for “not found”). OSILAC welcomes comments, suggestions or additional information to improve this document (SocInfo@cepal.org).

The outline follows the chapters and paragraphs of the WSIS Plan of Action. Every section of the benchmarking exercise is built on the following structure:

WSIS: “#) corresponding citation(s) of WSIS Plan of Action”

EVIDENCE IN THE RESPECTIVE FIELD

Graph(s) or policy table(s)

Source of graph or table.

Conclusion: drawn from presented evidence.

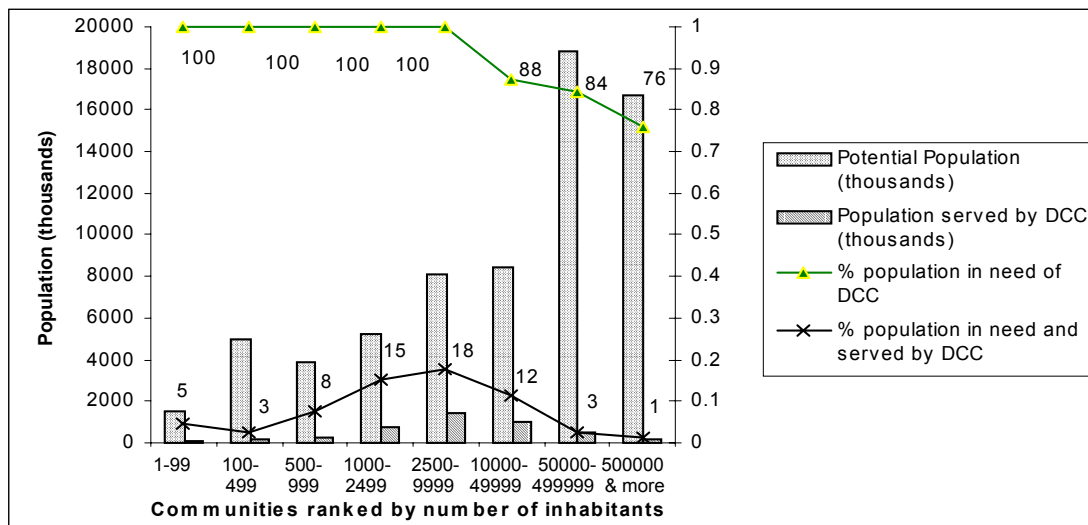
Challenge: *Outstanding challenge(s) for the region.*

B. Objectives, goals and targets

WSIS: “6. Based on internationally agreed development goals, including those in the Millennium Declaration, which are premised on international cooperation, indicative targets may serve as global references for improving connectivity and access in the use of ICTs [Information and Communications Technologies] in promoting the objectives of the Plan of Action, to be achieved by 2015. [...]

a) to connect villages with ICTs and establish community access points;”

FIGURE 1
POTENTIAL AND ATTENDED POPULATION WITH ACCESS TO DIGITAL COMMUNITY CENTERS (DCC) IN MEXICO
(Thousands and Percentage) (2003)



Source: Directorate-General of Tariffs and Statistical Integration, COFETEL, Secretaría de Comunicaciones y Transportes Mexico, 2003.

Conclusion: Policies for public access points already exist in many countries. Some of them can be considered worldwide best practices. Nevertheless, within countries, the digital divide still prevails and the potential population in need of public access to the Information Society is still large.

Challenge: *To expand these policies, prioritizing social inclusion and cohesion.*

WSIS: “6 b) to connect universities, colleges, secondary schools and primary schools with ICTs;”

TABLE 1
EDUCATIONAL ESTABLISHMENTS WITH ICT ACCESS IN COLOMBIA
(Percentage) (2001)

Educational Establishments/Access to ICT	Primary and Secondary		Universities	
	Private	Public	Private	Public
Computer access	57	22	100	100
Internet access	21	4.5	96	95

Source: DANE. Medición de las tecnologías de la información y las comunicaciones, TIC, Estadísticas e Indicadores del sector educación formal regular y educación superior, 2003.

TABLE 2
USE OF COMPUTERS IN EDUCATIONAL ESTABLISHMENTS IN COLOMBIA
(Percentage) (2001)

Educational Establishments/Use of computers	Primary and Secondary		Universities
	Private	Public	Private and Public
Education	53.9	49.9	53.4
Administration	10.9	9.6	27.0
Education and Administration	35.2	40.5	19.6

Source: DANE. Medición de las tecnologías de la información y las comunicaciones TIC, Estadísticas e Indicadores del sector educación formal regular y educación superior, 2003

Conclusion: The vast majority of universities are already connected, while in primary and secondary schools the digital divide still prevails. In a large number of cases, ICT equipment is only used for administrative purposes and not for teaching or research.

Challenge: *Expand and make better use of existing ICT infrastructure and integrate the new technologies and solutions effectively in the daily learning and research processes.*

WSIS: “6 c) to connect scientific and research centres with ICTs;”

WSIS: “22 a) Promote affordable and reliable high-speed Internet connection for all universities and research institutions to support their critical role in information and knowledge production, education and training, and to support the establishment of partnerships, cooperation and networking between these institutions.”

TABLE 3
ADVANCED RESEARCH NETWORKS
(2004)

Country	Argentina	Bolivia	Brazil	Chile
Name of Network	RETINA	BOLNET	RNP	REUNA
Year	1990	1990	1989	1986
Type of managing organization	Not for profit private organization (self financed)	Educational governmental organization (self financed)	Not for profit private organization (self financed)	Not for profit private organization (self financed)
No. of organizations associated	52	20	369	19
Characteristics of associated organizations	37 higher education institutes, 8 research institutions, 4 ministries, 3 NGOs	7 higher education institutes, 8 research institutions, 3 ministries, 2 NGOs	242 higher education institutes, 53 secondary education institutes, 68 research institutions, 6 ministries	18 higher education institutes and CONICYT
Network connected to CLARA	yes	n.f.	yes	yes
Network connected to Internet 2	yes	no	yes	yes
Main Objectives	Facilitate the integration of the existing academic networks, promote the use of new communication technologies by researchers, teachers and persons linked to the academic sector	Connect the university and research communities with each other and with the advanced networks of the world	Promote the development of technologies in the area of networks and innovative applications in Brazil, supporting the use of internet networks as cooperators in the progress of science and education in general	Provide the country's higher education, innovation and research communities services in Information and Communication Technologies

(continuation table 3)

Country	Colombia	Cuba	Ecuador	El Salvador
Name of Network	CETCOL	REDUNIV	FUNDACYT(REYCYT)	RAICES
Year	n.f.	n.f.	1994	2003
Type of managing organization	Mixed law organization, not for profit	Governmental organization (Ministry of High Education)	Non-governmental organization	Private organization, not for profit (self financed)
No. of organizations associated	75	21	38	8
Characteristics of associated organizations	75 higher education institutes, research institutes, public and private entities	16 higher education institutes, 4 research institutes, 1 ministry	32 higher education institutes, 2 research institutes, 1 technology transfer center	7 higher education institutes, 1 research institute
Network connected to CLARA	yes	n.f.	yes	yes
Network connected to Internet 2	no	no	n.f.	no
Main Objectives	Connect the university and research communities among each other and with the advanced networks of the world	Connect the university and research communities among each other and with the advanced networks of the world	Promote the strengthening scientific and technological activities in the country: support the state in the promotion, orientation and strengthening of science, technology and the innovation as main factors for the development of the country in the educational, productive and research fields	Promote and coordinate the development of telecommunications and computing networks directed at scientific, educational and research development in El Salvador

(continuation Table 3)

Country	Panama	Paraguay	Uruguay	Venezuela
Name of Network	REDCYT	ARANDU	RAU	REACCIUN
Year	2002	n.f.	1990	1994
Type of managing organization	Educational organization, not for profit	Educational organization, not for profit	High education institution, not for profit	Governmental organization, not for profit (Ministry of Science and Technology)
No. of organizations associated	10	22	47	73
Characteristics of associated organizations	7 higher education institutions, 1 research institute, 2 governmental institutions	22 higher education institutions	2 higher education institutions, 2 secondary education institutes, primary educational institute, 6 ministries, 4 NGOs, 1 hospital, 1 industry, 30 offices with WAN connections	33 higher education institutions, 30 ministries, 9 NGOs, 1 unidentified institution
Network connected to CLARA	yes	yes	yes	yes
Network connected to Internet 2	yes	no	no	yes
Main Objectives	Provide the educational, research, scientific and technological community with a high speed network in order to improve education.	Establish and operate technological infrastructure; connect to countries' advanced networks; establish collaboration links with organizations of other regions	Propose educational communication at national, regional and international levels; facilitate massive access to new information and communication technologies; facilitate activities of diffusion, distance learning and permanent education	Contribute to national progress through optimal use of new technologies; attend to the necessities of the scientific and technological community

Source: Red Telemática Académica Argentina, www.retina.ar; Consejo Nacional de Ciencia y Tecnología de Bolivia, www.conacyt.gob.bo; Rede Nacional de Ensino e Pesquisa de Brasil, www.rnp.br; Red Universitaria Nacional de Chile, www.reuna.cl (2004).

-Red Nacional de Ciencia, Educación y Tecnología de Colombia, www.cetcol.net.co; Ministerio Superior de Cuba, www.mes.edu.cu; Fundación para la Ciencia y la Tecnología, www.fundacyt.org.ec; www.raices.org.sv (2004).

-Red Científica y Tecnológica de Panamá, www.redcyt.org.pa; Arandu-Paraguay, www.arandu.net.py; Universidad de la República de Uruguay, www.rau.edu.uy; Centro Nacional de Tecnología e Información de Venezuela, www.reacciun.ve (2004).

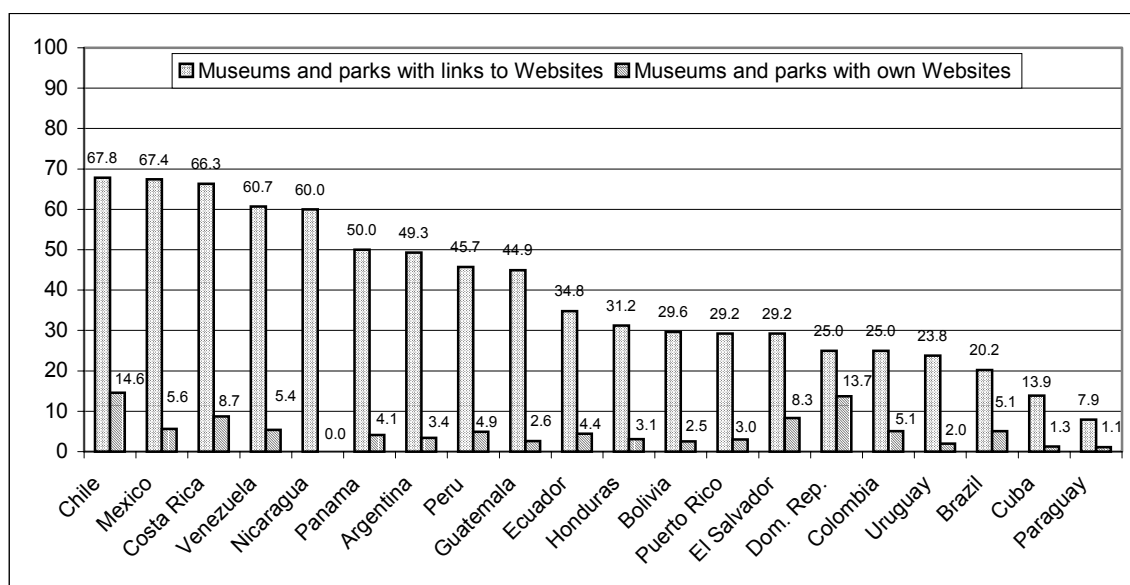
Conclusion: Academic research networks exist since the beginning of the 1990s in many countries. Currently they are in the process of becoming interconnected regionally in Latin America through the CLARA network, and on a worldwide scale through ALICE and Internet2.

Challenge: *Extend research networks to more universities and more countries, broaden the scope to more topics and intensify their usage.*

WSIS: “6 d) to connect public libraries, cultural centres, museums, post offices and archives with ICTs;”

WSIS: “23 b) Develop national policies and laws to ensure that libraries, archives, museums and other cultural institutions can play their full role of content—including traditional knowledge—providers in the Information Society, more particularly by providing continued access to recorded information.”

FIGURE 2
MUSEUMS AND NATURE PARKS WITH WEB PRESENCE
(Percentage) (2003)



Source: Instituto Latinoamericano de Museos, 2003, www.ilam.org/docs/ILAM/Edit2_Museos_Internet.pdf.

Note: “Museums and parques with links to Websites” refer to Websites that show information about the establishment and are administered by a third party (like a Ministry, Cultural Fund or Touristic Portal), while “Museums and parks with own Website” refer to Website that are created and maintained by the institution itself.

Conclusion: The digitalization of the valuable information related to culture from existing content providers, such as museums is growing. Most Websites are centralized and administered by third party information providers.

Challenge: *Create national programmes for the systematic digitalization of contents related to culture. Create mechanisms to assure that administrators of the establishments have access, and the possibility to maintain and up-date the “virtual information gateways” regarding their establishments.*

WSIS: “6 e) to connect health centres and hospitals with ICTs;”

WSIS: “18 a) Promote collaborative efforts of governments, planners, health professionals, and other agencies along with the participation of international organizations for creating a reliable, timely, high quality and affordable health care and health information systems and for promoting continuous medical training, education, and research through the use of ICTs, while respecting and protecting citizens’ right to privacy.”

TABLE 4
HOSPITALS WITH INFORMATION SYSTEMS
(Percentage) (1996-1997)

% with Information System	Country	Total No. of Hospitals	Hospitals without Info. Systems	With Info. Systems		With Computer	
				No. of Hospitals	%	No. of Hospitales	%
More than 71%	Bahamas	5	1	4	80.0	4	80.0
	Puerto Rico	90	20	70	77.8	64	71.1
	<i>Total</i>	95	21	74	78.8	68	71.6
Betw. 51-70%	Guadalupe	10	4	6	60.0	6	60.0
	Uruguay	111	45	66	59.5	66	59.5
	Peru	443	180	263	59.4	262	59.1
	Costa Rica	33	14	19	57.6	19	57.6
	Bermuda	2	1	1	50.0	1	50.0
	Martinica	6	3	3	50.0	3	50.0
	<i>Total</i>	616	252	364	59.1	363	58.9
Betw. 31-50%	Paraguay	236	121	115	48.7	57	24.1
	Mexico	3033	1603	1430	47.1	693	22.8
	Colombia	1053	618	435	41.3	417	39.6
	Brazil	6124	3786	2338	38.2	2313	37.8
	Chile	385	241	144	37.4	144	37.4
	Argentina	2780	1801	979	35.2	812	29.2
	Santa Lucía	6	4	2	33.3	2	33.3
	Suriname	13	9	4	30.8	4	30.8
	<i>Total</i>	13630	8183	5447	40.0	4442	32.6
Betw. 11-30%	El Salvador	77	54	23	29.9	23	29.9
	Honduras	89	66	23	25.8	23	25.8
	Panama	55	41	14	25.4	13	23.6
	Guatemala	145	109	36	24.8	36	24.8
	Venezuela	348	271	77	22.1	54	15.5
	Ecuador	299	240	59	19.7	59	19.7
	Nicaragua	78	66	12	15.4	12	15.4
	Cuba	243	206	37	15.2	37	15.2
	Bolivia	385	327	58	15.1	58	15.1
	Dom.Rep.	213	183	30	14.1	30	14.1
	Barbados	8	7	1	12.5	1	12.5
	<i>Total</i>	1963	1588	375	19.1	351	17.9
Betw. 10-1%	Belice	10	9	1	10.0	1	10.0
	Haití	103	99	4	3.9	3	2.9
	Trin. & Tob.	64	63	1	1.6	1	1.6
	<i>Total</i>	1963	171	6	3.4	5	2.8
None	Ant.& Barb.	3	3	0	0	0	0
	Granada	5	5	0	0	0	0
	Guyana	35	35	0	0	0	0
	Jamaica	31	31	0	0	0	0
	St.Kitts&Nevis	3	3	0	0	0	0
	<i>Total</i>	78	78	0	0	0	0

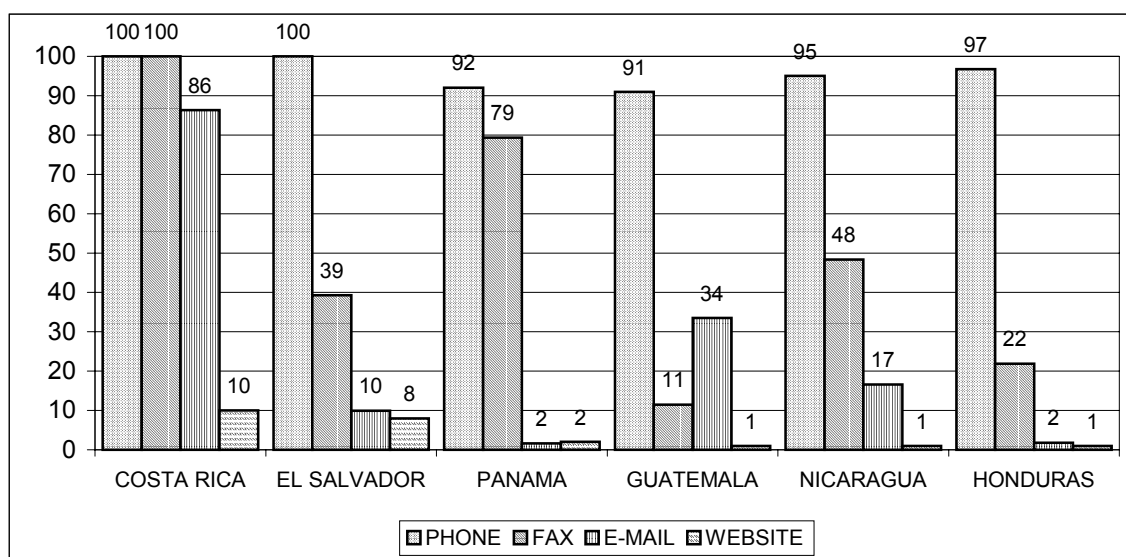
Source: Guía de Hospitales para América Latina y el Caribe, 1996-1997, 1996-1997 División de Desarrollo de Sistemas y Servicios de Salud de la OPS/OMS, 1997.

Conclusion: ICT applied to information systems and other substantive applications, can contribute to improve health systems in Latin America and the Caribbean. These applications have not been considered with the due priority in the region. The fact that the last available data on the issue are from 1996-1997 reconfirms this fact. Back then, only one fourth of the countries in the region had information systems in more than half of their hospitals. In 75 % of the countries, less than 25 % of the hospitals had computers.

Challenge: *Elaborate strategies and implement projects to systematically bring health systems online.*

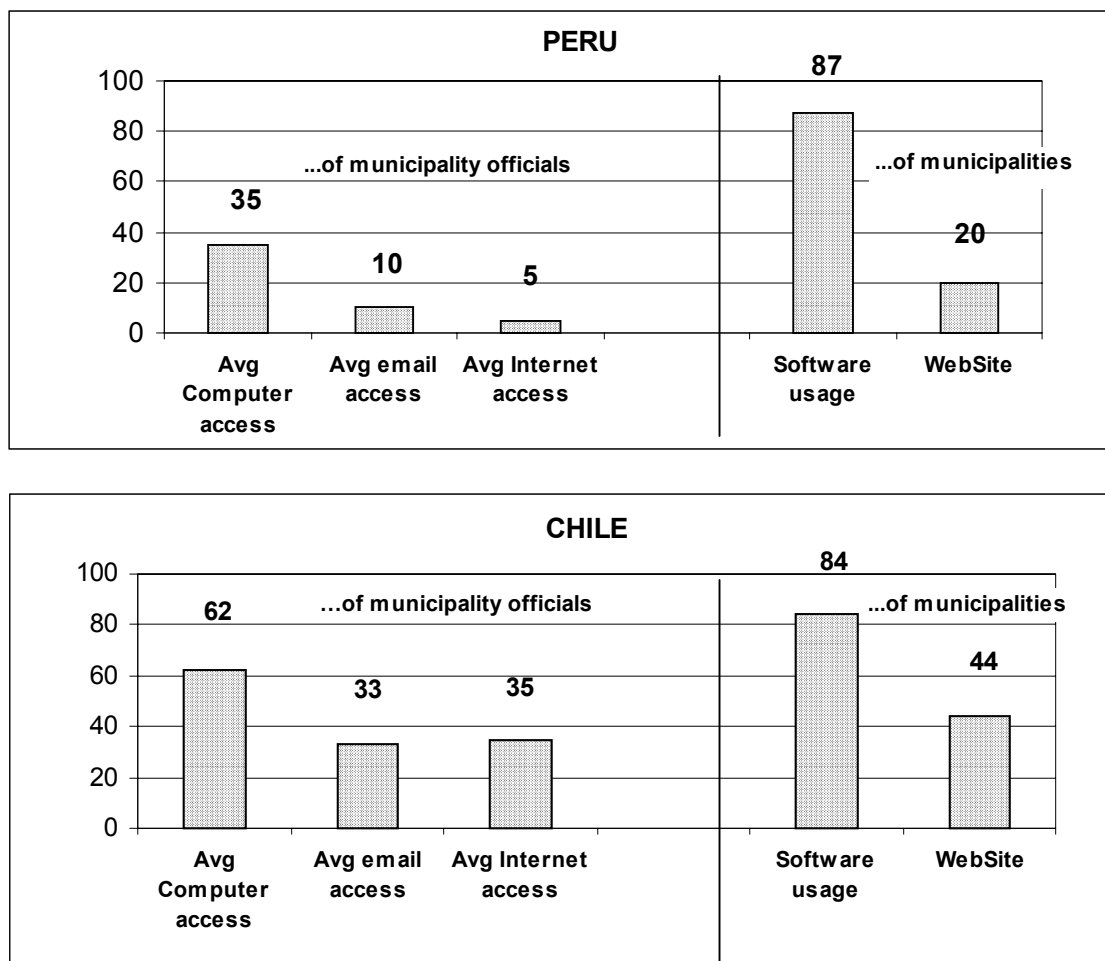
WSIS: “6 f) to connect all local and central government departments and establish websites and email addresses;”

FIGURE 3
ICT INFRASTRUCTURE IN CENTRAL AMERICAN MUNICIPALITIES
(Percentage) (2004)



Source: Own calculations, based on Federación de Municipios del Istmo Centroamericano, www.femica.org; Corporación de Municipalidades de la República de El Salvador, www.comures.org.sv; Asociación de Municipios de Nicaragua, www.amunic.org.

FIGURE 4
ICT ACCESS IN PERUVIAN (N=77) AND CHILEAN (N=106) MUNICIPALITIES WITH
COMPUTER ACCESS
(Percentage) (2003)



Source: Martin Hilbert, 2003, Local e-government: Digital municipalities in Latin America, with empirical evidence from Chile and Peru.

Conclusion: While almost all municipalities already contemplate telephone connectivity, e-mail usage and WebSites are still scarce. There an important difference in connectivity between municipalities and municipality officials within a country. While 87% of the connected Peruvian municipalities work with some kind of administrative software and 20% of them have a Webpage, only 5% of the government officials of those municipalities have access to the Internet.

Challenge: *Extend ICT usage within municipalities and integrate ICT usage into the work routine of local government officials.*

WSIS: “6 g) to adapt all primary and secondary school curricula to meet the challenges of the Information Society, taking into account national circumstances;”

TABLE 5
ICT FOCUS IN SCHOOL CURRICULA IN SELECTED COUNTRIES
(2004)

Brazil	“National Curriculum Parameters Secondary Education: Objectives: ability to use different technologies pertaining to one of the fields of activity; decrease digital divide by implementing changes in school curricula, which should develop the competencies required for students to have access to and use information via computers, and build students’ awareness as to the pervasive presence of new technologies. Competencies and skills to be developed in IT: Recognizing IT as a tool conducive to new learning strategies, capable of significantly contributing to the knowledge development process in different fields of knowledge. Research and comprehension: Identifying the key pieces of equipment in IT, recognizing them according to their features, functions and models. Understanding the basic functions performed by the main automation products in IT [...]. Social and cultural contextualization: Being familiar with the concept of network, distinguishing the global ones - such as the Internet, [...] - from local or corporate networks, such as the Intranets [...]. Understanding computer-related concepts that facilitate the introduction of specific tools into one’s professional activity. Recognizing the role played by IT in the organization of social and cultural life and in people’s comprehension of reality, linking the use of computers to real experiences, be it in the world of labor, be it in people’s private life.”
Chile	Basic educational plans and programmes 1999-2003: Years 1-8: “If students have access to computers to develop their work, it is desirable that they develop the following skills: enter information into the computer, retrieve and edit information, use utilitarian programmes, word processor and drawing tools”. Years 5-8 years and Secondary Education Plans and Programmes (technical and professional) years 2- 4: “use utilitarian programmes: word processors, data bases, worksheets, etc., use of e-mail to send and receive messages; search information on the Internet. Degree specializing in management and accounting: 80 hours. Adequate use of word processors, worksheets, and data base; exchange of data or information between applications pertinent to the area; elaborate, copy and complete reports; backup files and make security copies of all information.
Colombia	Sectorial Plan 2002-2006 for basic and secondary education: relevance of TV, radio and new technologies for the development of skills [...] In coordination with the Ministries of Communications and Culture, efforts will be made towards the creation of a channel and an educational and cultural TV grid [...]. Projects will be promoted that use radio, television and Internet as media towards the development of formal and informal educational programmes. Sectorial Plan 2002-2006 for higher education: use of new methodologies and technologies, technical and technological promotion and training [...] In agreement with the project of the Connectivity Agenda, the expansion of the Internet II system will be encouraged as a platform to facilitate the widening of broadband and enable all the educational system to have a fluid and suitable access to the new connection opportunities to general and specific data bases available at a global level.
Mexico	National Education Programme 2001-2006 basic education: Objective: Develop and expand the use of ICT for basic education, encourage production and distribution, and promote the efficient use of educational audiovisual and information technology materials that are up to date and compatible with the curriculum. Lines of action: A. Encourage the use of ICT among the students, teachers, directors and parents. B. Develop and acquire audiovisual and information technology materials that are relevant and of good quality, and have them available for the use of students, teachers, parents and the general public. C. Design didactic-methodological models adequate for the use of ICT in the classroom. D. Facilitate, through the use of ICT, access to multiple sources of information to encourage different points of view in the classroom. E. Consolidate and update the technological production infrastructure and existing TV transmission and enlarge their coverage and operation. F. Encourage the consolidation of the national image and educational information system through the gathering, digitization, conservation, documentation and organization of pertinent educational equipment. H. Expand and strengthen, in coordination with the federal entities, ICT equipment for reception in primary and secondary schools. Higher education: reform the higher education curriculum to respond to the demands of the knowledge society, and of the social and economic development of the country, adopting educational approaches centered in the learning and intensive use of the ICT.

Source: Ministerio da Educação de Brasil, www.mec.gov.br; Ministerio de Educación de Chile, www.mineduc.cl; Ministerio de Educación de Colombia, www.mineducacion.gov.co; Secretaría de Educación Pública de México, www.sep.gob.mx/wb2, 2004.

TABLE 6
ACCESS TO ICT IN PRIMARY AND SECONDARY EDUCATIONAL ESTABLISHMENTS
(2000, 2001, 2003)

	Chile* (2000)	Colombia (2001)	Peru (2003)
Primary and Secondary Establishments			
Establishments	9496	59119	44878
Computer available	n.f.	24.1%	18.6%
Internet available	41.3%	6.3%	0.57%
Students per computer	46 (2003)	36**	n.f.

Source: Peru: Ministerio de Educación. Unidad de Estadística Educativa, 2003; Colombia: DANE. Medición de las Tecnologías de la Información y las Comunicaciones TIC, Estadísticas e indicadores del sector de educación formal regular y educación superior, 2001; Chile: Programa Enlaces.

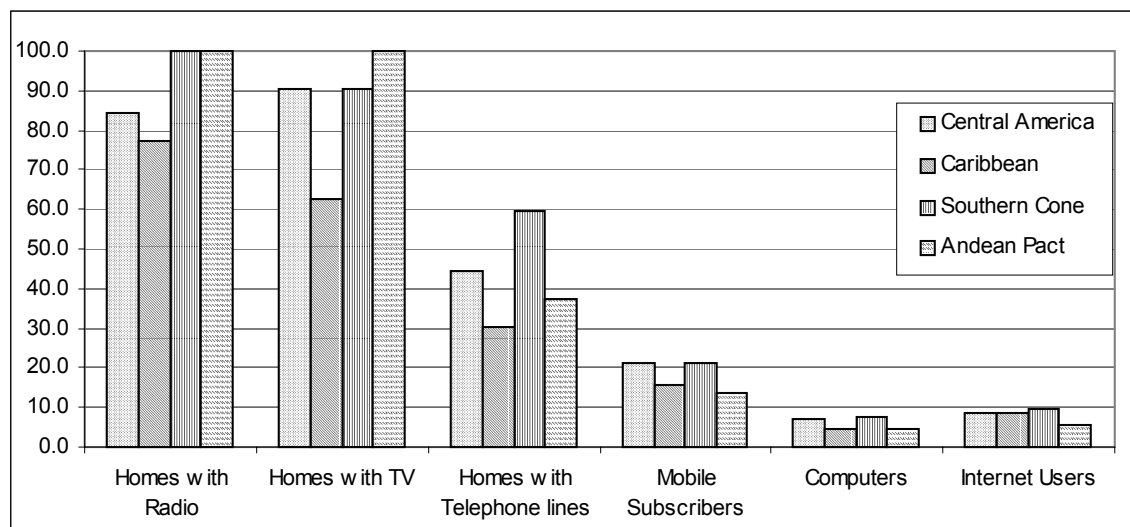
Note: *Data on Chile only considers establishments subsidized by the State. Data for Peru and Colombia includes official and non official (public and private) establishments; **includes pre-school establishments.

Conclusion: While some countries have already undertaken efforts to integrate ICT usage into national schools curricula, the respective formulations and obligations are still very vague. One specific problem in adopting school curricula consists in the incomplete ICT infrastructure in schools. This makes mandatory usage of ICT at the national level impossible.

Challenge: *Find adequate ways to promote ICT usage actively in those schools where ICT infrastructure already exists, considering that universal access among schools and students is a prerequisite for obligatory integration of ICT into the national curriculum.*

WSIS: “6 h) to ensure that all of the world's population have access to television and radio services;”

FIGURE 5
ICT INFRASTRUCTURE PER REGION IN LATIN AMERICA AND THE CARIBBEAN
(Percentage) (2002)



Source: World Telecommunications Database, International Telecommunications Union, ITU.

Conclusion: The penetration of television is extraordinarily high in Latin America and the Caribbean. The region has practically fulfilled the objective of connecting citizens to television and radio services.

Challenge: *Take advantage of the existing situation by promoting the diffusion of new technologies, such as digital television. Promote solutions to bring interactivity to existing television infrastructure.*

WSIS: “6 i) to encourage the development of content and to put in place technical conditions in order to facilitate the presence and use of all world languages on the Internet;”

WSIS: “23 a) Create policies that support the respect, preservation, promotion and enhancement of cultural and linguistic diversity and cultural heritage within the Information Society.”

WSIS: “23 f) Provide content that is relevant to the cultures and languages of individuals in the Information Society, through access to traditional and digital media services.”

TABLE 7
WORLD POPULATION, INTERNET USERS AND WEB CONTENT PER LANGUAGE
(Percentage) (1998-2002)

Language	Percentage of world population	(2000) Internet user per language	(2002) Internet user per language	(1998) Webpages per language	(2000) Webpages per language	(2002) Webpages per language
English	12.4	41.0	34.6	75.0	57.0	49.0
German	1.6	7.2	6.3	n.f.	6.3	7.1
Spanish	6.1	4.5	5.4	2.3	4.8	5.7
French	3.1	3.4	4.0	2.8	4.2	4.7
Portuguese	3.6	1.8	2.6	0.8	2.2	2.7
Italian	1.0	3.4	3.2	1.5	2.6	3.2
Other	71.7	38.7	43.5	17.5	22.7	27.5

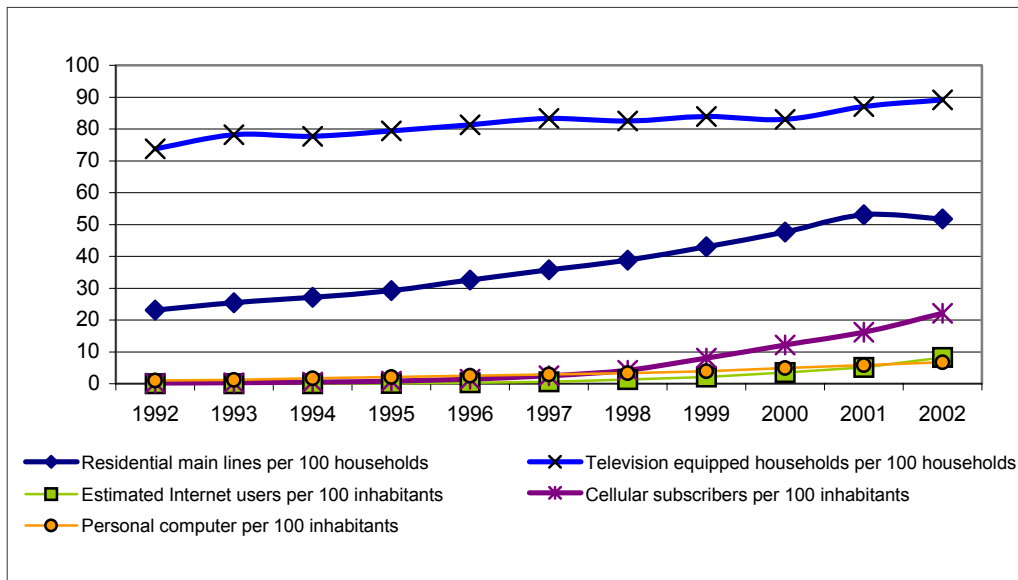
Source: Own calculations, based on Funredes, Languages and Cultures Observatory, 2001, www.funredes.org/LC and International Telecommunications Union (ITU).

Conclusion: While in 1998, 75% of the Web content was in English, in 2002 this number fell to below 50%. Latin languages, such as Spanish, French and Portuguese, are catching up and are almost reaching equality between web content and population proportions. A correlation exists between the growing number of Internet users of a language group and a correspondingly growing number of Webpages in this language.

Challenge: *Set up incentive systems to foster sustainable growth of content in different languages for Latin American and Caribbean ICT users.*

WSIS: “6 j) to ensure that more than half the world’s inhabitants have access to ICTs within their reach.”

FIGURE 6
ICT INFRASTRUCTURE IN LATIN AMERICA
(1992-2002)



Source: World Telecommunications Database, International Telecommunications Union, ITU, 2004.

Conclusion: Internet access is still very limited. In 2002, 92% of the population were still excluded from Internet access, which is a central limitation for the development of the Information Society in the region. Mobile phone usage has experienced extraordinary growth.

Challenge: *Promote physical and economic access to ICT infrastructure.*

C. Action Lines

C1. The role of governments and all stakeholders in the promotion of ICTs for development

WSIS: “8. The effective participation of governments and all stakeholders is vital in developing the Information Society requiring cooperation and partnerships among all of them.

WSIS: “8 a) Development of national e-strategies [...] should be encouraged by all countries by 2005 [...].

WSIS: “8 b) Initiate at the national level a structured dialogue involving all relevant stakeholders, including through public/private partnerships, in devising e-strategies for the Information Society and for the exchange of best practices.

WSIS: “8 c) [...] The private sector should be engaged in concrete projects to develop the Information Society at local, regional and national levels.”

TABLE 8
NATIONAL INFORMATION SOCIETY STRATEGIES IN SELECTED COUNTRIES
(2004)

Countries	Principal Coordinator	Legal Bases	Launch	Strategic Leadership	Operative Leadership	Participation of private sector/ civil society
Argentina	Comité Estratégico Mixto para la Sociedad de la Información y el Conocimiento	Decreto 1018/98, modified by Decreto 252/00 y 243/01	Nov. 2004	Jefatura de Gabinete de Ministros de Presidencia de la Nación	Different programmes within different government levels	Middle
Bolivia	Agencia para el Desarrollo de la Sociedad de la Información en Bolivia A.D.S.I.B. www.adsib.gov.bo	Decreto supremo 26553, March 2002	March 2002	Vice-presidency for inter-ministerial coordination	Vice-presidency	Middle
Brazil	Comitê Executivo do Governo Eletrônico	Decreto Nº 3.294, December 1999	December 1999	Executive Committee	Several "câmaras técnicas" within different government levels	Low
Chile	Grupo de Acción Digital www.agendadigital.cl	Decreto Supremo July 1998 + Decreto June 2000	July 1998	Presidential Commission	Subsecretaría de Economía	High
Colombia	Agenda Conectividad www.agenda.gov.co	CONPES 3072 February 2000	February 2000	Presidency	Board chaired by the Ministerio de Comunicaciones	Middle
Ecuador	Comisión Nacional de Conectividad www.conectividad.gov.ec	Decreto Ejecutivo No 1781	August 2001	Inter-Ministerial	CONATEL	Low
Jamaica	Central Information Technology Office (CITO)	-	March 2002	Inter-Ministerial	Independent, linked to the Ministry of Trade, Science and Technology	High
Mexico	Sistema Nacional e-México www.e-mexico.gob.mx	Plan Nac. de Des. 2001-06 and Programa Sectorial de Telecom. y Transp. 2001-06	May 2001	Secretaría de Comunicaciones y Transportes	Secretaría de Comunicaciones y Transportes	Low
Panama	Comisión Permanente para la Modernización del Estado Panameño en función de TIC, e-Panamá www.e-panama.gob.pa	Decreto Ejecutivo Nº 89 from August 2001, Decreto Ejecutivo Nº 72 from March 2002	August 2001	Vice-presidency	Vice-presidency	Low
Peru	Comisión Multisectorial para el Desarrollo de la Sociedad de la Información (CODESI)	Resolución Ministerial No. 181-2003-PCM June 2003	June 2003	Presidency of the Consejo de Ministros	Vice-Ministry of Communications of the Ministerio de Transporte y Comunicaciones	High

(continuation Table 8)

Dominican Republic	CNSI Estratégico y OPTIC Operativo	Decreto 686 2002, Decreto es 1090, 1091 2004	August 2002	Technical Secretariat of the Presidency	Technical Secretariat of the Presidency	Middle
Trinidad and Tobago	Steering Team of the National Information and Communication (ICT) Plan www.nict.gov.tt	n.f.	October 2002	Ministry of Public Administration and Information, with inter-ministerial coordination	Steering Team	High
Venezuela	Ministerio de Educación, Cultura y Deportes + Ministerio de Infraestructura + Ministerio de Ciencia y Tecnología	Decreto 825 from May 2000	May 2000	Three different ministries	All ministries	Low

Source: Martin Hilbert, Sebastián Bustos, Joao Carlos Ferraz (2003), Estrategias Nacionales para la Sociedad de la Información en América Latina y el Caribe, CEPAL, Naciones Unidas, www.eclac.cl/id.asp?id=13815.

Conclusion: Information society development is a subject of growing importance in public policies. There is no single model for a national strategy, however almost all countries have begun to develop a national strategy.

Challenge: *Foster the institutionalization and strengthen the operative phase of strategies taking into account national conditions. Coordinate different authorities, actors and activities towards a coherent strategy, exploring synergies among projects. The strategy should be part of a national development strategy.*

Conclusion: The participation and effective integration of private sector and civil society stakeholders is still low in many national strategies.

Challenge: *Make effective use of the valuable assets the private sector and civil society can provide.*

WSIS: “8 d) Each country is encouraged to establish at least one functioning Public/Private Partnership (PPP) or Multi-Sector Partnership (MSP), by 2005 as a showcase for future action.

WSIS: “8 e) Identify mechanisms, at the national, regional and international levels, for the initiation and promotion of partnerships among stakeholders of the Information Society.”

WSIS: “26 b) [...] build on and accelerate public-private partnerships, focusing on the use of ICT in development.”

TABLE 9
EXAMPLES OF CIVIL SOCIETY AND PRIVATE SECTOR INITIATIVES IN THE REGION
(2004)

Organization	Characteristics	Targets	Year of creation	Countries	Information creation	ICT Promotion and developments in			
						e-education	Handicapped	e-health	e-commerce
Asociación para el progreso de las comunicaciones www.apc.org	NGO association	To promote ICT use in development	1990	Worldwide	yes	yes	yes	yes	no
Platform for Communication Rights www.crisinfo.org	NGO group	To watch over communication rights in the Information Society	1996	Worldwide	yes	no	no	no	no
FUNREDES www.funredes.org	Foundation	To promote ICT in Latin America and the Caribbean	n.f.	Latin America, Caribbean, and Zimbabwe	yes	yes	n.f.	yes	yes
Instituto del Tercer Mundo www.item.org.uy	NGO association	To contribute to the development of the people and to improve the environment through information, communication and education activities	1989	Worldwide	yes	yes	no	no	no

AHCIET www.ahciet.net	Business association and research centers	To be a meeting point and development framework in the Ibero-american telecommunications sector	1982	20 countries in Latin America, Caribbean and Europe	yes	yes	yes	yes	no
Asoc. Caribeña de Org.Nacionales de Telecomunicaciones www.canto.org	Business association	To exchange information and knowledge among Caribbean telecommunications operators, to improve the sector and related policy making	1985	27 countries from the Caribbean	yes	no	no	no	no
Fundación Cisneros www.cisneros.com	Foundation	To promote education and humanitarian health in Latin America, as well as environmental protection	n.f.	Latin America and the Caribbean	yes	yes	no	no	no
Fundación Telefónica www.telefonictcchile.cl	Foundation	To contribute to the improvement of the quality of life in the least favored sectors through the study and development of social applications in telecommunications	1999	Chile, Peru, Argentina, Brazil	yes	yes	yes	yes	no
Global Business Dialogue www.gbde.org	Business association	To be a space for the development of e-commerce by the business sector	1999	Worldwide	yes	no	no	no	yes

Conclusion: Proactive and far-reaching initiatives from the private sector and civil society exist in the region regarding Information Society development.

Challenge: *Considering the often missing link among different stakeholders, the valuable contribution of civil society and the private sector should be better exploited.*

WSIS: “8 g) By 2005, relevant international organizations and financial institutions should develop their own strategies for the use of ICTs for sustainable development [...]”

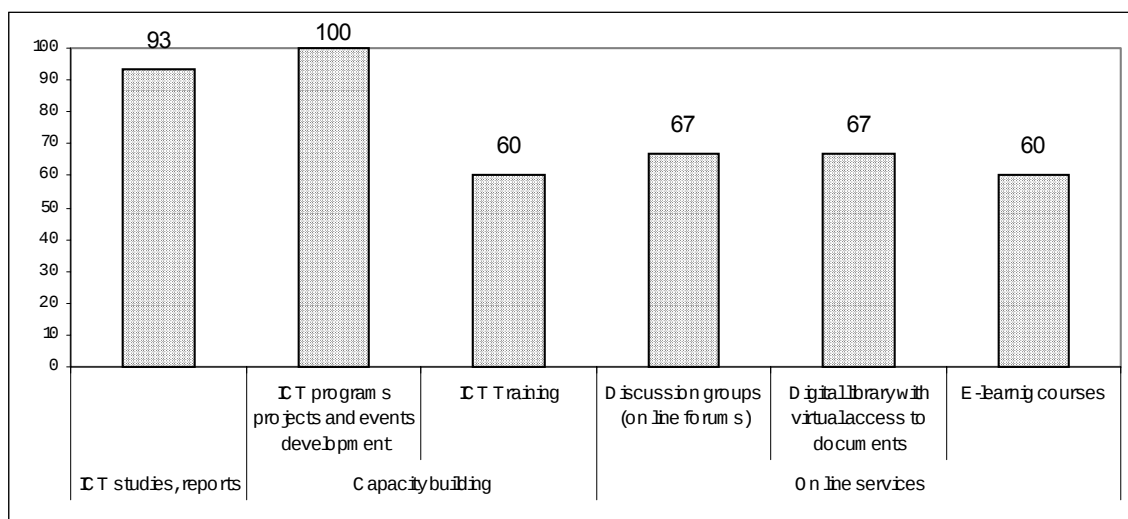
WSIS: “8 h) International organizations should publish, in their areas of competence, including on their website, reliable information submitted by relevant stakeholders on successful experiences of mainstreaming ICTs.”

WSIS: “10 g) Encourage research on the Information Society, including on innovative forms of networking, adaptation of ICT infrastructure, tools and applications that facilitate accessibility of ICTs for all, and disadvantaged groups in particular.”

WSIS: “11j) Design and implement regional and international cooperation activities to enhance the capacity, notably, of leaders and operational staff in developing countries and LDCs, to apply ICTs effectively in the whole range of educational activities. This should include delivery of education outside the educational structure, such as the workplace and at home.”

WSIS: “26 c) Invite international and regional organizations to mainstream ICTs in their work programmes and to assist all levels of developing countries, to be involved in the preparation and implementation of national action plans to support the fulfilment of the goals indicated in the declaration of principles and in this Plan of Action, taking into account the importance of regional initiatives.”

FIGURE 7
EXAMPLES OF ICT RELATED ACTIVITIES OF INTERNATIONAL ORGANIZATIONS (N=15),
FROM THE REGION
(Percentage) (2004)



Source: ALADI, www.aladi.org; CARICOM, www.caricom.org; CEPAL, www.eclac.cl; COMUNIDAD ANDINA, www.comunidadandina.org; FAO, www.fao.org; GLOBAL ENVIRONMENT FACILITY, www.gefweb.org; INTER-AMERICAN DEVELOPMENT BANK, www.iadb.org; ILO, www.ilo.org; MERCOSUR, www.mercosur.org.uy; OEA, www.oas.org; PAHO, www.paho.org; UNCTAD, www.unctad.org; UNESCO, www.unesco.org; WIPO, www.wipo.int; WORLD BANK, www.worldbank.org/lac.

Conclusion: Many sub-regional, regional and international organizations of the region are mainstreaming ICT issues into their work programme. The effective use of ICT to support their own activities, including e-learning applications and digital libraries, is also gaining importance.

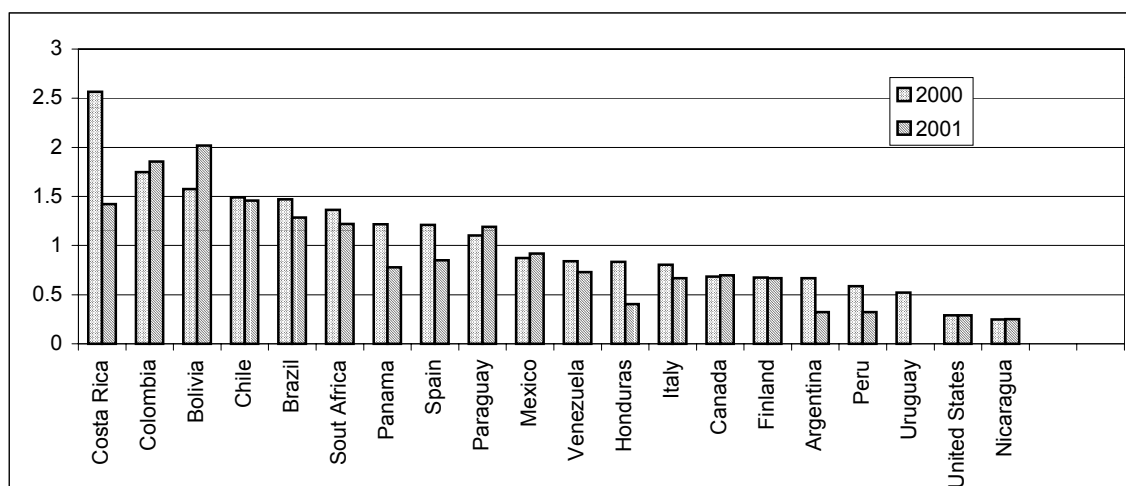
Challenge: *Given the borderless nature of the Internet, and given that a large part of the work of international organization is information and communication based, ICT still have a vast potential to improve the performance of international organizations. International organizations need to undergo profound institutional changes to become “e-organizations”. Similarly to transformations in the national public sector, this implies reorganization of work-flow and of human resource allocation.*

C2. Information and communication infrastructure: an essential foundation for the Information Society

WSIS: “9. Infrastructure is central in achieving the goal of digital inclusion, enabling universal, sustainable, ubiquitous and affordable access to ICTs by all, taking into account relevant solutions already in place in developing countries and countries with economies in transition, to provide sustainable connectivity and access to remote and marginalized areas at national and regional levels.

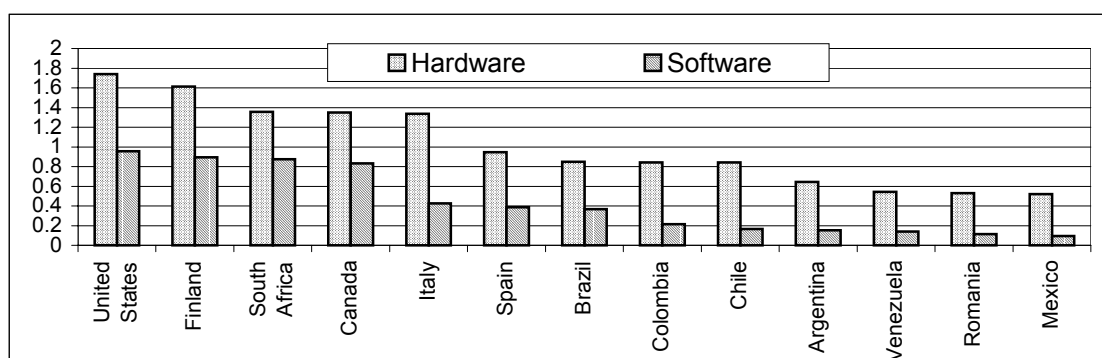
WSIS: “9 a) Governments should take action [...] for the necessary investment in ICT infrastructure and for the development of new services.”

FIGURE 8
TELECOMMUNICATIONS EXPENDITURES
(As percentage of GDP) (2000-2001)



Source: own calculations, based on World Telecommunications Database, ITU, 2004

FIGURE 9
HARDWARE AND SOFTWARE EXPENDITURES
(As percentage of GDP) (2001)



Source: own calculations, based on WITSA, Digital Planet 2002, The Global Information Economy.

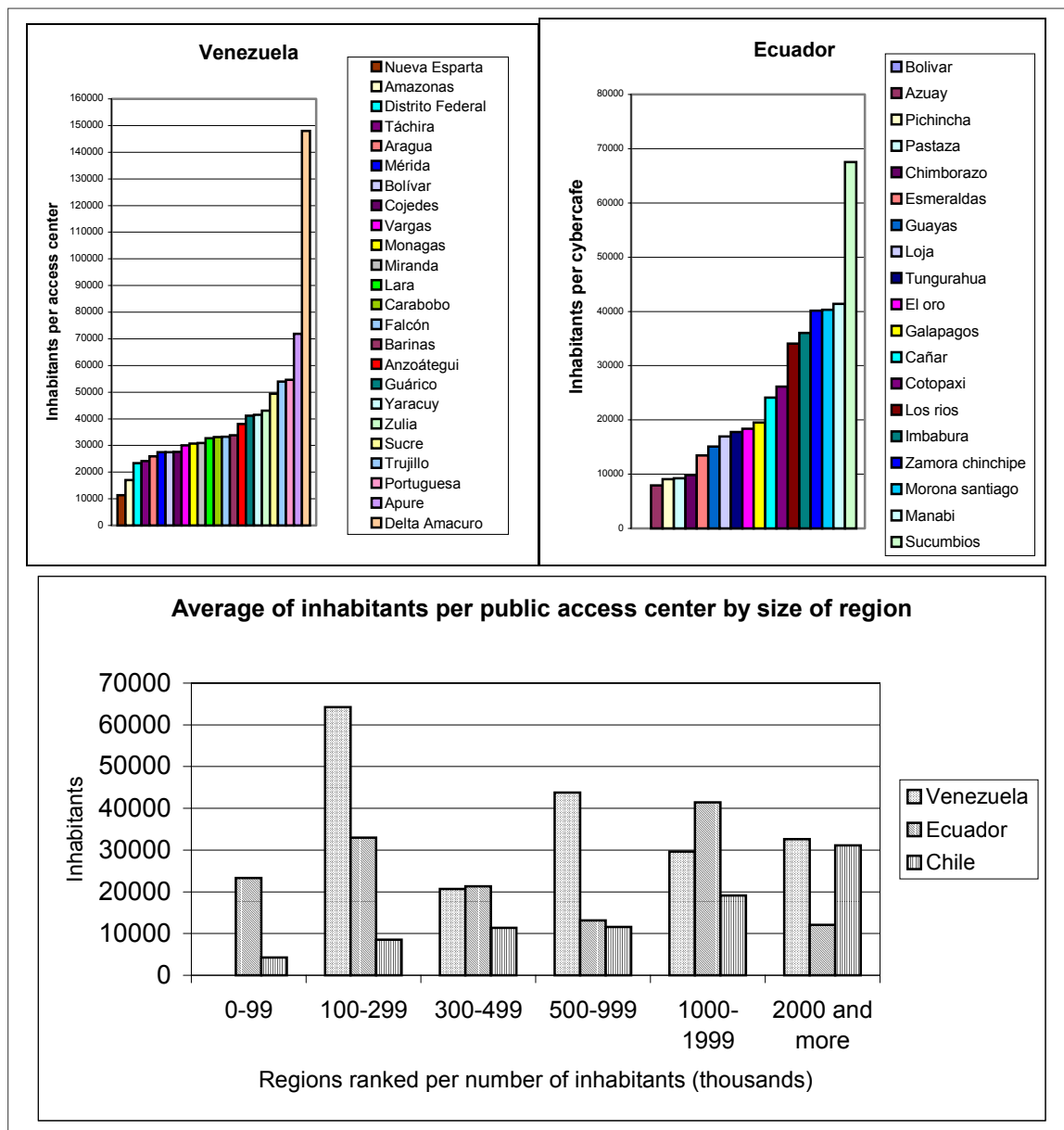
Conclusion: Hardware investments make up the largest part of ICT expenditure, with around 1 % of GDP in 2001. Telecom investments follow, averaging 0.9 %, while software expenditures take the smallest share with roughly 0.4 % of regional GDP. However, software expenditures have been the only one not hit by the 2000-2001 market downturn. As the graph shows, in 70 % of the selected Latin American countries, telecommunications expenditures were strongly reduced between 2000 and 2001. Comparing internationally, Latin American countries place very high priority on investments in telecom infrastructure.

Challenge: *Assure sustainability of ICT investments over the medium term.*

WSIS: “9 b) [...] devise appropriate universal access policies and strategies, and their means of implementation, in line with the indicative targets [...].”

WSIS: “10 d) Governments, and other stakeholders, should establish sustainable multi-purpose community public access points, providing affordable or free-of-charge access for their citizens to the various communication resources, notably the Internet.”

FIGURE 10
INHABITANTS PER PUBLIC ACCESS CENTERS IN VENEZUELA (N= 796 IN 2002),
ECUADOR (N= 792 IN 2004), CHILE (N=809 IN 2003)



Source: own calculations, based on: Venezuela: Observatorio Estadístico. Conatel and INE, including: Telecenters, Communication Centers (CANTV) and Connection Centers (Telcel). Ecuador: Superintendencia de Telecomunicaciones, including: Registered and authorized cybercafes that belong to the “Internet para Todos” plan. Programa Nacional de Infocentros Chile, infocentros.gob.cl.

TABLE 10
CHARACTERISTICS OF PUBLIC ACCESS CENTERS AND INTERNET CAFES IN PERU
(2004)

Characteristics	Ownership	Equipment	Number of users	Lifetime
	70% rented 30%own	12 computers on average	55 users per day on average	14.5 months on average
Impact on the economy	Investments between 2001-2003	Generation of monthly income	Generation of working posts	Percent of users in Metropolitan Lima
	Approx. 50 million dollars	7.5 million dollars	25,000 = 15,000 direct +10,000 indirect	89% have used public booths / for 71% booths are usual places
Operational costs during first year	Current expenses 1998 / 2004	Installations 1998 / 2004	Equipments 1998 / 2004	Annual connectivity 1998 / 2004
	US \$ 10,000 / US \$ 10,000	US \$ 3,000 / US \$ 2,500	US \$ 8,000 US \$ 3,500	US \$ 3,840 US \$ 1,200
Growth in the number of public centers	2000	2001	2002	2003
	1,372	1,973	2,907	10,823

Source: OSIPTEL Peru, 2004

Conclusion: While universal access policies in the region are seen as best practices worldwide, the domestic digital divide is still very relevant, particularly in marginalized regions.

Challenge: *The effective distribution and allocation of resources of universal access policies needs to be subject to constant evaluation and improvement.*

WSIS: “9 d) Develop and strengthen national, regional and international broadband network infrastructure, including delivery by satellite and other systems, to help in providing the capacity to match the needs of countries and their citizens and for the delivery of new ICT-based services.”

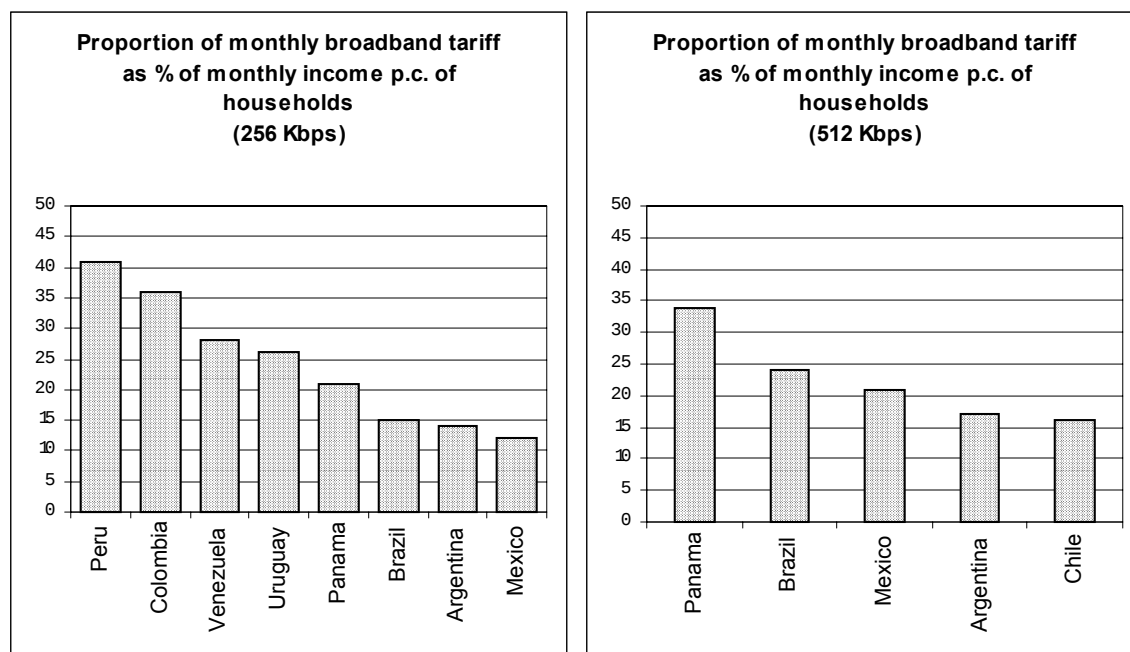
TABLE 11
AVERAGE RATES AND AFFORDABILITY OF BROADBAND IN LATIN AMERICAN COUNTRIES*
(2004)

Country	Average monthly flat-rate plan ADSL 256 Kbps	Average monthly flat-rate plan ADSL 512 Kbps	Monthly income per capita of household	Proportion of monthly tariff as % of monthly income p.c.h.	
				256 Kbps	512 Kbps
Argentina	68	80	481	14.2%	16.6%
Brazil	74	114	479	15.5%	23.8%
Chile	n.f.	25490	154719	n.f.	16.5%
Colombia	123000	n.f.	337433	36.5%	n.f.
Mexico	349	599	2892	12.1%	20.7%
Panama	49	80	239	20.6%	33.5%
Peru	131	n.f.	322	40.6%	n.f.
Uruguay	1321	n.f.	5086	26.0%	n.f.
Venezuela	78000	n.f.	279295	27.9%	n.f.

Source: own calculation based on information from the principal service provider

***Note:** Calculations based on local currency at current prices.

FIGURE 11
AFFORDABILITY OF BROADBAND IN LATIN AMERICAN COUNTRIES
(2004)



Source: own calculation based on information from the principal service provider.

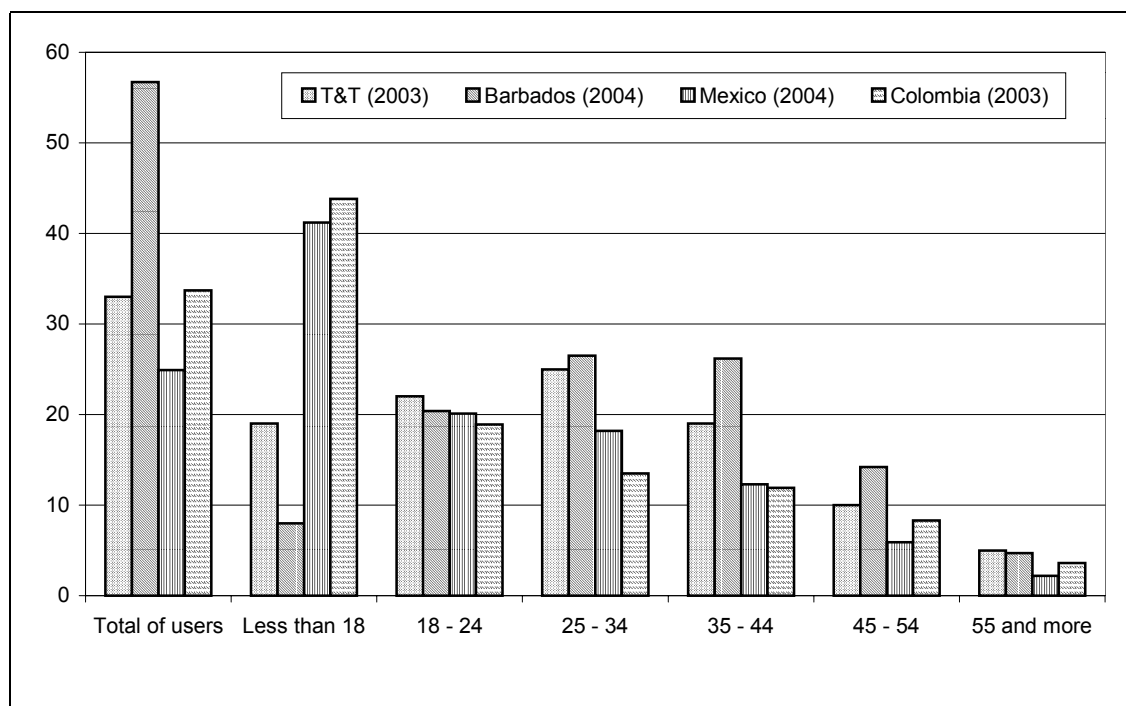
Note: Calculations based on local currency at current prices.

Conclusion: Broadband Internet infrastructure exists in many countries in the region, but economic barriers limit its usage. While in the United States, flat-rate Internet access through xDSL costs less than 1.5% of monthly income per capita, in Peru broadband access is equivalent to an average of 40% of the monthly income per capita of households.

Challenge: *While much remains to be done regarding physical access to broadband networks, more attention needs to be paid to economic access.*

WSIS: “9 e) In the context of national e-strategies, address the special requirements of older people, [...] children, especially marginalized children [...], including by appropriate educational administrative and legislative measures to ensure their full inclusion in the Information Society.”

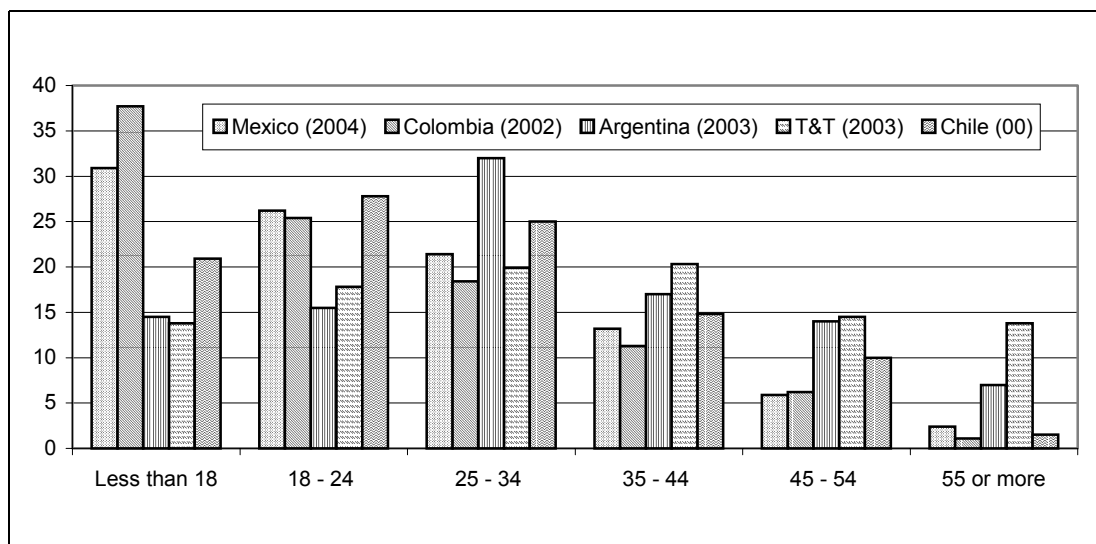
FIGURE 12
COMPUTER USERS BY AGE GROUP
(Percentage) (2003/2004)



Source: own calculations, based on: T&T, NECS: "E-commerce usage and awareness among households (2003)"; Barbados, NCST: "Barbados Information Technology Indicators Study"; National Council for Science and Technology, Febrero 2004; : Mexico, INEGI. National survey on Availability and Use of ICTs in Homes 2004. (<http://www.inegi.gob.mx>); Colombia, DANE: "Agenda de conectividad, medición de las tecnologías de la información y las comunicaciones"; National Administrative department of Statistic (December 2003)

Note: Population of 10 or more years old (except Barbados). Barbados survey was only for population of 16 or more years old.

FIGURE 13
INTERNET USERS BY AGE GROUP
(Percentage)(2000/2003/2004)



Source: own calculations, based on: Mexico, INEGI. National survey on Availability and Use of ICTs in Homes 2004. (www.inegi.gob.mx); Colombia, National survey of Culture, 2002; Argentina, Irol D'Alessio, La audiencia de Internet, International Research On Line – Argentina, 2003; T&T, NECS: "E-commerce usage and awareness among households (2003)"; Chile, "Results and Behavior of the Chilean users in Internet, 2000" University of Chile.

Note: Population of 10 or more years old.

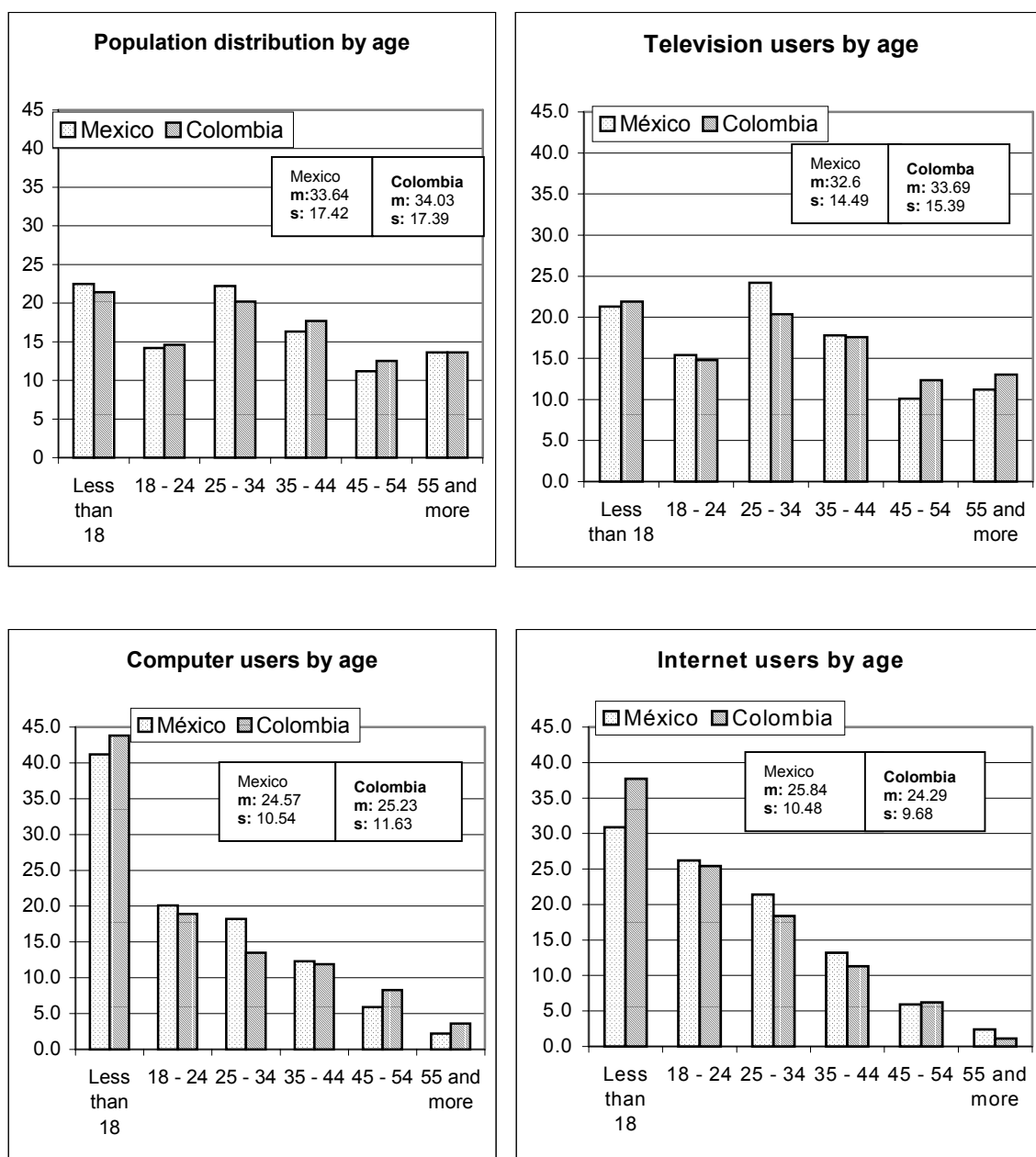
Conclusion: The digital divide favors users younger than 35 years old. Less than two percent of the people over 55 in Mexico, Colombia and Chile, use the Internet.

Challenge: *Sraise awareness and design strategies in order not to accentuate the generational dimension of the digital divide.*

WSIS: “9 f) Encourage the design and production of ICT equipment and services so that everyone, has easy and affordable access to them including older people, [...] children, especially marginalized children, [...] and promote the development of technologies, applications, and content suited to their needs [...].”

WSIS “9 f) Encourage the design and production of ICT equipment and services so that everyone, has easy and affordable access to them including older people, [...] children, especially marginalized children, [...] and promote the development of technologies, applications, and content suited to their needs [...].”

FIGURE 14
ICT ACCESS USAGE DISTRIBUTION
(percentage) (2002/2003)



Source: own calculations, based on Comisión Nacional de Televisión, Encuesta de calidad de vida DANE, 2003. Capítulo Televisión, Bogotá, D.C. 2003; diario Reforma de Mexico, "Encuestas de consumo cultural", Mexico, D.F., 2002.

Note: m = average age. s = standard deviation among age groups.

Conclusion: While the average age of the Colombian population is 34.04 years, the average age of a Colombian television user is 33.69, of a computer user 25.23 and of an Internet user 24.29. In Colombia and Mexico, the standard deviation among age groups decreases, the more sophisticated the technology gets. The more sophisticated the device, the more concentrated is its usage among younger users and the more discrimination in ICT usage can be found.

Challenge: *Set up adequate policies to cope with the special requirements of older people.*

WSIS: “9 e) [...] address the special requirements of [...] persons with disabilities [...] and other disadvantaged and vulnerable groups, [...] to ensure their full inclusion in the Information Society.”

WSIS: “9 f) Encourage the design and production of ICT equipment and services so that everyone, has easy and affordable access to them including [...] persons with disabilities [...] and other disadvantaged and vulnerable groups, and promote the development of technologies, applications, and content suited to their needs [...].”

WSIS: “10 c) Promote research and development to facilitate accessibility of ICTs for all, including disadvantaged, marginalized and vulnerable groups.”

TABLE 12
TIFLOLIBROS- DIGITAL LIBRARY FOR VISUALLY DISABLED PEOPLE IN LATIN
AMERICA
(2004)

Tiflolibros is the first digital library for blind and visually disabled Internet users in Spanish, created in 1999 in Buenos Aires (Argentina). At the moment it counts with more than 1000 users, who have free access to more than 8000 books.	
Participating countries	Technical characteristics of Tifolibros
Argentina	Text visualization in different formats, with an encrypted interface, only accessible for readers of the screen.
Brazil	
Bolivia	Usage of the format .TFL
Chile	
Colombia	Archive opening in Braille format (.BRA), presenting it as an ordinary text, without modifying the original archive.
Costa Rica	
Cuba	Opening text files (.TXT), presenting it as an ordinary text, without modifying the original archive.
Ecuador	
El Salvador	Insertion of indexes, signs and explanations, with side notes.
Guatemala	
Honduras	Management, surfing and editing of indexes and notes.
Mexico	
Panama	Possibility of exchanging notes between different users.
Paraguay	
Peru	Searching for text in open archive.
Puerto Rico	
Dom. Rep.	Flexible movement from chapter to chapter or section to section in .TFL archives.
Uruguay	
Venezuela	Text search in open archive.
	Text visualization between 40-80 characters, for users of Braille lines.

Source: Biblioteca Digital de Habla Hispana para Ciegos, www.tiflolibros.com.ar

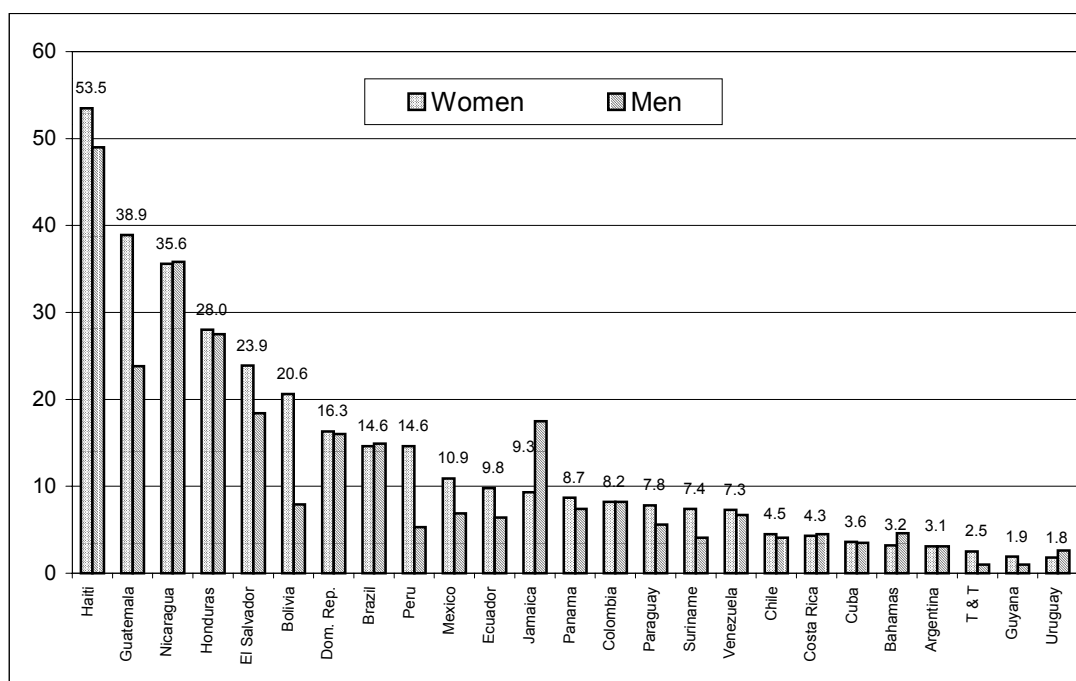
Conclusion: Projects and initiatives to address the special requirements exist, but are very scarce in the region.

Challenge: *Draw more attention and financial resources to enable disadvantaged and disabled people to become full-fledged members of the Information Society.*

WSIS: “9 g) In order to alleviate the challenges of illiteracy, develop affordable technologies and non-text based computer interfaces to facilitate people’s access to ICT,”

WSIS: “11 b) Develop and promote programmes to eradicate illiteracy using ICTs at national, regional and international levels.”

FIGURE 15
ILLITERACY IN THE POPULATION AGED 15 YEARS AND OVER
(Percentage) (2000)



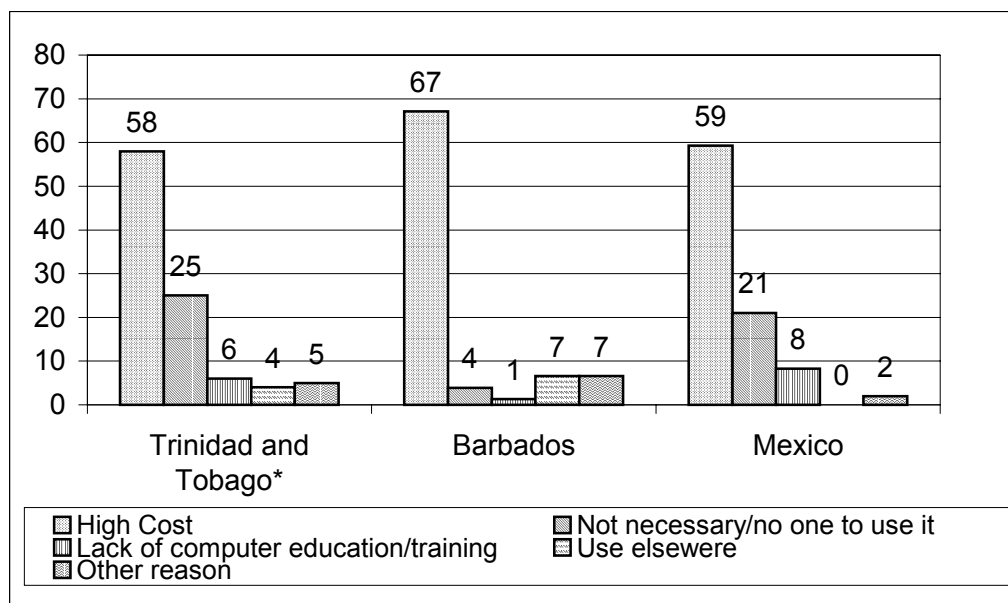
Source: ECLAC, Statistical Yearbook for Latin America and the Caribbean 2002, www.eclac.cl/publicaciones/Estadisticas/1/LCG2151PB/c2_VI.pdf.

Conclusion: Many countries in the region undertook significant efforts during the past decades to bring down illiteracy rates. Some countries in Central America and the Caribbean still show rates higher than 20 %. The difference between male and female illiteracy is relevant in some cases.

Challenge: *As basic literacy is a pre-requisite for entering in and benefiting from the Information Society, the fight against illiteracy is more important than ever.*

WSIS: "9 h) Undertake international research and development efforts aimed at making available adequate and affordable ICT equipment for end users."

FIGURE 16
REASONS FOR NOT HAVING A PC IN THE HOUSEHOLD
(Percentage) (2003/2004)



Source: own calculations, based on: T&T: NECS. E-commerce usage and awareness among households (2003), Barbados: NCST: "Barbados Information Technology Indicators Study (2004), INEGI. Encuesta Nacional sobre Disponibilidad y Uso de las Tecnologías de la Información en los Hogares (2004).

Note: * 2003.

Conclusion: The major reason for the fact that 82% of the households in Mexico, 75% in Trinidad and Tobago and 40% in Barbados do not possess a computer is the high cost of the equipment. Some efforts are taking place (for example in Brazil) to produce and provide cheaper access equipment.

Challenge: *Multilateral cooperation among different stakeholders in the region, may result in better technological solutions, trigger production scale and lower the cost of ICT equipment and devices.*

WSIS: "9 i) [...] Special concern should be given to the Least Developed Countries in their efforts in establishing telecommunication infrastructure."

TABLE 13
HAITI

General Data	
Capital	Port au Prince
Population 2001	8.270.000
Surface area (km2)	27.750
Adult illiteracy rate (% ages 15 and above), 2002	51.9
Economic data	
GDP per capita US\$, 2000	496
GDP million US\$, 2000	3.973
Public and private health expenditure (% of GDP), 2001	5.1
Total debt service (As % of GDP), 2002	0.8
Foreign debt million US\$, 2000	1.170
Technological data (per 1.000 inhabitants)	
Motor vehicles, 2000	19
Telephone mainlines, 2002	16
Mobile subscribers, 2002	17
Television receivers	6
Internet users, 2002	9.6

Source: ECLAC, Statistical Yearbook for Latin America and the Caribbean 2002, [www.eclac.cl/publicaciones/ Estadisticas/1/LCG2151PB/c2_VI.pdf](http://www.eclac.cl/publicaciones/Estadisticas/1/LCG2151PB/c2_VI.pdf); www.cyberschoolbus.un.org/infonation/index.asp?theme=tec&id=332; hdr.undp.org/statistics/data/cty/cty_f_HTI.html.

Conclusion: Haiti is facing very relevant challenges regarding Information Society development in comparison to many of its Latin American and Caribbean neighbors, including high illiteracy rates and a missing television culture.

Challenge: *Information Society development needs to be integrated into the national development strategy, to induce progress toward a smart economy and knowledge society right from the start. The aim must be to leapfrog development stages of the industrial age. New ICT, such as mobile telephony, have shown promising results, also in Haiti.*

WSIS: “9 k) Develop strategies for increasing affordable global connectivity, thereby facilitating improved access. Commercially negotiated Internet transit and interconnection costs should be oriented towards objective, transparent and non-discriminatory parameters, taking into account ongoing work on this subject.”

TABLE 14
INTERCONNECTION REGULATIONS IN REGULATED COUNTRIES

Countries	Management and negotiation aspects			Legal aspects	Economic aspects	
	Is there a specific unit that takes care of the topic?	Mechanisms to materialize the interconnection	Formalization rules of the interconnection relations	Is the inter-connection obligatory? What is it founded on?	Who defines the inter-connection charges?	Methodology to determine the interconnection charges?
Argentina	The Secretary of Communications, with advising of other competent areas, takes care of the subject	Negotiation between the parts without intervention of the Authority	Registry in CNC and publication in a newspaper. It does not require an announcement of the authority	Obligatory	The parties	In case of intervention of the authority, the price will be determined based on the cost of efficient provision. These prices are applied if they do not surpass benchmarking.
Bolivia	Yes	By the subscription in an interconnection agreement or by adhesion to the OBI	The interconnection agreements will have to be presented/displayed to Sittel.	Yes, public interest	The parties	Long term increasing costs.
Brazil	Exists an specific unit	Through interconnection contracts	The relation becomes formal by the creation of a contract, whose effectiveness depends on the homologation from ANATEL.	Yes, public interest	The regulation entity	Model cost "price caps".
Colombia	Yes (Oficina de Coordinación de Solución de Conflictos)	A contract is created after the negotiation between the parts. If they do not get an agreement the CRT can impose obligations	It must be in writing. Favorable uprising of the CRT is not required	Yes, by the interoperability of networks	The regulation entity sets the top prices	Starting with international benchmarking of a methodology of increasing costs, the local telephone tariffs are defined. The technical and economic references of the registered agreements of interconnection are analyzed
Costa Rica	Another activity of the "Dirección General de Gestión de los Servicios de Telecomunicaciones"	The interconnection settles down, through tariff dispositions and regulations	The interconnections are established in the tariff dispositions	It does not apply.	The regulation entity	The costs model is used.
Cuba	Another activity of the (MIC) "Dirección de Regulaciones y Normas del Ministerio de la Informática y las Comunicaciones"	By mutual subscribed agreements between operators, or established by the MIC	Require written contract subscribed by both parts, and a copy to the MIC for its notification	Obligatory.	The parties	Methodologies of costs developed by the companies
Ecuador	Another activity of the "Dirección General de Gestión de los Servicios de Telecomunicaciones"	By subscribed agreement between operators or by a disposition of the regulator	The contract has to be written and it has to be registered in the regulating authority	Obligatory	The parties	Costs model
El Salvador	Another activity of the activities of the "Departamento de recursos de Telecomunicaciones de la SIGET".	The interconnection of networks will negotiate freely between the parts	It requires a written contract, that will has to be registered before the SIGET, its approval is not necessary	Yes, essential resource	The law of Telecommunications	Costs model

(continuation Table 14)

Honduras	Activity of many units like the "Dirección de Servicios de Telecomunicaciones y la Unidad de Análisis Económico, Normativa Tarifaria y la Dirección Legal"	Through the free negotiation of the parts or through a resolution emitted by CONATEL	The agreement requires a contract subscribed by the Operators, and the agreement has to be approved by CONATEL	Yes, public interest	The Regulation sets top prices	The access charges will be based on long term increasing costs for each individual service. Not counting on the necessary information benchmark is used.
Mexico	Activity in which takes part more than one administrative unit	Through the agreements that the concessionaires subscribe	The contract has to be sent to the "Secretaría", to be considered by the "Comisión", if they agree the contract has to be registered in the Registry of Telecommunications	Obligatory	The parties	The costs model that uses the approach "button-up" and considers the costs associated to the efficient expansion of a public network.
Nicaragua	Another activity of the "Dirección de Telecomunicaciones".	Asked for the interconnection, the Regulating Entity orders the immediate interconnection with preliminary character, until the operators reach an agreement after a negotiation process	Requires favorable announcement of the Regulating Entity for the registry of the contracts before its publication for later approval	Yes, public interest	The parties	Increasing long term costs, any costs model or international references
Panama	There exist two units in charge: "La Dirección de Telecomunicaciones" and "la Dirección de Asesoría Legal".	Operators negotiate freely and if it fails, takes part the Regulating Entity	Formalization through an agreement or an interconnection contract, which must be registered in the Regulating Entity	Yes, since is the access and use of a public network	The law of Telecommunications	Long term increasing costs average
Paraguay	Activity in which takes part more than one administrative unit	Negotiation between the parts	The contract must be sent to the regulating authority for its knowledge	Yes, public interest	The parties	Long term increasing costs
Peru	Another activity of the "Gerencia de Políticas Regulatorias y Planeamiento Estratégico"	Negotiation between the parts, if they are not agreed, OSIPTEL can emit a mandate	Approval of the interconnection contract or emission of the interconnection mandate by the regulating organism	Yes, public interest	The Regulator decides the positions	International comparison. Information about the costs of the companies. Efficient enterprise model
Dominican Republic	Activity in which takes part more than one administrative unit.	Negotiated freely by the parts. In case of discord, the regulating organ will take part	The parts must fulfill the publicity requirement and have the obligation to present/display the contract to the INDOTEL for their approval	Yes, public interest	The parties	In case of not having the necessary information: costs model and benchmark
Venezuela	Activity of the "División de Interconexión y Recursos Limitados adscrita a la Gerencia de Gestión de Servicios de Telecomunicaciones de CONATEL".	Established freely by the operators through an interconnection contract. If they do not subscribe it, CONATEL will order the interconnection	Once subscribed the interconnection contract it will have to be authenticated and to be sent to CONATEL for its information	Obligatory	The parties. If they don't get an agreement, CONATEL	In the case of fixation of use positions, CONATEL uses at the moment a study of international comparison "Benchmark". In a second stage, they calculate it, according to the long term increasing costs model and to the Commission definitions.

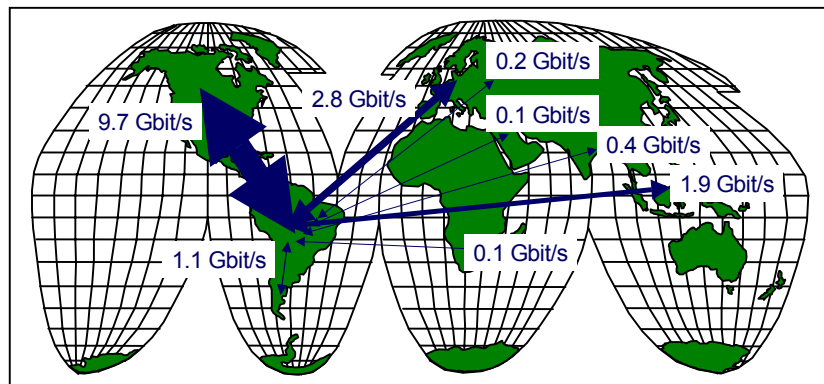
Source: REGULATEL y OSIPTEL, La Interconexión en el ámbito de Regulatel, Lima, Febrero de 2004

Conclusion: At the national level, telecommunications regulator all over the region are using interconnection agreements as an essential tool to strengthen competition in the telecommunications sector and therefore to reduce prices.

Challenge: *Orient commercially negotiated interconnection agreements on an international level on similar non-discriminatory and transparent rules and procedures.*

WSIS: “9 j) Optimize connectivity among major information networks by encouraging the creation and development of regional ICT backbones and Internet exchange points, to reduce interconnection costs and broaden network access.”

FIGURE 17
INTERNATIONAL PEAK-HOUR INTERNET TRAFFIC FLOWS TO AND FROM LATIN AMERICA
(GBIT/S) (2001)



Source: Ovum Analyses, cited from Foro Latinoamericano de Entes Reguladores/Asociación Hispanoamericana de Centros de Investigación y Empresas de Telecomunicaciones (Regulatel/AHCIET), “Internet and Telecommunications Traffic Flows in Latin America and their Market Dynamics”, prepared by Ovum-CybeRegulation Consultants (www.ahciet.net/pag.asp?pag=ovum.asp), 2001.

Conclusion: The overwhelming majority of Latin American and Caribbean Internet traffic is directed through North America. The nuances of commercially negotiated Internet transit and interconnection agreements with Pier 1 operators from the North and intraregional traffic exchange points are essential for the determination of Internet access costs in the region.

Challenge: *Constant and detailed revisions of Internet transit negotiations must be undertaken, under transparent and non-discriminatory parameters.*

WSIS: “9 l) Encourage and promote joint use of traditional media and new technologies.”

TABLE 15
RADIO AND TV CHANNELS ON THE INTERNET
(Number of channels) (2004)

Country	Radio	TV	Country	Radio	TV
Brazil	254	89	Paraguay	12	2
Argentina	134	25	Honduras	11	0
Mexico	98	19	Antillas Hol.	11	1
Chile	77	8	Aruba	10	1
Costa Rica	59	5	Belice	9	1
Venezuela	56	11	Bahamas	9	3
Ecuador	39	6	Trinidad & Tobago	8	0
Peru	36	11	Jamaica	8	3
Cuba	35	5	Granada	7	0
Uruguay	32	3	Guyana	6	2
El Salvador	31	2	Antigua	5	1
Panama	30	4	Surinam	4	0
Puerto Rico	28	6	Dominica	4	0
Colombia	28	12	St Kitts and Nevis	3	0
Dom. Republic	27	5	Santa Lucia	3	2
Guatemala	23	2	Barbados	3	0
Bolivia	22	11	St Vic. and Gren.	1	0
Haiti	14	2	Brit. Virgin Island	1	0
Nicaragua	13	2			

Source: own calculations, based on www.comfm.com

Conclusion: ICT convergence is merging existing content with new technological channels. Migrating radio and TV programs to the Internet can make better and effective usage of existing information content from Latin America and the Caribbean, while opening the opportunity of worldwide diffusion of local contents.

Challenge: *Sistematically set up incentive systems to make better usage of traditional media content and technologies. Existing media content from the region is very rich and should be fully exploited.*

C3. Access to information and knowledge

WSIS: “10. ICTs allow people, anywhere in the world, to access information and knowledge almost instantaneously. Individuals, organizations and communities should benefit from access to knowledge and information.”

WSIS: “10 a) Develop policy guidelines for the development and promotion of public domain information as an important international instrument promoting public access to information.”

WSIS: “10 b) Governments are encouraged to provide adequate access through various communication resources, notably the Internet, to public official information. Establishing legislation on access to information and the preservation of public data, notably in the area of the new technologies, is encouraged.”

TABLE 16
FREEDOM OF INFORMATION LEGISLATION IN LATIN AMERICAN AND CARIBBEAN COUNTRIES
(2004)

Country	Argentina	Belize	Colombia	Ecuador	Jamaica
Legislation (Law /Decree)	Access to Public Information (Decree 1172/2003)	Freedom of Information Act (Chapter 13)	General Law of Archives (594 of 2000)	Organic Law of Transparency and Access to Public Information (2004-34)	Access to Information Act (No. 21)
Year of enforcement	2003	2000	2000	2004	2002
Year of first identified Legislation/ years of previous legislations	1994: Art. 1,33,41,42,75, clause 22 of the Constitution of Argentina	1994: Freedom of Information Act (No. 9)	1888: Political and Municipal Code/ 1985: Law 57 which orders the publicity of official acts and documents	1998: Art. 81 of the Political Constitution of the Republic of Ecuador	No previous legislation
Incorporates the use of internet through the following: Web publications/online requests/individual online consultations	Web publications: web page of the Official Bulletin of the Republic of Argentina	Individual consultation on line: the media selected by the citizen should be used, except in the cases stated in Art. 17 (3)	Web publications: any technical, electronic, informatic, optic or telematic media may be used, except in the cases stated in Art. 19	Web publications: time limit of one year to put public information in webpages	On line requests: it is possible to use e-mail and internet/ individual online consultation: the media requested by the citizen should be used
Period for reply (days)	max. 10 (+add. 10)	max. 14	max. 10	max. 10 (+add. 5)	max. 30 (+add. 30)
Cost of service	Free access/requester pays for the reproduction of information	Not specifically mentioned in the act	Not specifically mentioned in the act	Free access/ requester pays for the reproduction of information	Free access/requester pays for the reproduction of information (with a price reduction when justifiable)
Formalities	Written request with the identification of the requesting person	Written requests	Not mentioned explicitly in the act	Written request with the identification of the requesting person	Written, telephone or electronic request
Restrictive exceptions	National security, international relations, economic stability, confidential information of third parties, crime investigation (Law 4 Art. 16)	National security, international relations, economic stability, confidential information of third parties, crime investigation (Art. 22-34)	Reserve character according the the Constitution or the law, confidential information of third parties.(Art.27)	National security, confidential information of third parties, crime investigations (Art. 6 and 17)	National security, international relations, economic stability, confidential information of third parties, crime investigation (Art.14-22)

(continuation Table 16)

Country	Mexico	Panama	Peru	Dominican Republic	Trinidad & Tobago
Legislation (Law /Decree)	Federal Law of Transparency and Access to Public Government Information	Law on Transparency in Public Administration (No. 6)	Law of Transparency and Access to Public Information (27.808)	Law of Access to Information	Freedom of Information Act (No. 26)
Year of enforcement	2002	2002	2002	2004	1999
Year of first identified legislation/ years of previous legislations	1997: Art. 6 of the Constitution of the Mexican United States	1972: Political Constitution of the Republic of Panama amended by the Reformatory Acts of 1978 and by Constitutional Act of 1983: Art. 41 of the Political Constitution of the Republic of Panama.	1993: Art. 2 clause 5 of the Political Constitution of Peru	No previous legislation	No previous legislation
Incorporates the use of internet through the following: Web publications/online requests/individual online consultations	Web Publications: obligation of introducing public information electronically/on line requests: the Federal Institute of Access to Public Information established an electronic system	On line requests: it is possible to use e-mail and internet/Individual requests on line: the requested communication media should be used, offices will respond via internet (Art. 4)	Web publications: it is required that the public department supply information through the Internet	Individual online request: information must be transmitted in its original form, if possible	Individual online requests: requested communication media should be used, with the exceptions mentioned in Art. 18 (4)
Period of reply (days)	max. 20	max. 30 (+add.30)	max. 7 (+add. 5)	max. 15 (+add.10)	max. 30
Cost of service	Free access/ requester pays for the reproduction of information	Free access/ requester pays for the reproduction of information	Free access/ requester pays for the reproduction of information	Free access/ requester pays for the reproduction of information	Free access/ requester pays for the reproduction
Formalities	Not mentioned	Written online or offline request (on line with name, identification, address and telephone)	Written request	Verbal or written request with the identification of requesting person	Written request signed by requesting person
Restrictive exceptions	National security, international relations, economic stability, confidential information of third parties, crime investigation, others (Art. 13 and 14) (Art. 13 y 14)	National security, international relations, economic stability, confidential information of third parties, crime investigation (Art. 14), others (Art. 15)	National security, international relations, economic stability, confidential information of third parties, crime investigation, others (Art.15,16)	Confidential information of third parties, international relations, national security, crime investigations, others (Art. 8)	National security, international relations, economic stability, confidential information of third parties, crime investigation, others (Art.24-34)

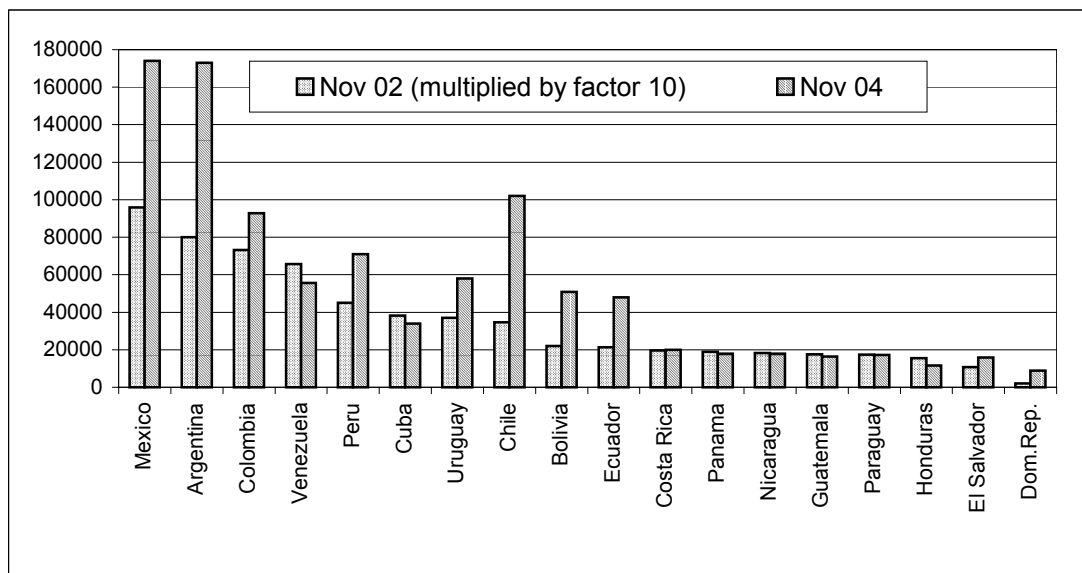
Source: www.infoleg.mecon.gov.ar/txtnorma/90763.htm; Privacy International, www.privacyinternational.org
www.freedominfo.org/reports/mexico1/lawesp.pdf;
www.pciudadana.com/gestion_publica/acceso_informacion.htm
www.nalis.gov.tt/Socio_economic/THE-FREEDOM-OF-INFORMATION-ACT1999.htm; Attorney General's Ministry, www.belizelaw.org/lawadmin/PDF%20files/cap013.pdf, www.freedominfo.org/survey/global_survey2004.pdf, www.freedominfo.org/news/peru2/perufoia.pdf.

Conclusion: So-called Freedom of Information (FOI) legislations exist in several countries of the region. In some cases they have existed for over 115 years. Legislations aim at making disclosure, provision and distribution of information from and about the public sector the rule, and official secrecy the exception. Under those legislation, citizens have the right to obtain desired information, while the State must justify secrecy, not the other way around. The effective usage and integration of ICT to implement and improve the performance of legislative frameworks is however still incipient.

Challenge: *Freedom of Information Legislations should be revised in the light of the new possibilities ICT offers.*

WSIS: “10 e) Encourage research and promote awareness among all stakeholders of the possibilities offered by different software models, and the means of their creation, including proprietary, open-source and free software, in order to increase competition, freedom of choice and affordability, and to enable all stakeholders to evaluate which solution best meets their requirements.”

FIGURE 18
NUMBER OF GOOGLE HITS IN SEARCHES FOR THE EXPRESSION “SOFTWARE LIBRE”
BY COUNTRY
(2002/ 2004)



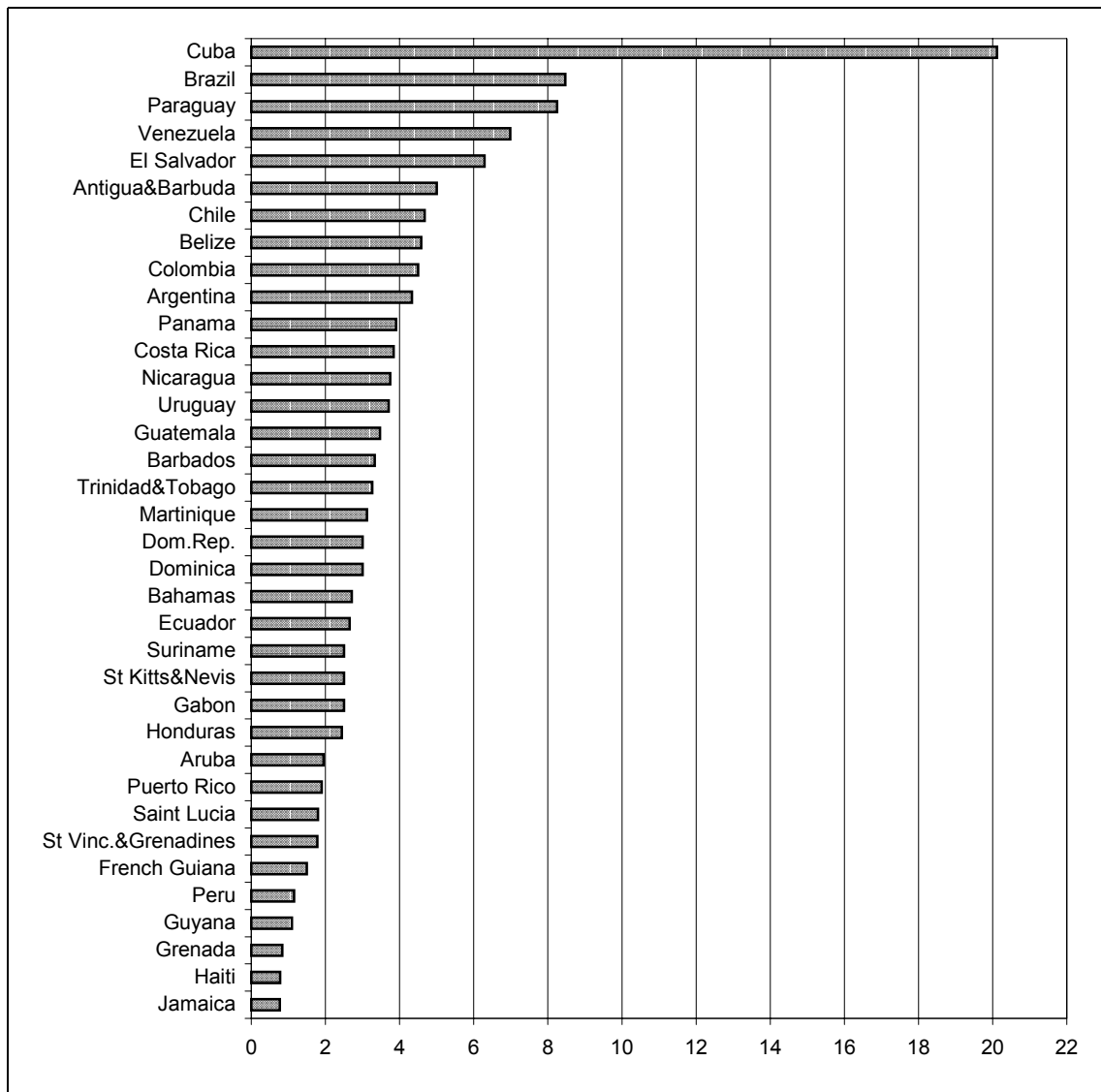
Source: own calculations, based on Google.com, 2002, 2004.

Conclusion: Awareness about open-source models and research on the topic has grown substantially (by more than a factor of 10) over the last two years in the region.

Challenge: *Strengthen the association between research and application of alternative software models.*

WSIS: “10 j) Support research and development of the design of useful instruments for all stakeholders to foster increased awareness, assessment, and evaluation of different software models and licences, so as to ensure an optimal choice of appropriate software that will best contribute to achieving development goals within local conditions.”

FIGURE 19
ESTIMATED LINUX USERS OF INTERNET USERS IN LATIN AMERICA AND THE
CARIBBEAN COUNTRIES
(Percentage) (12/2004)



Source: own calculations, based on The Linux Counter, <http://counter.li.org/>, 2005. World Telecommunication Database, ITU, 2004.

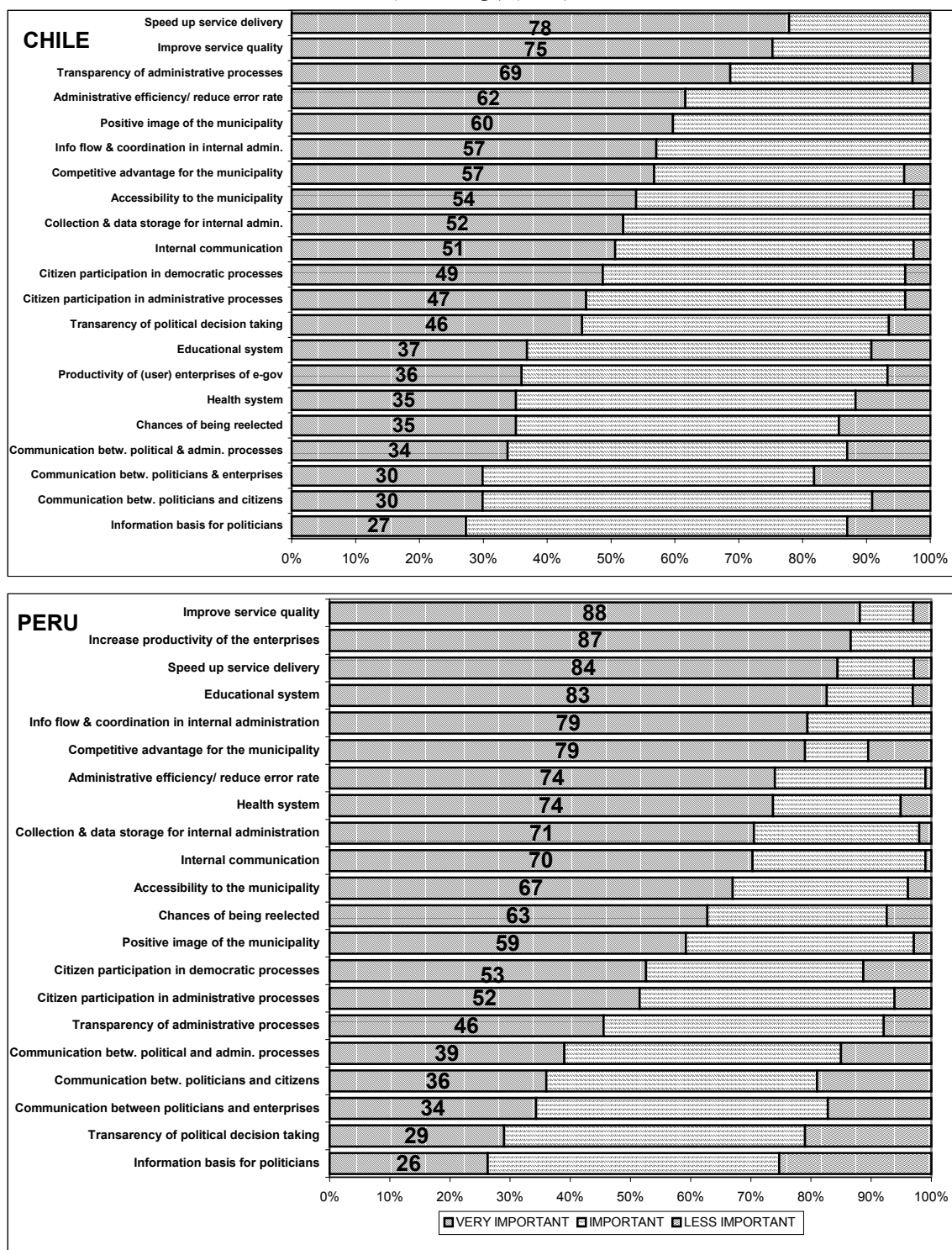
Note: The Linux Counter estimates that between 0.2% and 5% of all Linux users have registered with the Linux Counter. Their specific guess for the amount of registered users in January 2005 is at 0.8%, meaning that one out of 125 Linux users registers with the counter. This estimate has been used as an approximation.

Conclusion: It is estimated that of the 43.5 million Internet users in the region, more than 2.24 million use Linux (5.1%). This market share is still too small in order to be considered as a serious competitor, but the market share is growing.

Challenge: *Assess and evaluate different software models and licenses and foster competition in software markets.*

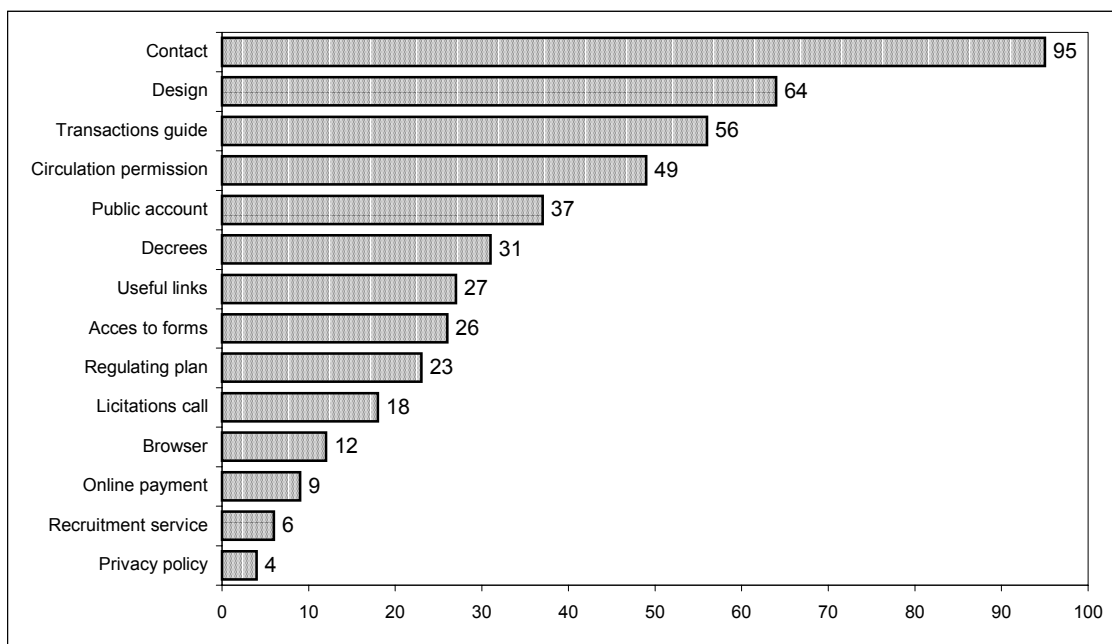
WSIS: “10 f) Governments should actively promote the use of ICTs as a fundamental working tool by their citizens and local authorities. In this respect, the international community and other stakeholders should support capacity building for local authorities in the widespread use of ICTs as a means of improving local governance.”

FIGURE 20
E-GOVERNMENT OBJECTIVES OF CHILEAN AND PERUVIAN MUNICIPALITIES WITH
INTERNET ACCESS (N_{CHILE}=106, N_{PERU}= 77)
(Percentage) (2003)



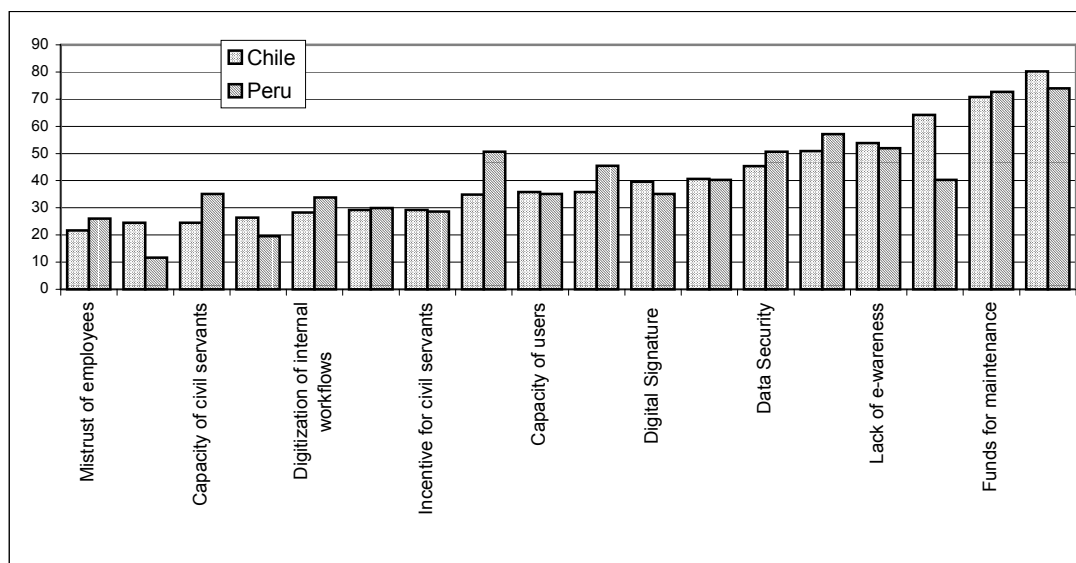
Source: Martin Hilbert, 2003, Local e-government: Digital municipalities in Latin America, with empirical evidence from Chile and Peru.

FIGURE 21
CHARACTERISTICS OF MUNICIPALITY WEBSITES IN CHILE
(Percentage) (2004)



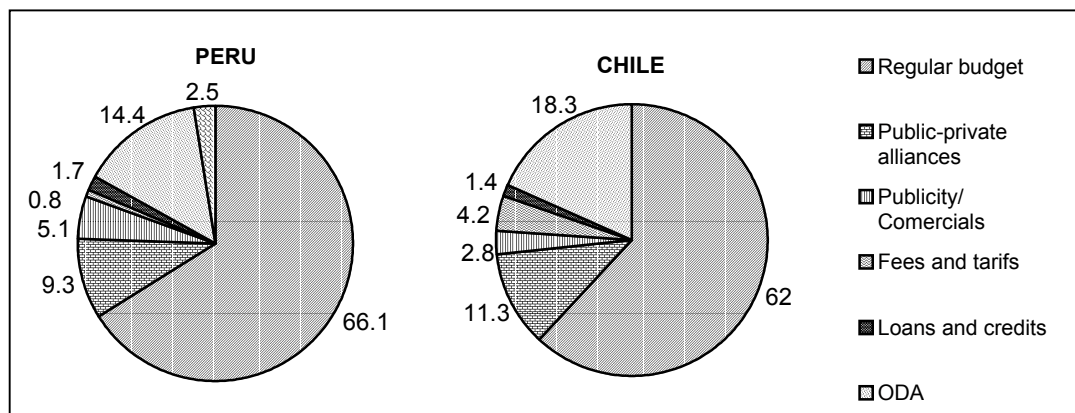
Source: Informe económico semanal Cámara de Comercio de Santiago, 27 septiembre 2004.

FIGURE 22
E-GOVERNMENT OBSTACLES IN CHILEAN (N=106) AND PERUVIAN (N=77) MUNICIPALITIES WITH INTERNET ACCESS
(Percentage) (2003)



Source: Martin Hilbert, 2003, Local e-government: Digital municipalities in Latin America, with empirical evidence from Chile and Peru.

FIGURE 23
FINANCING MECHANISMS FOR E-GOVERNMENT PROJECTS IN CHILEAN (N=106) AND PERUVIAN (N=77) MUNICIPALITIES WITH COMPUTER ACCESS
(Multiple answers) (2003)



Source: Martin Hilbert, 2003, Local e-government: Digital municipalities in Latin America, with empirical evidence from Chile and Peru.

Conclusion: Municipalities in different countries face different priorities in their e-government projects, depending heavily on the State structure and on the division of labor between different levels of government (for example, health and educational services are part of municipal responsibility in Chile, but not in Peru). Financing is seen as the major obstacle for further progress. International cooperation sustains between 14% and 18 % of local e-government efforts, while most efforts rely on regular budget sources.

Challenge: *Search for economies of scale and opportunities of cooperation among local e-government efforts, recognizing differences in State structure. Create sustainable financing mechanisms for the maintenance of digital municipalities.*

WSIS: “10 h) Support the creation and development of a digital public library and archive services, adapted to the Information Society, including reviewing national library strategies and legislation, developing a global understanding of the need for “hybrid libraries”, and fostering worldwide cooperation between libraries.”

TABLE 17
DIGITAL PUBLICATIONS IN ECLAC'S CARIBBEAN DIGITAL LIBRARY
(Number of publications) (2004)

Trinidad & Tobago	90	Cuba	26
Barbados	75	St. Kitts and Nevis	22
Dominica	74	Bahamas	19
Jamaica	73	Haiti	19
Suriname	48	Anguilla	15
Grenada	38	Belize	14
Guyana	35	Antigua	13
St. Vincent & Gdns	34	Dominican Republic	13
Saint Lucia	29	Montserrat	5

Source: ECLAC Caribbean Documentation Center, <http://cdl.ecalcpos.org>.

Conclusion: The process of digitizing documents for digital libraries requires significant resources. Advancements, however, are possible. Even very small countries, as in the case of Dominica, can use digital libraries to achieve visibility through digital content.

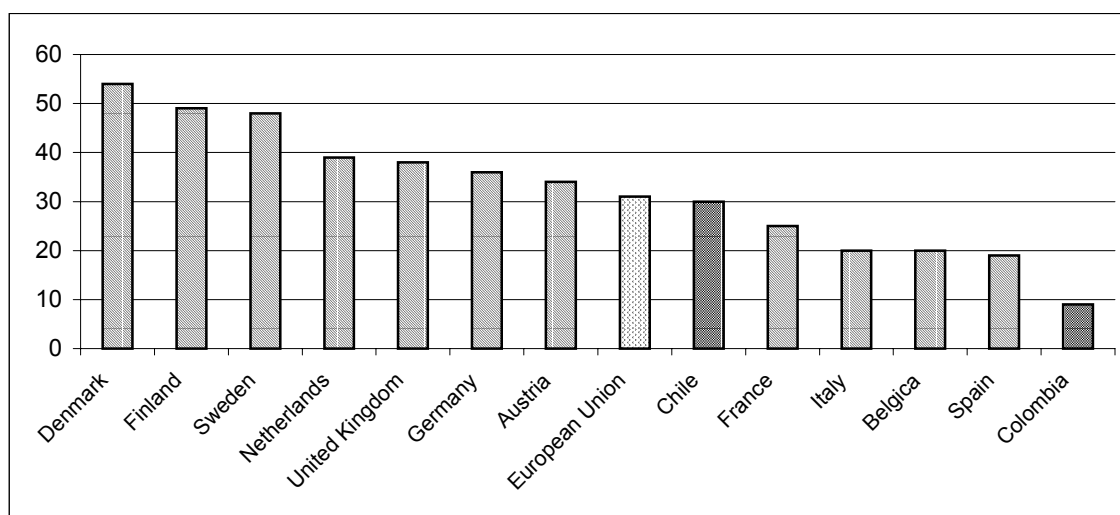
Challenge: *Create cooperative networks to scale up enough resources to make digitization efforts sustainable and source digital libraries with local content.*

C4. Capacity building

WSIS: “11. Everyone should have the necessary skills to benefit fully from the Information Society. Therefore capacity building and ICT literacy are essential. ICTs can contribute to achieving universal education worldwide, through delivery of education and training of teachers, and offering improved conditions for lifelong learning, encompassing people that are outside the formal education process, and improving professional skills.”

WSIS: “11 a) Develop domestic policies to ensure that ICTs are fully integrated in education and training at all levels, including in curriculum development, teacher training, institutional administration and management, and in support of the concept of lifelong learning.”

FIGURE 24
WORKERS WITH COMPUTER TRAINING
(Percentage) (2001/2002)



Source: Own calculations, based on: Chile: Subsecretaría de Economía, agosto 2002; Colombia: DANE, Junio de 2001; Europe: eEurope Benchmarking Report 2002.

TABLE 18
COMPANIES FROM SEVEN LATIN AMERICAN COUNTRIES THAT ARE IMPLEMENTING
E-LEARNING (N = 480 COMPANIES) FOR PERSONNEL TRAINING
(Percentage) (2003)

Total implementation of e-learning			Implementation of e-learning by sector			Implementation of e-learning by size of company (employees)			
	%	Total No.		%	Total No.		Over 2000 (in %)	Between 500-1999 (in %)	Less than 500 (in %)
E-learning is being implemented	23.4	112	Bank and Financial Sector	32.5	101	Does not know/ No answer	13.0	11.8	23.0
Not implemented but implement. considered.	41.5	199	Services Sector	31.5	98	Against implement. of e-learning	5.8	17.4	33.3
Not implemented no interest in doing so	19.2	92	Industrial Sector	16.4	63	Plans to implement e-learning	48.7	44.7	31.5
Does not know/ No answer	16.0	77	Telecom. Sector	10.0	30	Applies e-learning solutions	32.5	26.1	12.1
Total	100%	480	Energy Sector	7.1	9	Total	100%	100%	100%
			Other sectors	2.6	10				
			Total	100%	311				

Source: Revista de e-learning, www.elearningamericalatina.com, 2003.

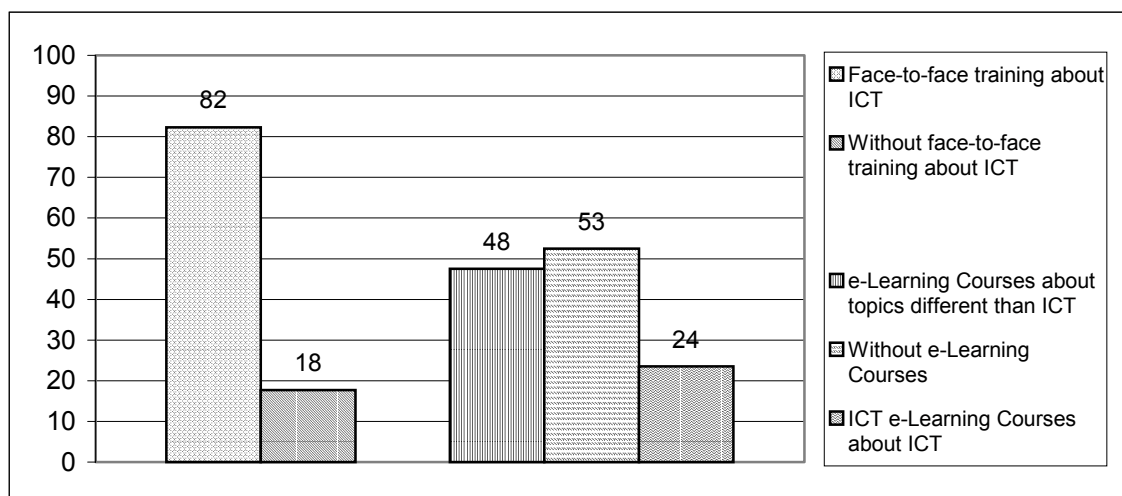
Note: The sample of 480 companies is taken from Argentina, Brazil, Chile, Colombia, Ecuador, Mexico, Peru.

Conclusion: ICT training for workers ranges between 20-50% in most developed countries. Latin America countries are below the European Union average in terms of computer training for workers. Efficient e-learning tools facilitate lifelong learning at the professional level. Large companies are more likely to promote e-learning solutions than small and medium sized companies.

Challenge: *Intensify life-long learning at the enterprise and professional levels. Exchange best practices and create incentive systems on the national level, especially for small and medium sized companies.*

WSIS: “11 c) Promote e-literacy skills for all, for example by designing and offering courses for public administration, taking advantage of existing facilities such as libraries, multipurpose community centres, public access points and by establishing local ICT training centres with the cooperation of all stakeholders. Special attention should be paid to disadvantaged and vulnerable groups.”

FIGURE 25
FACE-TO-FACE ICT TRAINING AND VIRTUAL ICT DISTANCE LEARNING COURSES IN
LATIN AMERICA NATIONAL TRAINING AND CAPACITY CENTERS (N=17 COUNTRIES)
(Percentage) (2005)



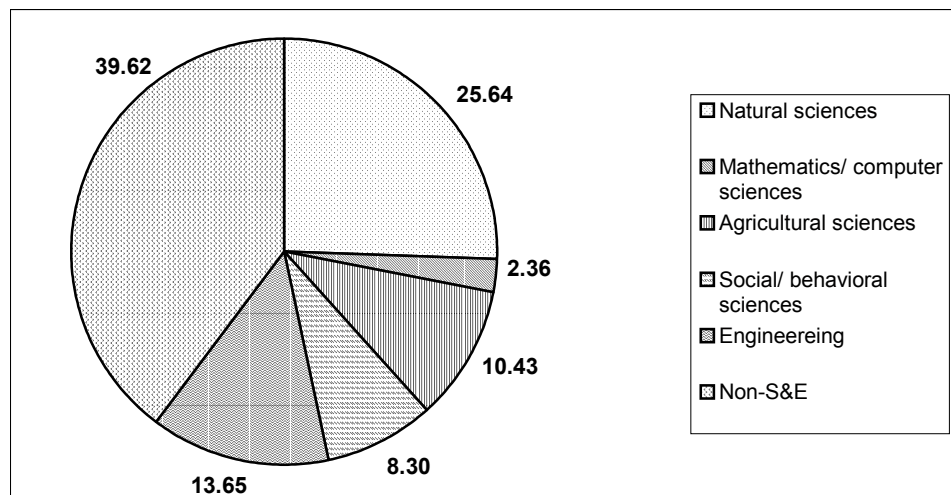
Source: own calculations, based on: Instituto Nacional de Educación Técnica (Argentina), TVE Council (Barbados), Fundación Nacional para la Formación y Capacitación Laboral (Bolivia), Serviço Nacional de Aprendizagem Comercial (Brazil), Servicio Nacional de Capacitación y Empleo (Chile), Servicio Nacional de Aprendizaje (Colombia), Instituto Nacional de Aprendizaje (Costa Rica), Servicio Ecuatoriano de Capacitación Profesional (Ecuador), Instituto Salvadoreño de Formación Profesional (El Salvador), Instituto Nacional de Formación Profesional (Honduras), HEART NTA (Jamaica), Instituto Nacional Tecnológico (Nicaragua), Servicio Nacional de Promoción Profesional (Paraguay), Servicio Nacional de Adiestramiento en Trabajo Industrial (Peru), Instituto nacional de Formación Técnico Profesional (Dom. Rep.), Dirección Nacional de Empleo (Uruguay), Instituto Nacional de Cooperación Educativa (Venezuela).

Conclusion: Most national training and capacity centers already offer face-to-face training courses on ICT usage, especially office applications. The intensity, frequency and variety of courses offered, however, varies among countries. 53 % of the centers already make use of e-learning applications in their training activities.

Challenge: *Make better use of the existing institutions and their training programs to prepare the workforce and society at large for the Information Society.*

WSIS: “11 e) Governments, in cooperation with other stakeholders, should create programmes for capacity building with an emphasis on creating a critical mass of qualified and skilled ICT professionals and experts.”

FIGURE 26
OBTAINED DOCTORAL DEGREES IN BRAZIL
(Percentage) (1999)



Source: Ministry of Education and Culture, Coordenação de Aperfeiçoamento de Pessoal de Nível Superior, unpublished tabulations 2001; in: National Science Foundation, National Science Board, Science and Engineering Indicators 2004, NSB 04-01 (Arlington, VA, USA, 2004).

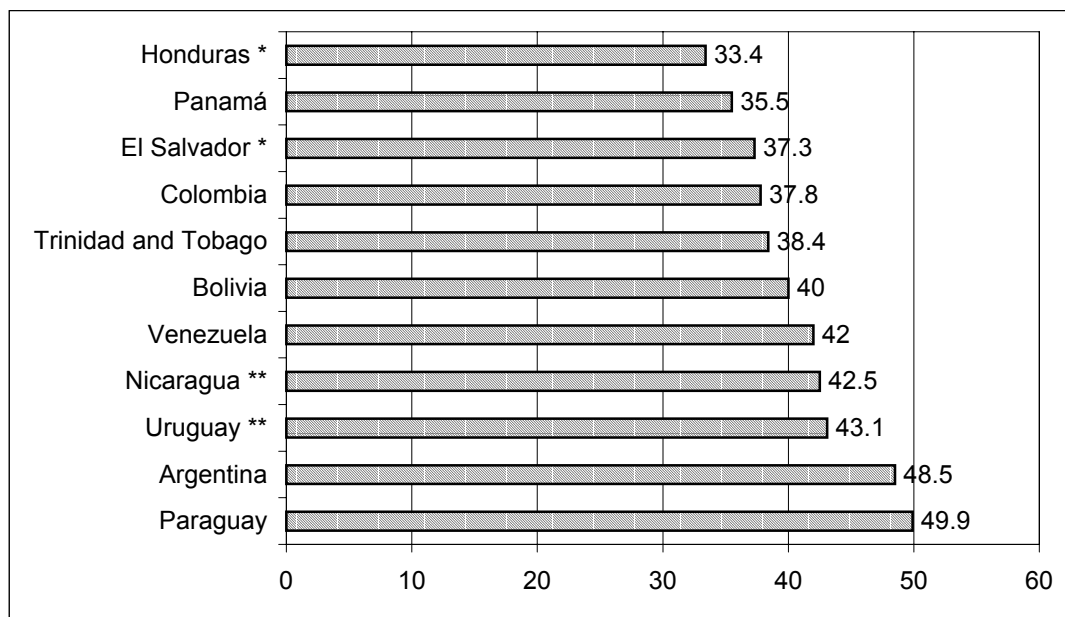
Note: Natural sciences include physical, biological, earth, atmospheric, and ocean sciences. Data for doctoral degrees use the International Standard Classification of Education (ISCED 97), level 6. S&E data do not include health fields.

Conclusion: Of all 3,604 doctoral degrees earned in Brazil in 1999, only 85 were in Mathematics or computer science (2.36%).

Challenge: *Foster ICT related careers to create a critical mass of highly skilled ICT experts.*

WSIS: “11 g) Work on removing the gender barriers to ICT education and training and promoting equal training opportunities in ICT-related fields for women and girls. Early intervention programmes in science and technology should target young girls with the aim of increasing the number of women in ICT careers. Promote the exchange of best practices on the integration of gender perspectives in ICT education.”

FIGURE 27
WOMEN PARTICIPATION IN RESEARCH ACTIVITIES
(Percentage) (2001)



Source: RICYT-Red de Indicadores de Ciencia y Tecnología, www.ricyt.edu.ar/

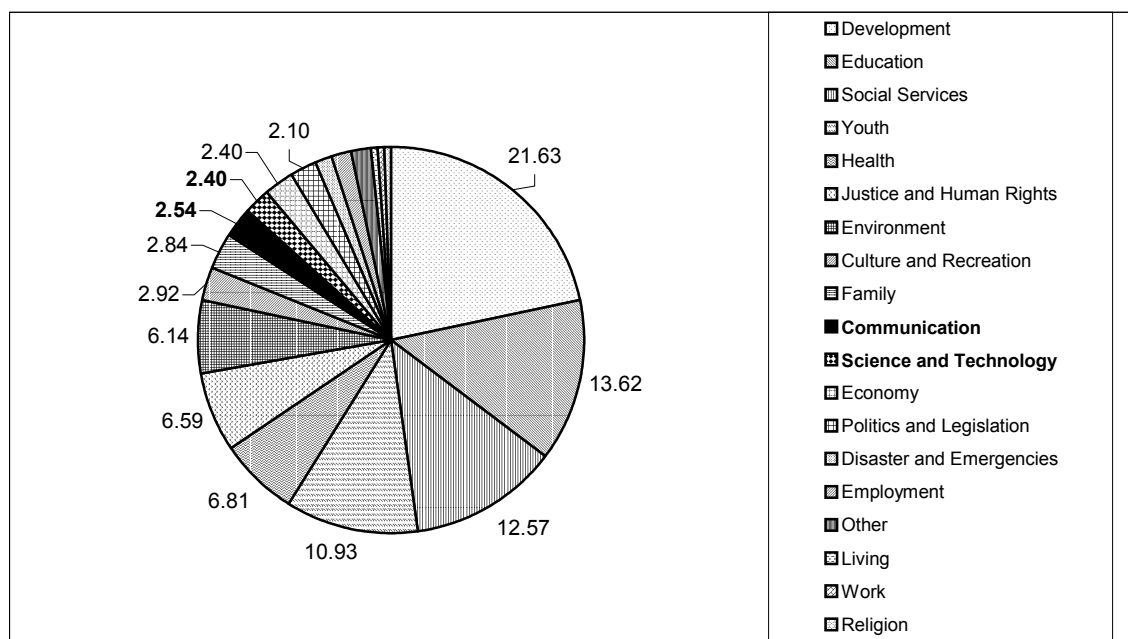
Note: * 2000; ** 2002

Conclusion: In some countries female participation in scientific research activities is almost reaching equity, while others still lag behind.

Challenge: *Emphasize the enrollment of women in technological and scientific areas at university levels, especially in post-graduate studies leading to research work.*

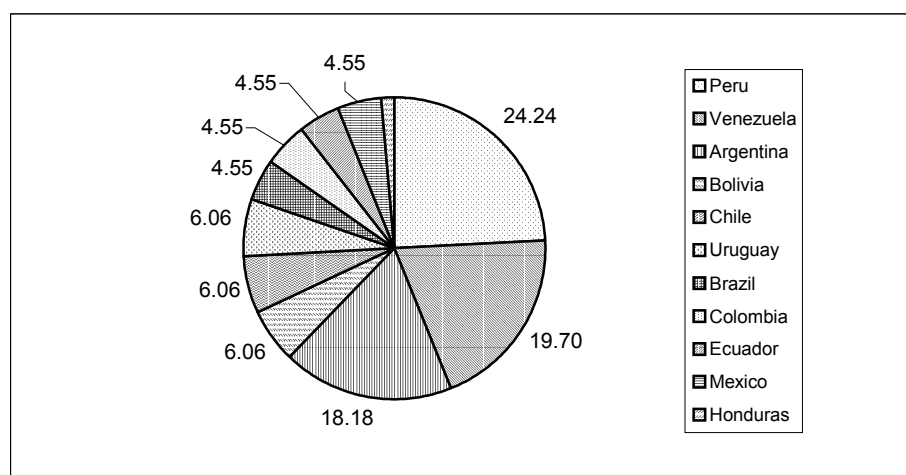
WSIS: “11 o) Volunteering, if conducted in harmony with national policies and local cultures, can be a valuable asset for raising human capacity to make productive use of ICT tools and build a more inclusive Information Society. Activate volunteer programmes to provide capacity building on ICT for development, particularly in developing countries.”

FIGURE 28
VOLUNTEERS' FIELD OF ACTION IN LATIN AMERICAN VOLUNTEERING
ORGANIZATIONS (N = 1336 ORGANIZATIONS)
(Percentage) (2003)



Source: own calculations, based on Interamerican Development Bank (IDB), Primer Directorio de Organizaciones de América Latina y el Caribe, 2004, www.iadb.org/etica/SP4321/DocHit.cfm?DocIndex=1938

FIGURE 29
LATIN AMERICAN ORGANIZATIONS IN SCIENCE, TECHNOLOGY, AND
COMMUNICATIONS WORKING WITH VOLUNTEERS (N = 66 ORGANIZATIONS)
(Percentage) (2003)



Source: own calculations, based on Interamerican Development Bank (IDB), Primer Directorio de Organizaciones de América Latina y el Caribe, 2004, www.iadb.org/etica/SP4321/DocHit.cfm?DocIndex=1939

Conclusion: In Latin America around 1.5 % of the population is working for nonprofit volunteering organizations (Colombia: 2.35%, Argentina: 1.85%, Peru: 1.12%, Brazil: 0.87%, Mexico: 0.52). In the field of science, technology and communications volunteering work is very low. Most organizations in these fields can be found in Peru, Venezuela and Argentina.

Challenge: *Maintream ICT projects into volunteering work, where valuable contributions can be made in all aspects of Information Society development.*

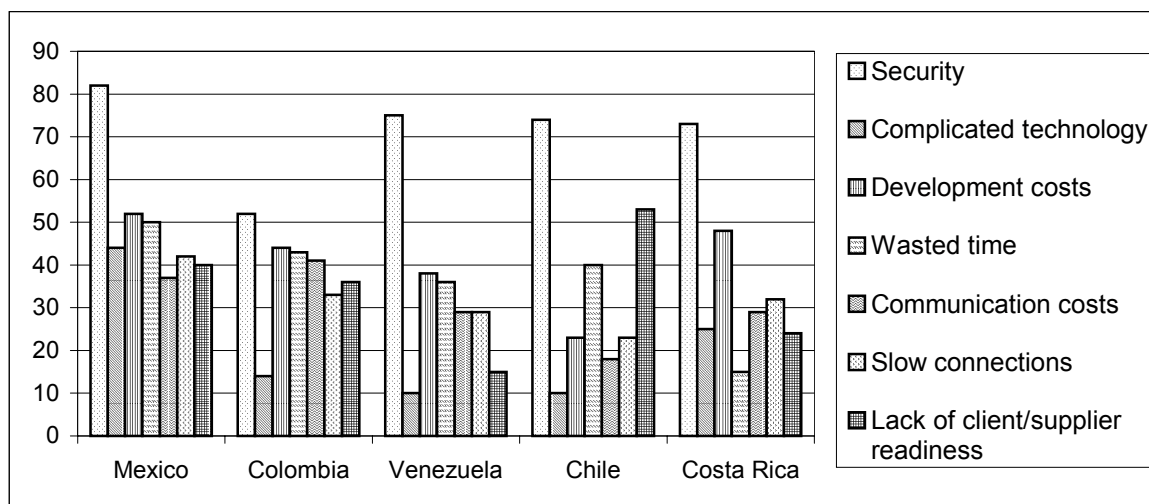
C5. Building confidence and security in the use of ICTs

WSIS: “12. Confidence and security are among the main pillars of the Information Society.

WSIS: 12 a) Promote cooperation among the governments at the United Nations and with all stakeholders at other appropriate fora to enhance user confidence, build trust, and protect both data and network integrity; consider existing and potential threats to ICTs; and address other information security and network security issues.”

WSIS: “12 j) Encourage interested countries to contribute actively to the ongoing United Nations activities to build confidence and security in the use of ICTs.”

FIGURE 30
BARRIERS TO INTERNET USE IN SMES (SMALL AND MEDIUM SIZED ENTERPRISES) BY COUNTRY
(Percentage) (2004)



Source: United Nations Conference for Trade and Development (UNCTAD). E-commerce and Development Report 2004.

TABLE 19
UNCITRAL MODEL LAW ON ELECTRONIC SIGNATURES
(2001)

Article 1. Sphere of application
Article 2. Definitions
Article 3. Equal treatment of signature technologies
Article 4. Interpretation
Article 5. Variation by agreement
Article 6. Compliance with a requirement for a signature
Article 7. Satisfaction of article 6
Article 8. Conduct of the signatory
Article 9. Conduct of the certification service provider
Article 10. Trustworthiness
Article 11. Conduct of the relying party

Source: UNCITRAL, United Nations Commission on International Trade Law.

Conclusion: The most relevant barrier to Internet usage among Latin American enterprises is related to security concerns. At several United Nations agencies and conferences, such as UNCITRAL and UNCTAD, efforts are being made towards a globally harmonized approach for creating confidence and security in the Information Society.

Challenge: *Support United Nations forums actively and assure meaningful participation of all stakeholders in these processes.*

WSIS: “12 b) Governments, in cooperation with the private sector, should prevent, detect and respond to cyber-crime and misuse of ICTs by: developing guidelines that take into account ongoing efforts in these areas; considering legislation that allows for effective investigation and prosecution of misuse; promoting effective mutual assistance efforts; strengthening institutional support at the international level for preventing, detecting and recovering from such incidents; and encouraging education and raising awareness.”

TABLE 20
LEGISLATION ON CYBER CRIME
(2005)

Country	Norm	Title	Year
Argentina	Anteproyecto de ley por resolución 476/2001	Damages to the informatic system	2001
Brazil	Projecto de lei 5460/01	Spreading of infantile and adolescent pornography in the internet	2001
Chile	Ley No. 19223	Damages to the informatic system	1993
Costa Rica	Ley No. 8148	Damages to the informatic system	2001
Ecuador	Ley No. 2002-67	Damages to the informatic system	2002
Guatemala	Decreto No. 17-73 del Código Penal	Damages to the informatic system	1973
Peru	Decreto Legislativo 681 modificado por la Ley 26612	Informatic delicts	1996
	Ley 27309	Law about informatic delicts	2000
Dom. Rep.	Pre-project	First draft of a law against high technology crimes and delicts	2004
Venezuela	Ley especial contra Delitos Informáticos	Informatic delicts	2001

Source: Alfa-Redi, Revista de Derecho Informático and ECLAC, 2005.

Conclusion: Various legislations regarding cyber-crime and misuse of ICT already exist in the region. International harmonization of legislation is essential in order to face the increasing challenges brought by the borderless nature of Internet content.

Challenge: *Dedicate more attention to the issue of appropriate usage of new tools by strengthening the implementation, extending the coverage and fostering the international harmonization of legislation.*

WSIS: “12 c) Governments, and other stakeholders, should actively promote user education and awareness about online privacy and the means of protecting privacy.”

WSIS: “12 f) Further strengthen the trust and security framework with complementary and mutually reinforcing initiatives in the fields of security in the use of ICTs, with initiatives or guidelines with respect to rights to privacy, data and consumer protection.”

WSIS: “13 i) Governments and stakeholders should actively promote user education and awareness about online privacy and the means of protecting privacy.”

TABLE 21
PROTECTION OF PRIVACY LEGISLATION
(2005)

Country	Norm	Title	Year
Argentina	Ley N°25326	Protection of private life, <i>habeas data</i>	2002
Brazil	Ley 9507	Regulates the right of information access and the procedure of the <i>habeas data</i>	1997
Chile	Ley N° 19628	About the protection of the privacy	1999
Ecuador	Ley Ecuatoriana sobre el Comercio Electrónico	Confidentiality and protection of personal data in messages	2002
	Ley Orgánica de Control Constitucional- Art.34,45	Enacts the official procedure to formulate the resource of <i>habeas data</i>	1997
Mexico	Propuesta de iniciativa de Ley Federal de Protección de Datos Personales	Protection of personal data, as well of the electronic type	2001
Pamana	Ley 6	Norms for transparency in public administration, establishment of actions of habes data	2002
Paraguay	Ley 1682	Regulation of orivate information	2000
Peru	Ley 27489	Law for regulation of private centrals for risk information and protection of information owner	201
	Ley N°28237	Constitutional procedural code realated to <i>habeas data</i>	2004
Uruguay	Ley 17838	Protection of personal data for commercial reports and <i>habeas data</i>	2004

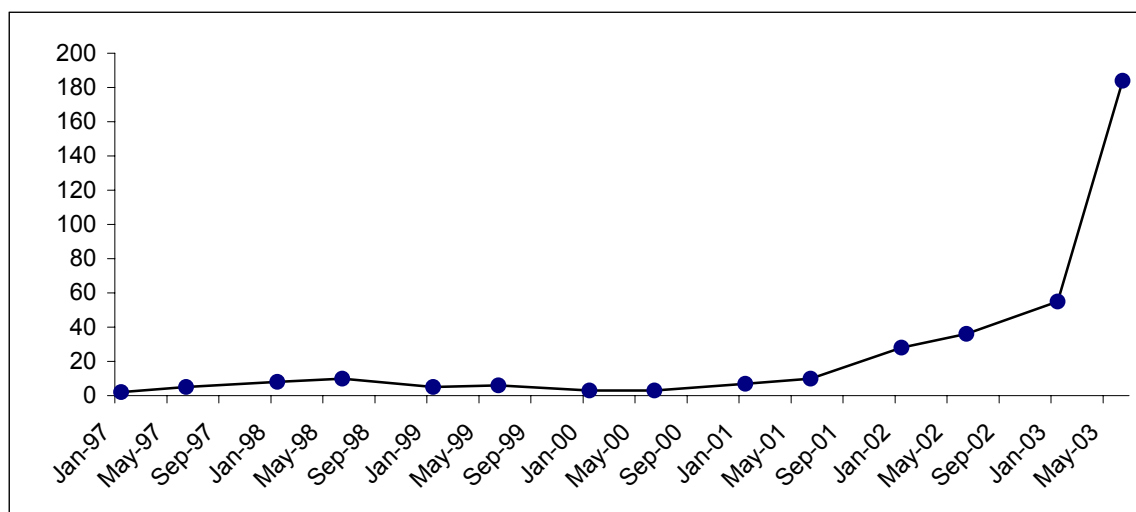
Source: Alfa-Redi, Revista de Derecho Informático and ECLAC, 2005.

Conclusion: Privacy is of utmost importance for the Information Society. The repressive and manipulative misuse of information and communication harming the user must be minimized. Some privacy legislation have been adopted for ICT usage during the last years.

Challenge: *Revise respective legislations constantly, considering technological progress and the possibilities of ICTs.*

WSIS: “12 d) Take appropriate action on spam at national and international levels.”

FIGURE 31
SPAM PER MONTH RECEIVED BY A USER, WHEN SPAM IS SENT TO MULTIPLE E-MAIL ADDRESSES
(1997-2003)



Source: www.raingod.com/angus/Computing/Internet/Spam/Statistics/, www.spamfilterreview.com/spam-statistics.html.

Note: The information of June 2003 is calculated by taking the monthly average of the total received Emails in the year by the user.

TABLE 22
GLOBAL STATISTICS ABOUT SPAM
(2002/2003)

Detail	Spam Filter (from several sources)	Metagroup	Houston Chronicle
Year of reference	2003	2002	2002 (Hotmail)
Email considered Spam	40% of all email	25%	80%
Daily Spam emails sent	12.4 billion	n.f.	2 billion
Daily Spam received per person	6	n.f.	n.f.
Annual Spam received per person	2,200	n.f.	n.f.
Corporate email that is considered Spam	15-20% (US)	2-10% (Germany)	n.f.

Source: Spam Filter: www.spamfilterreview.com/spam-statistics.html, Metagroup and Houston Chronicle, in: www.clearswift.com, 2004

Conclusion: Spam, the reception of unsolicited emails from unknown sources, has been increasing explosively over recent months. On average, an email user received approximately 200 unsolicited mass-emails per month in 2003. On a global scale, it is estimated that approximately 40 % of all Emails are spam, with some cases reaching 80%, in the case of the “Hotmail” Email provider, for example.

Challenge: *The global regulation of Spam will be an important test bed for any renewed form of Internet governance.*

WSIS: “12 e) Encourage the domestic assessment of national law with a view to overcoming any obstacles to the effective use of electronic documents and transactions including electronic means of authentication.

TABLE 23
LEGISLATION ON ELECTRONIC DOCUMENTS AND TRANSACTIONS
(2005)

Country	Norm	Title
Argentina	Ley N°24624(art.30)	Issue of juridical originality of digital documents
Barbados	Chapter 308B	Electronic Transaction Act
Belize	Chapter 290:01	Electronic Transaction Act
Brazil	Ley N°10.406,	Existence and validity of electronic documents
Chile	Decreto Supremo 81	Regulates the use of digital signatures and the use of electronic documents in the Administration of the State
Colombia	Decreto 2150	Article 26: Utilization of the electronic systems of archives and the transmission of documents.
	Ley 527	Issue full juridical protection for electronic messages, provided that they have the same legal validity as paper documents.
Ecuador	Ley 2002-67	Law of electronic commerce, electronic signatures and data messages
Panama	Ley 43	Regulates electronic documents and signatures, entities of electronic commerce and exchange of electronic documents
Peru	Ley 24719	Law that regulates the codes of the "Código de Procedimientos Civiles" for permitting the notification via electronic medias
	Ley 28186	Law that establishes the reaches of the "Decreto Legislativo N° 681". It regulates the use of advanced technologies in the matter of document file and information.
	Ley N° 26887	"Ley general de Sociedades Peruana". It regulates the tributary informatic notifications.
	Ley N°27038	Law that modifies the "Decreto Legislativo N°816". It concedes "Sunat and Aduanas", and "Tribunal Fiscal", the transfer of paper to technical support
Venezuela	Decreto N° 1.204 de	"Ley de Mensajes de Datos y Firmas Electrónicas"
Uruguay	Acordata 7401/00	Informatic system of automatization of the judicial files
	Decreto 83/001	Determination of the technical means of telematic storage, reproduction and transmission of the documento. Present situation of the Information Technologies storage and its relation with the reality and perspective of the Public Administración.
	Ley 16.002	It approves the digressions 02 through 13 of the modifications of the public investment plan for the period 1988-1989. Art.129 and 130

Source: Alfa-Redi, Revista de Derecho Informático and ECLAC, 2005.

Conclusion: Legislation on electronic documents is the basis for the digitization of information in many sectors, including juridical work, health and public administration.

Challenge: *Cooperate on the harmonization of electronic signatures legislations and exchange experiences in order to facilitate cross-boarder information exchange.*

WSIS: “12 i) Encourage further development of secure and reliable applications to facilitate online transactions.”

WSIS: “13 j) Invite stakeholders to ensure that practices designed to facilitate electronic commerce also permit consumers to have a choice as to whether or not to use electronic communication.”

TABLE 24
LEGISLATION ON ELECTRONIC COMMERCE
(2005)

Country	Norm	Title	Year
Colombia	Ley N° 527	Law of electronic commerce	1999
Dom. Rep.	Ley No. 126-02, Dec. No. 335-03	Law on electronic commerce, digital documents and signatures	2002
Ecuador	Ley N°2002-67	Law of electronic commerce, electronic signatures and data messages	2002
Ecuador	Decreto Ejecutivo N°3496	General Regulation for Law on electronic commerce, electronic signatures and data messages	2002
International		UNCITRAL Model Law	1996
Panama	Ley N°43	Law on electronic commerce	n.f.

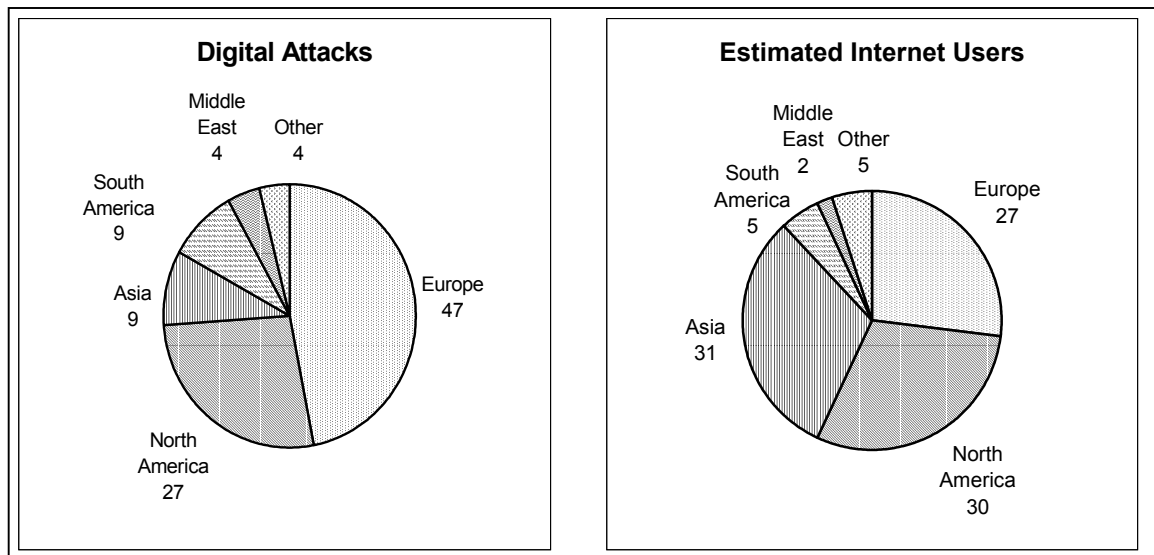
Source: Alfa-Redi, Revista de Derecho Informático and ECLAC, 2005.

Conclusion: Legislation on electronic commerce is often a general framework, including legislation on electronic documents, transactions, digital and electronic signatures and data messages. UNCITRAL Model Law is being used as an international reference in this field.

Challenge: *Strengthen the implementation of legislation related to electronic commerce, in order to overcome one of the most severe barriers to flourishing business transactions: the lack of trust and confidence.*

WSIS: “12 g) Share good practices in the field of information security and network security and encourage their use by all parties concerned.”

FIGURE 32
DIGITAL ATTACKS VS. ESTIMATED INTERNET USERS PER REGION
(Percentage) (2003)



Source: Mig2g, www.mig2g.com; International Telecommunication Union, ITU, 2004.

Note: mig2g defines an overt digital attack as being an incident when a hacker group has gained unauthorized access to a computer network and has made modifications to any of its publicly visible components (such as a broadcast, service routine, payment / data collection or print out).

TABLE 25
LEGISLATION ON DIGITAL/ELECTRONIC SIGNATURE
(2005)

Country	Norm	Title	Year
Argentina	Decreto N°427	Approves infrastructure of the digital signature for the national public sector and it compares the effects of a digital signature to the one of a normal signature	1998
	Ley N° 25506	Law of digital signature	2001
Barbados	Chapter 308 B	Electronic Transaction Act	2001
Brazil	Medida Provisória No. 2.200/01	Establishes infrastructure for Brazilian public keys – ICP Brazil, transforms the National Institute of Information Technology in autarchy and approves other steps	2001
	Decreto 3587	Public keys for executive power of federal State	2000
Chile	Ley N°19.799	About electronic documents, electronic signatures and certification services	2002
Colombia	Ley No. 527	Defines and regulates access and use of messages about data, of electronic commerce and digital signatures, it establishes the certification entities, and it enacts other dispositions	1999
Ecuador	Ley N°2002-67	Law of electronic commerce, electronic signatures, and messages containing data	2002
Mexico		Initiative of reforms and additions to the code of commerce concerning electronic signature	1905
Panama	Ley No. 43	Regulates electronic documents and signatures and the entities of the certification in electronic commerce, and the interchange of electronic documents	2001
Paraguay	Decreto Reglamentario N°21	Establishes the regulation of law 2051	2003
Peru	Ley 27269	Approves the law of digital signatures and certificates	2000
	Ley 27310	Modification of the law for electronic signature	2000
Uruguay	Ley N°16.713	National budget, art. 694, 695, 696, 697, 698	1996
	Ley N°17.243	About the informatic system of the state, the electronic dossier and the electronic and digital signature	n.f.
Venezuela	Decreto Ley No. 1.204	Law about data containing messages and digital signatures	2001

Source: Alfa-Redi, Revista de Derecho Informático and ECLAC, 2005.

Conclusion: South America represents 5% of world Internet users and 9% of digital attacks. Among other measures, digital signature laws are an important step to ensure secure and reliable online transactions. In many countries in the region such legislation has been set up. Significant differences exist however between legislations in different countries.

Challenge: *To raise the importance of security issues and to promote public prevention policies based on adequate technical solutions. Cooperate on the harmonization of electronic signatures legislations. Foster their user-friendly application.*

C6. Enabling environment

WSIS: “13. To maximize the social, economic and environmental benefits of the Information Society, governments need to create a trustworthy, transparent and non-discriminatory legal, regulatory and policy environment. [...]’

WSIS: “13 a) Governments should foster a supportive, transparent, pro-competitive and predictable policy, legal and regulatory framework, which provides the appropriate incentives to investment and community development in the Information Society.”

TABLE 26
TELECOMMUNICATION REGULATORS OF REGULATEL

Country	Regulatory agency	Type of organism	Nature	Year of creation	Number of employees	Made up of a collegiate group	Independent budget	FUNCTIONS										
								Policies	grant licenses	Technical plans	Management	Regulation	Control and monitoring	User protection	International	Defense of fair competition	Autonomy	Radio broadcasting
Argentina	Comisión Nacional de Comunicaciones (CNC)	Commission	Decentralized organism that depends on the Ministry of Communications.	1996	-	yes	yes	-	-	-	yes	-	yes	-		yes	-	yes
Bolivia	Superintendencia de Telecomunicaciones (YESTTEL)	Superintendence	Independent and autarkic regulating organization in charge to regulate all the services and activities of telecom	1994	77	no	yes	-	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes
Brazil	Agencia Nacional de Telecomunicaciones (ANATEL)	Others	Independent and autonomous regulating organization, with administrative and financial autonomy, mandates and labor stability for its board, legal status as special organism, under the authority of the Head of the State.	1997	1262	yes	yes	-	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes
Colombia	Comisión de Regulación de Telecomunicaciones (CRT)	Commission	Special administrative unit, with administrative, technical and patrimonial autonomy, assigned to the Ministry of Communications	1994	46	yes	yes	-	-	yes	-	yes	-	-	-	-	yes	-
Costa Rica	Autoridad Reguladora de los Servicios Públicos (ARESEP)	Others	Independent institution, whose independence is guaranteed by the Political Constitution	1928	140	yes	yes	-	-	-	-	yes	yes	yes	-	-	yes	-
Cuba	Órgano Regulador de los Servicios Públicos de Telecomunicaciones, Postales e Informática - MIC	Ministry	Central Administration Organism of the State with functions of Strategy, Policy and Regulation	2000	252	no	-	yes	yes	yes	yes	yes	yes	yes	yes	-	-	yes
Chile	Subsecretaría de Telecomunicaciones (SUBTEL)	Ministry	Specialized technical organism, dependent of the Ministry of Transports and Telecom.	1977	225	no	-	yes	yes	yes	yes	yes	yes	yes	yes	-	-	yes
Ecuador	Consejo Nacional de Telecomunicaciones (CONATEL)	Council	Independent state organism. Representation of the State to exert the functions of administration and regulation of the services of telecom	1995	209	yes	yes	yes	yes	-	yes	yes	-	yes	yes	yes	yes	-
El Salvador	Superintendencia General de Electricidad y Telecomunicaciones (YESGET)	Superintendence	Public service independent non for profit institution	1996	61	-	yes	-	yes	yes	yes	yes	yes	yes	yes	yes	yes	-

<i>(continuation Table 26)</i>																	
Guatemala	Superintendencia de Telecomunicaciones de Guatemala (YEST)	Superintendence	Technical organism with functional independence for the exercise of its attributions and functions	1996	-	yes	yes	-	yes	yes	yes	yes	yes	-	yes	-	yes
Honduras	Comisión Nacional de Telecomunicaciones (CONATEL)	Commission	Dispersed organism assigned to the Secretariat of State in the Office of Finances, with technical, administrative and budgetary independence	1995	72	yes	no	-	yes	yes	yes	yes	yes	yes	yes	yes	yes
Mexico	Comisión Federal de Telecomunicaciones (COFETEL)	Commission	Dispersed organ of the Secretariat of Communications and Transports (SCT), equipped with technical and operative autonomy	1996	476	yes	yes	-	-	yes	yes	yes	yes	-	-	-	yes
Nicaragua	Instituto Nicaraguense de Telecomunicaciones y Correos (TELCOR)	Institute	Decentralized organ of the Government, with legal personality of undefined duration and own wealth, with capacity to acquire rights and to contract obligations	1982	114	no	yes	-	yes	yes	yes	yes	yes	yes	yes	-	yes
Panama	Ente Regulador de los Servicios Públicos (ERSP)	Others	Autonomous organism, with juridical personality and a budget that is separated and independent from the centralized government's budget.	1996	-	yes	yes	-	yes	yes	yes	yes	yes	yes	yes	yes	yes
Paraguay	Comisión Nacional de Telecomunicaciones (CONATEL)	Commission	Autarkic entity with juridical personality, in charge of the regulation of the national telecom, under an integrated policy framework among services, providers, users, technology and industry.	1995	-	yes	yes	-	yes	yes	yes	yes	yes	yes	-	yes	yes
Peru	Organismo Supervisor de Inversión Privada en Telecom. (OYESPTTEL)	Others	Organism with technical, economic, financial, functional and administrative autonomy	1991	141	yes	yes	-	-	-	-	yes	-	yes	-	yes	yes
Dom. Republic	Instituto Dominicano de las Telecomunicaciones (INDOTEL)	Institute	Decentralized state organization and with functional, jurisdictional and financial autonomy, with own resources and legal personality	1998	272	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes
Uruguay	Unidad Reguladora de Servicios de Comunicaciones (URSEC)	Others	Dispersed organ of the Executive authority with technical independence. For postal communications it acts under the guidance of the Ministry of Education and Culture and for the related to telecom, under the guidance of the Ministry of National Defense	2001	99	yes	-	-	yes	yes	yes	yes	yes	yes	yes	yes	-
Venezuela	Comisión Nacional de Telecomunicaciones (CONATEL)	Commission	Independent institute, with juridical personality, own and independent resources of the National State treasury and technical, financial, organizational, normative and administrative autonomy.	1991	459	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes

Source: Reguladores de Telecomunicaciones en América Latina, Regulatel. Cuzco, Noviembre 2004.

Conclusion: While the region has been a worldwide pioneer in telecommunications privatizations, telecommunications regulatory authorities are essential to assure an efficient, competitive and growing telecommunications sector.

Challenge: *Support regional networks among telecommunications agencies, such as REGULATEL and CITELE, in order to foster knowledge exchange and to develop common regulatory frameworks and measures for the benefit of the entire sector on a regional level.*

WSIS: “13 b) We ask the Secretary General of the United Nations to set up a working group on Internet governance [...] The group should, inter alia [...] develop a common understanding of the respective roles and responsibilities of governments, existing intergovernmental and international organisations and other forums as well as the private sector and civil society from both developing and developed countries;”

WSIS: “13 c ii) Governments are invited to [...] manage or supervise, as appropriate, their respective country code top-level domain name (ccTLD);”

TABLE 27
NIC (NATIONAL INFORMATION CENTERS) IN LATIN AMERICA AND THE CARIBBEAN
(2005)

Abbreviation	Name	Leading Authorities	Link	Characterization
.ar (Argentina)	NIC Argentina	Foreign Affairs and International Trade Ministry	www.nic.ar	Government
.bb (Barbados)	NIC Barbados	Cable & Wireless Ltd.	www.domains.org.bb/	Private Company
.bo (Bolivia)	NIC Bolivia	Agency for the Development of the Information Society in Bolivia (ADSIB) - independent organization under the supervision of Vice-president of the Republic	www.nic.bo/	Government, in cooperation
.br (Brazil)	Brazilian Network Information Center	Internet Management Committee of Brazil (Communications Ministry in cooperation with Science and Technology Ministry)	www.nic.br/	Government in cooperation
.bs (Bahamas)	Bahamas Network Info. Center (BSNIC)	The College of The Bahamas	www.nic.bs/	Academic institution
.bz (Belize)	Belize Network Information Center	University Management Ltd., Joint Venture between Datapro International Ltd. and the University of Belize	www.belizenic.bz/	Private Company + Academia
.cl (Chile)	NIC Chile	Universidad de Chile	www.nic.cl	Academic institution

(continuation Table 27)

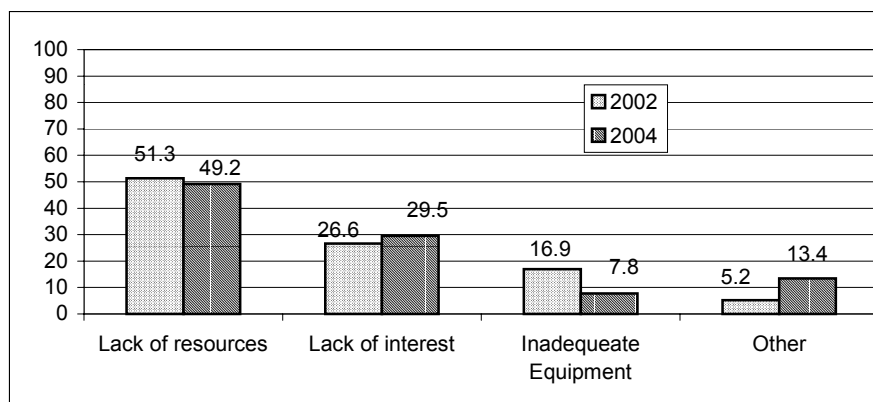
.co (Colombia)	NIC Colombia	Universidad de Los Andes	www.nic.co	Academic institution
.cr (Costa Rica)	NIC Costa Rica	National Sciences Academy (non governmental public law entity)	www.nic.cr	Academic institution
.cu (Cuba)	NIC Cuba	CITMATEL (company belonging to the Sciences, Technology and Environment Ministry)	www.nic.cu	Government
.do (Dominican Republic)	NIC Dominican Republic	Pontificia Universidad Católica Madre y Maestra	www.nic.do	Academic institution
.ec (Ecuador)	NIC Ecuador	NIC.ec S.A.	www.nic.ec	Private Company
.sv (El Salvador)	NIC El Salvador	National Council for Science and Technology (CONACYT)	www.svnet.org.s	Government in cooperation
.gt (Guatemala)	NIC Guatemala	Universidad del Valle de Guatemala	www.gt	Academic institution
.mx (Mexico)	NIC Mexico	ITESM, Monterrey Campus	www.nic.mx	Academic institution
.pa (Panama)	NIC Panama	Universidad Tecnológica de Panamá	www.nic.pa	Academic institution
.py (Paraguay)	NIC Paraguay	Laboratorio de Electrónica Digital (LED) of the Universidad Católica de Asunción and Centro Nacional de Computación (CNC) of the Universidad Nacional de Asunción	www.nic.py	Academic institution
.tt (Trinidad & Tobago)	T&T Network Information Center	TTNic	www.nic.tt	Private Company
.vz (Venezuela)	NIC Venezuela	Centro Nacional de Tecnologías de Información (CNTI)	www.nic.ve	Non Governmental Organization

Conclusion: A single model of domain registration does not exist within the region.

Challenge: *Intensify the discussion about multilateral, transparent and democratic Internet governance, with the full involvement of governments, the private sector, civil society and international organizations.*

WSIS: “13 c iii) Governments are invited to [...] promote awareness of the Internet”

FIGURE 33
MAIN REASONS FOR NOT HAVING INTERNET ACCESS IN MEXICAN HOUSEHOLDS
(Percentage) (2002 – 2004)



Source: INEGI. Encuesta sobre Disponibilidad y Uso de Tecnología de Información en los Hogares 2002, INEGI. Encuesta Nacional sobre Disponibilidad y Uso de las Tecnologías de la Información en los Hogares 2004, www.inegi.gob.mx/est/contenidos/espanol/tematicos/mediano/med.asp?t=tinf203&c=5578.

Note: 2004 data are preliminar.

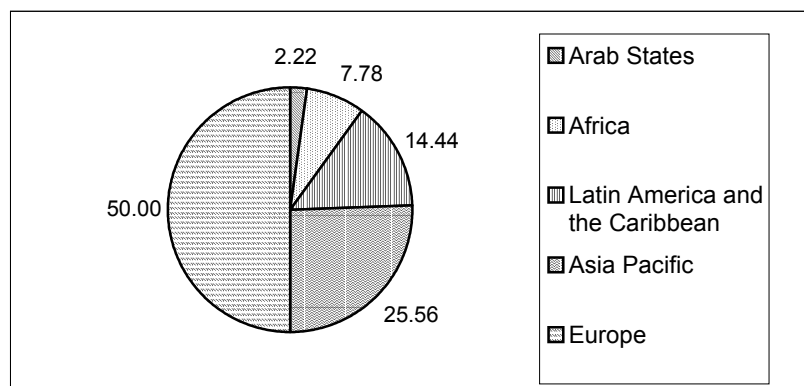
Conclusion: Besides the lack of resources, a growing lack of interest is affecting the penetration of Internet in households as the technology starts to penetrate markets where customers are not technically minded.

Challenge: *Increase efforts to demonstrate the usefulness and efficiency of ICT applications.*

WSIS: “13 h) Develop a framework for the secure storage and archival of documents and other electronic records of information.”

WSIS: “23 c) Support efforts to develop and use ICTs for the preservation of natural and, cultural heritage, keeping it accessible as a living part of today’s culture. This includes developing systems for ensuring continued access to archived digital information and multimedia content in digital repositories, and support archives, cultural collections and libraries as the memory of humankind.”

FIGURE 34
SHARE OF PUBLICATIONS INCLUDED IN THE LIST OF THE MEMORY OF THE WORLD
REGISTER OF UNESCO, BY REGION
(Percentage) (2005)

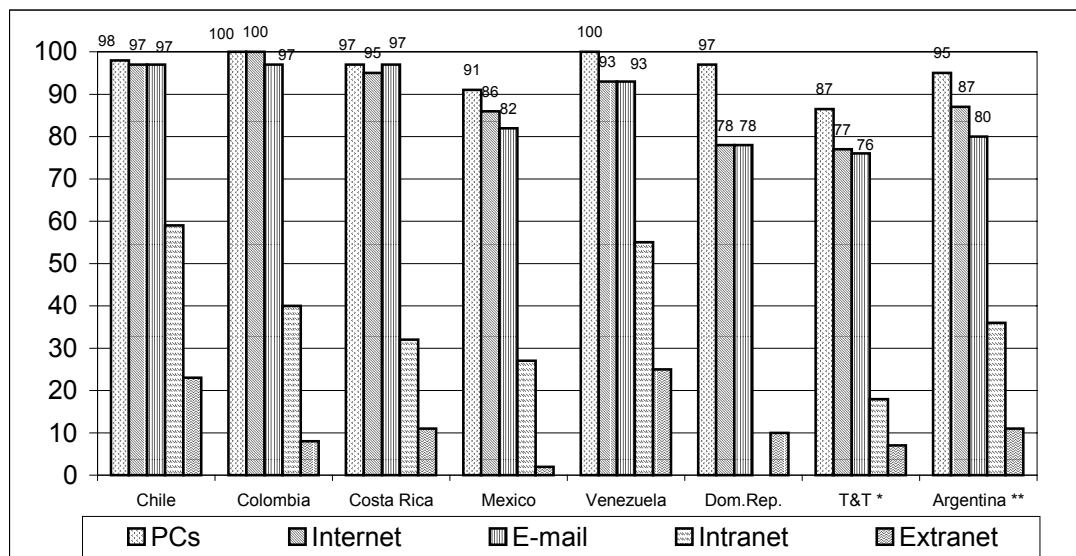


Source: United Nations Educational, Scientific and Cultural Organization (UNESCO), portal.unesco.org/ci/en/ev.php-URL_ID=1538&URL_DO=DO_TOPIC&URL_SECTION=201.html.

Note: The Memory of the World Program, launched by UNESCO in 1992, is an international institution, safeguarding the documentary heritage. It simplifies its access, augments conscience about the heritage's significance and distributes derivatives of the documents in a great scale. The program includes the creation of national and regional committees which identify documentary collections of worldwide, regional, national, and local significance to be included in the Memory of the World Register. The committees facilitate the documents' preservation and access through convenient medias. The program involves the digitalization and microfilming of heritage collections.

WSIS: “13 m) Recognising the economic potential of ICTs for Small and Medium-Sized Enterprises (SMEs), they should be assisted in increasing their competitiveness by streamlining administrative procedures, facilitating their access to capital and enhancing their capacity to participate in ICT-related projects.”

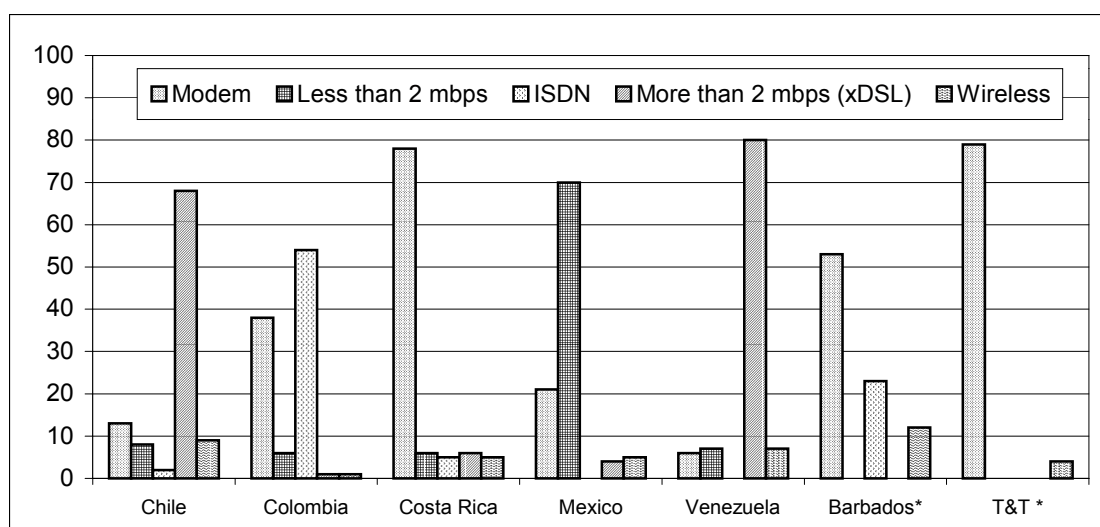
FIGURE 35
SMES WITH ICT EQUIPMENT
(Percentage) (2004)



Source: Chile, Colombia, Costa Rica, Mexico, Venezuela from UNCTAD. E-commerce and Development Report 2004; Rest own calculations, based on: RepDom: Harvard University. La República Dominicana. Preparación para el mundo interconectado. 2004; T&T: NECS. E-commerce usage and awareness among Businesses. 2003; Argentina: INDEC. Segunda Encuesta Nacional de innovación y conducta tecnológica de las empresas Argentinas. 2001.

Note: * 2003; ** 2001.

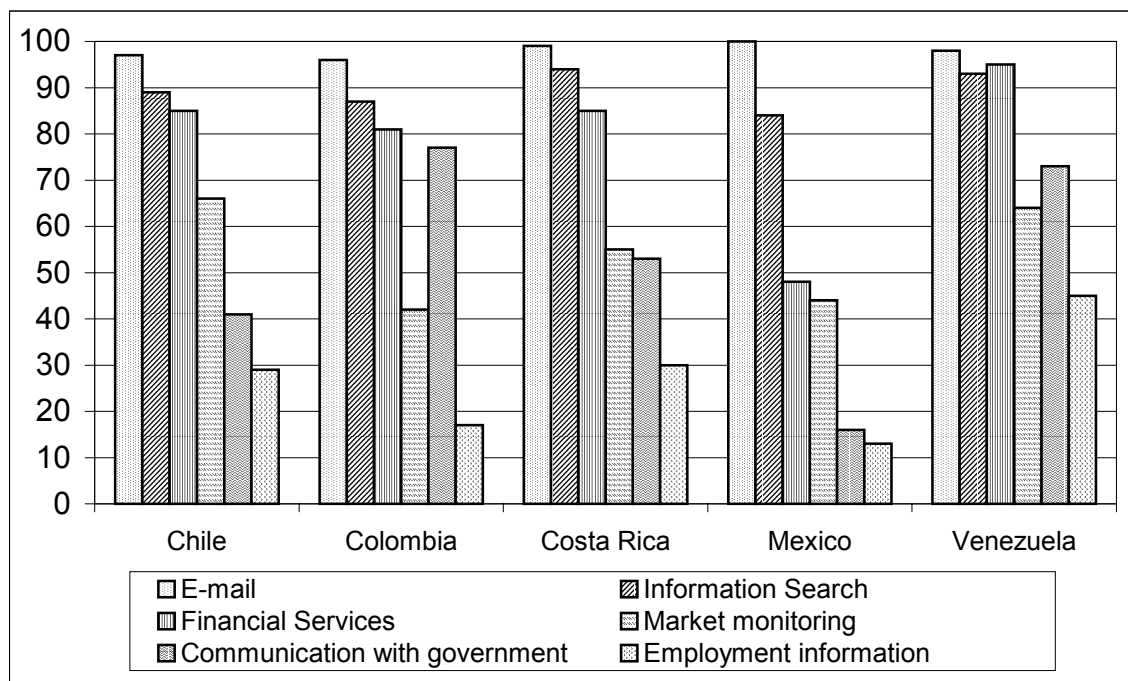
FIGURE 36
SMES BY CONNECTION TYPE
(Percentage) (2004)



Source: Chile, Colombia, Costa Rica, Mexico, Venezuela: United Nations Conference on Trade and Development (UNCTAD). E-commerce and Development Report 2004. Rest own calculations, based on: Barbados: NCST: e-readiness assessment study, 2003; Trinidad and Tobago: NECS: "E-commerce usage and awareness among Businesses, 2003.

Note: * 2003. Barbados data is for small, medium and large enterprises

FIGURE 37
SMES BY INTERNET USAGE
(Percentage) (2004)



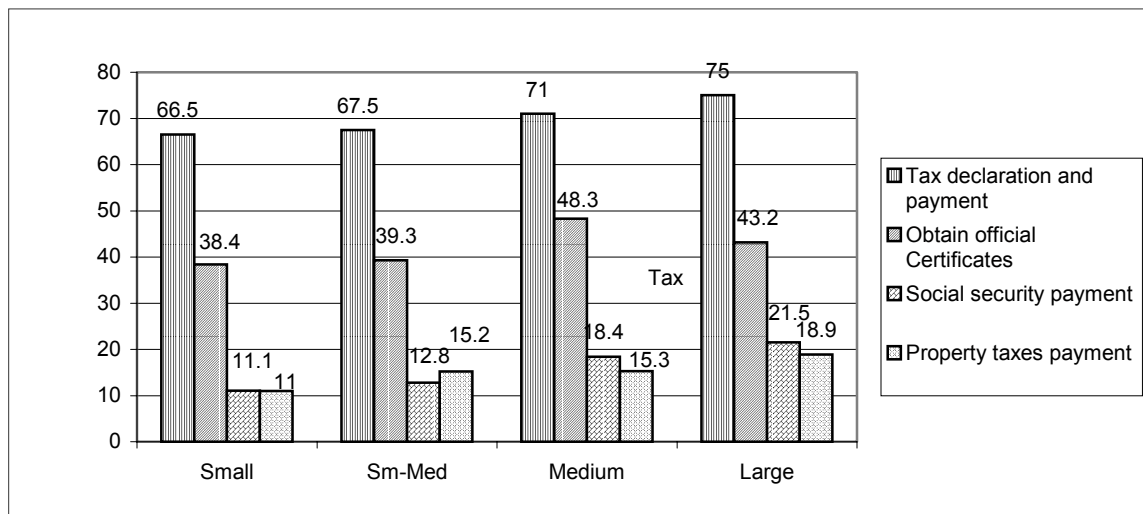
Source: United Nations Conference on Trade and Development (UNCTAD). E-commerce and development report 2004.

Conclusion: PC and Internet penetration is over 80 % among Latin American SMEs. More sophisticated networks, like Intranets and Extranets, which are often enablers for secure e-business practices and e-commerce transactions are scarce. However, besides Chile and Venezuela, most SMEs have a narrowband connection with less than 2 MB. As a result, mostly “soft usage” prevails, such as Email and Information search. Banking and financial services however are applications already in use by 80 % of SMEs.

Challenge: *Create incentive systems and favorable regulatory conditions to facilitate SMEs progress from ICT access to productive usage. Evaluate how to make the best use of financial and banking online service systems in order to promote the usage of other online services.*

WSIS: “13 n) Governments should act as model users and early adopters of e-commerce in accordance with their level of socio-economic development.”

FIGURE 38
MAIN INTERNET ACTIVITIES BY ENTERPRISES WITH THE CHILEAN GOVERNMENT
(Percentage) (2001)



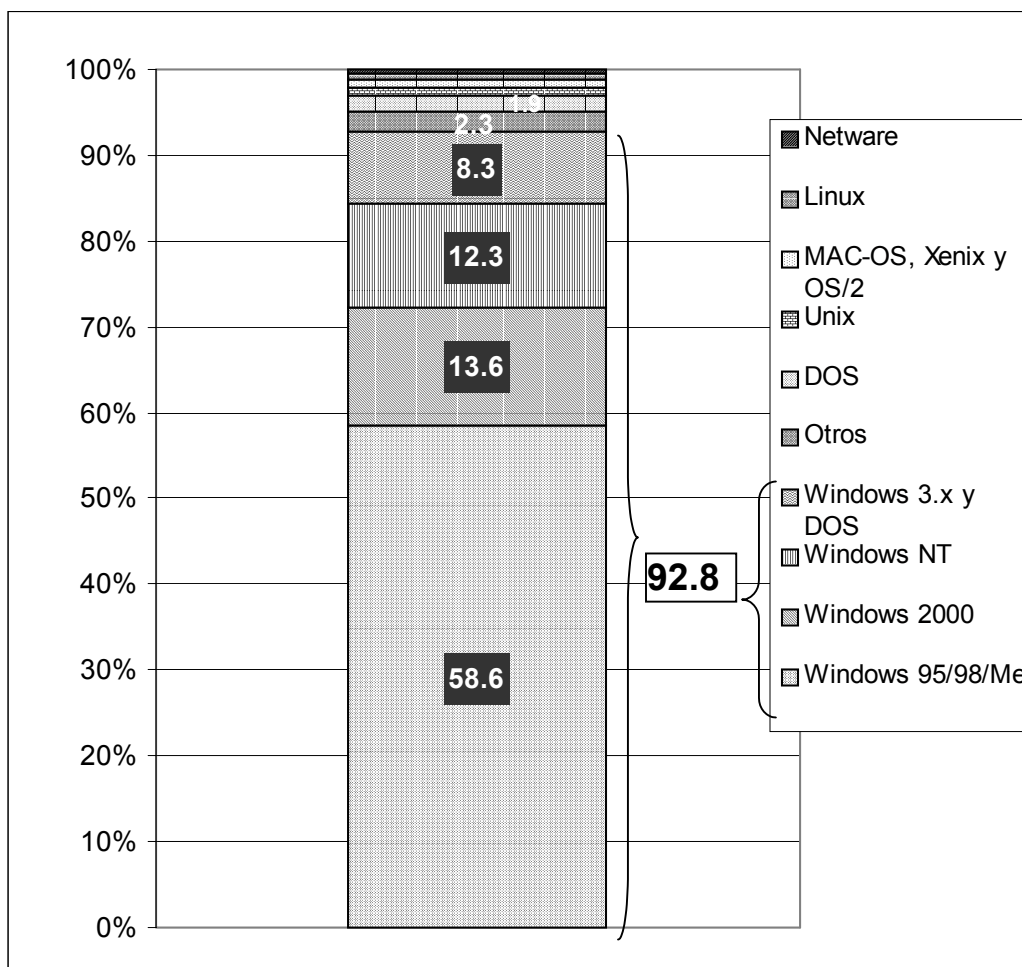
Source: Encuesta de "Medición de las TIC" para el sector industrial manufacturero, el sector comercio y el sector servicios, June 2001. Subsecretaría de Economía, Gobierno de Chile.

Conclusion: Governments can play a key-catalyzing role in inducing small and medium-sized enterprises to look into and to adopt new ways of doing business.

Challenge: *The economically relevant position governments have with regards to many services, should be used to familiarize enterprises with the new tools, leading them to do their first online transactions. This can lead to a virtuous circle of e-commerce transactions, also among private companies.*

WSIS: "13 p) Governments, in cooperation with other stakeholders, should promote the development and use of open, interoperable, non-discriminatory and demand-driven standards."

FIGURE 39
COMPUTERS OPERATIVE SYSTEMS USED IN THE GOVERNMENT SECTOR IN
COLOMBIA
(Percentage) (2001)



Source: DANE. Information and Communications technologies Measurement - TIC. Government Sector, 2001.

Conclusion: The market for operating systems in the public sector is dominated by proprietary software of one company.

Challenge: *Make sure that countries are neither locked out of global trends nor locked in particular technological solutions. Consideration should be given to open source standards, services and models, which can be employed as public goods in the public sector.*

C7. ICT applications: benefits in all aspects of life

WSIS: “14. ICT applications can support sustainable development, in the fields of public administration, business, education and training, health, employment, environment, agriculture and science within the framework of national e-strategies. This would include actions within the following sectors:

15. E-government

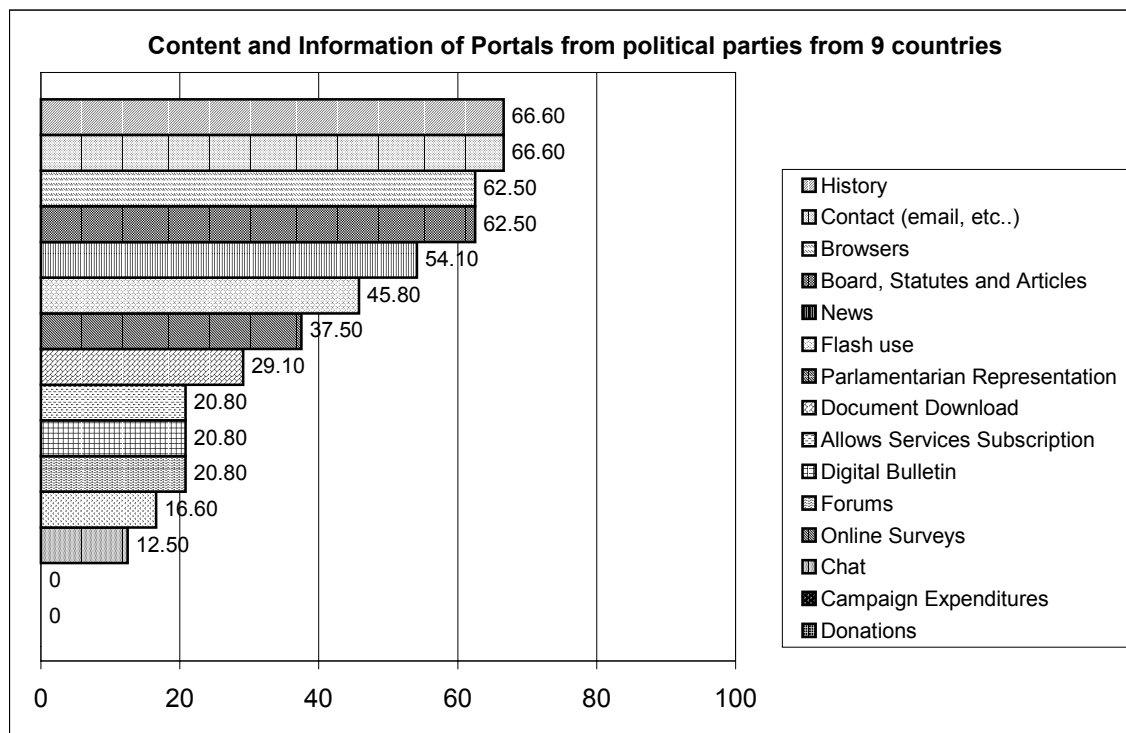
WSIS: 15 a) Implement e-government strategies focusing on applications aimed at innovating and promoting transparency in public administrations and democratic processes, improving efficiency and strengthening relations with citizens.”

WSIS: “13 g) Governments need to formulate national strategies, which include e-government strategies, to make public administration more transparent, efficient and democratic.”

TABLE 28
GOVERNMENT E-PROCUREMENT AND PUBLIC TENDERS
(2004)

Country	URL	Denomination	Authority	Date
Argentina	www.transparencia.mecon.gov.ar	Oficina Nacional de Contrataciones	Subsecretaría de Presupuesto de la Secretaría de Hacienda del Ministerio de Economía de Argentina.	2000
Bolivia	www.sicoes.gov.bo	Sistema de Información de Contrataciones Estatales, SICOES	Ministerio de Hacienda	2001
Brazil	www.comprasnet.gov.br	Sistema Integrado de Administración de Servicios Generales, SIASG, Comprasnet	Ministério do Planejamento, Orçamento e Gestão (MPOG)	1997
Chile	www.compraschile.cl	Sistema de Información para Compras y Contrataciones del Sector Público. Chilecompra	Ministerio de Hacienda	2000
Colombia	www.contratos.gov.co	Portal de Contratación del Estado Colombiano	Contraloría General de la República	2002
Costa Rica	www.hacienda.go.cr/comprared/index.asp	CompraRED, Sistema Electrónico de Contrataciones Gubernamentales	Ministerio de Hacienda	2001
Mexico	www.compranet.gob.mx	Sistema Electrónico de Contrataciones Gubernamentales, Compranet.	Secretaría de la Función Pública (Secretaría de Contraloría y Desarrollo Adm. - SECODAM)	1998
Peru	www.contraloria.gob.pe	Compras del Estado, Contraloría General	Contraloría General de Perú	2002
Uruguay	www.comprasestatales.gub.uy	Programa de Modernización de las Compras y Contrataciones Estatales del Uruguay		2002

FIGURE 40
INFORMATION INCLUDED IN THE ON-LINE POLITICAL PARTIES PORTALS
(N=24 LEADING POLITICAL PARTIES FROM 9 COUNTRIES)
(Percentage) (2004)



Source: own calculations, based on “Base de datos Políticos de las Américas”, www.georgetown.edu/pdba

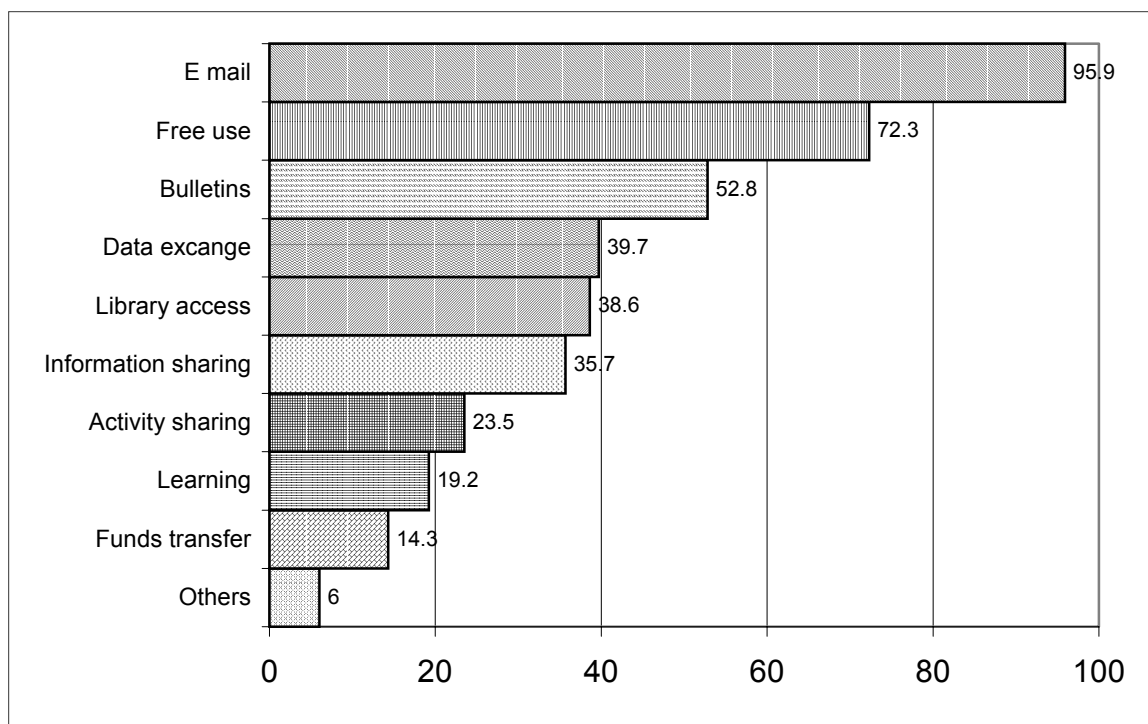
Note: The sample includes the three strongest parties from last elections with more than 7 % of the total vote.: Bolivia: Movimiento Nacionalista Revolucionario, Movimiento al Socialismo, Nueva Fuerza Republicana; Colombia: Primero Colombia, Partido Liberal Colombiano; Costa Rica: Unidad Social Cristiana, Liberación Nacional, Acción Ciudadana; El Salvador: Alianza Republicana Nacionalista, Frente Morazanista para la Liberación Nacional; México: Partido de Acción Nacional, Partido Revolucionario Institucional, Alianza por México; Nicaragua: Partido Liberal Constitucional, Frente Sandinista de Liberación Nacional; Paraguay: Asociación Nacional Republicana, Partido Liberal Radical Auténtico, Movimiento Patria Querida; Perú: Perú Posible, Partido Aprista Peruano, Unidad Nacional; Dominican Republic: Partido de la Liberación Dominicana, Partido de la Revolución Dominicana, Partido Reformista Social Cristiano.

Conclusion: E-government applications show considerable progress in digitalizing public services and administrative processes, such as e-procurement applications. Nevertheless, the potential offered by ICT for increasing public transparency and democratic participation is not yet fully exploited. Political parties are increasingly starting to use ICT in order to facilitate public deliberations and opinion building. The interactive tools for the promotion of democratic processes are however largely unexploited, as only 12.5 % of the major political parties provide online chat applications to foster democratic deliberation.

Challenge: *To invest in areas that intensify citizens’ participation, including e-democracy.*

WSIS: “15 b) Develop national e-government initiatives and services, at all levels, adapted to the needs of citizens and business, to achieve a more efficient allocation of resources and public goods.”

FIGURE 41
ONLINE ACTIVITIES OF PUBLIC AUTHORITIES WITH INTERNET CONNECTION IN
COLOMBIA
(Percentage) (2001)



Source: DANE. Model for Measurement of ICTs– TIC 2001.

Conclusion: In order to benefit fully from e-government, government officials need to exploit the possibilities offered by the new tools. ICT “soft usage” prevails (email, surfing, data exchange). A more sophisticated and productive use of this technology exists but is limited (e-learning, on-line fund transferences and transactions).

Challenge: *Intensify ICT usage in governments, specially for more sophisticated applications (online transactions, e-learning, etc).*

WSIS: “15 c) Support international cooperation initiatives in the field of e-government, in order to enhance transparency, accountability and efficiency at all levels of government.”

TABLE 29
ONLINE-PRESENCE OF THE PUBLIC SECTOR
(2003-2004)

Country	Ranking 2004	Ranking 2003	Change
United States	1	1	0
U.K.	2	5	+3
Singapore	3	8	+5
Rep. of Korea	4	18	+14
Denmark	5	9	+4
Chile	6	2	-4
Canada	7	6	-1
Australia	8	3	-5
Finland	9	19	+10
Germany	10	11	+1
Mexico	11	4	-7
Sweden	12	10	-2
Belgium	13	34	+21
New Zealand	14	25	+11
Malta	15	23	+8
Netherlands	16	28	+12
Estonia	17	13	-4
Austria	18	36	+18
Israel	19	14	-5
Norway	20	20	0
Ireland	21	17	-4
Argentina	22	15	-7
Colombia	23	54	+31
Brazil	24	21	-3
Japan	25	31	+6

Country	Ranking 2004	Ranking 2003	Change
Panama	40	58	+18
Peru	41	46	+5
Venezuela	42	112	+70
Uruguay	48	55	+7
Jamaica	53	52	-1
El Salvador	57	48	-9
Dom. Rep.	64	38	-26
T&T	68	84	+16
Saint Lucia	69	67	-2
Guatemala	72	64	-8
Bahamas	75	90	+15
Nicaragua	80	71	-9
Bolivia	84	53	-31
Ecuador	87	101	+14
Honduras	88	133	+45
Belize	98	83	-15
Guyana	103	77	-26
Barbados	107	127	+20
Costa Rica	113	87	-26
St. Kitts and Nevis	137	116	-21
Paraguay	138	59	-79
Cuba	143	104	-39
Dominica	152	179	+27
Surinam	162	188	+26
St. Vincent & Grenadines	165	150	-15
Antigua * Barbuda	169	160	-9
Grenada	171	173	+2
Haiti	183	183	0

Source: United Nations. World Public Sector Report 2003. E-government at the crossroads, DESA United Nations. Global e-government Readiness Report 2004. Towards access for opportunity.

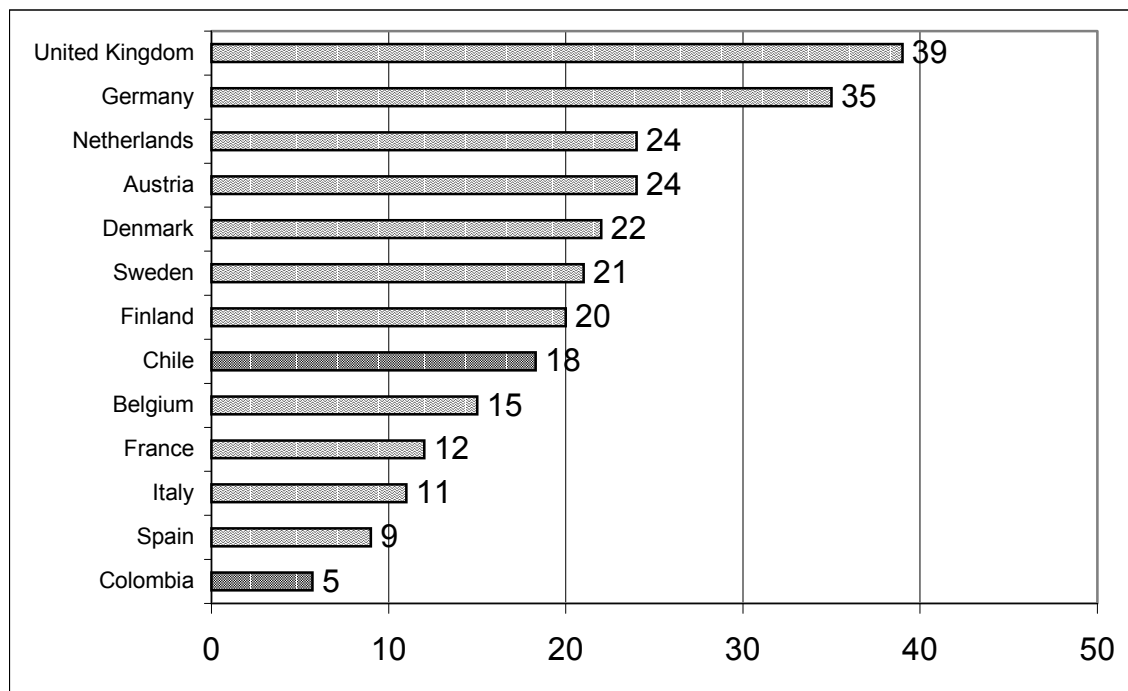
Conclusion: Some governments from the region can be regarded as fairly advanced in e-government, ranking among the world's best practices. They have developed technical platforms and electronic public services of high quality and efficiency (e.g. government purchase systems and public tenders). Venezuela, Honduras and Colombia were the fastest advancing LAC countries between 2003 and 2004. During this period, also Dominica and Surinam entered in the era of e-government Web presence. Chile, Mexico, Argentina, Brazil, Uruguay, Barbados, Panama and Guatemala are among the most advanced countries going one step further than Web presence and offering interactive online transactions.

Challenge: *Promote regional cooperation among Latin American and Caribbean countries, including technology transfer, platforms, services and the corresponding knowledge and capacities.*

16. E-business

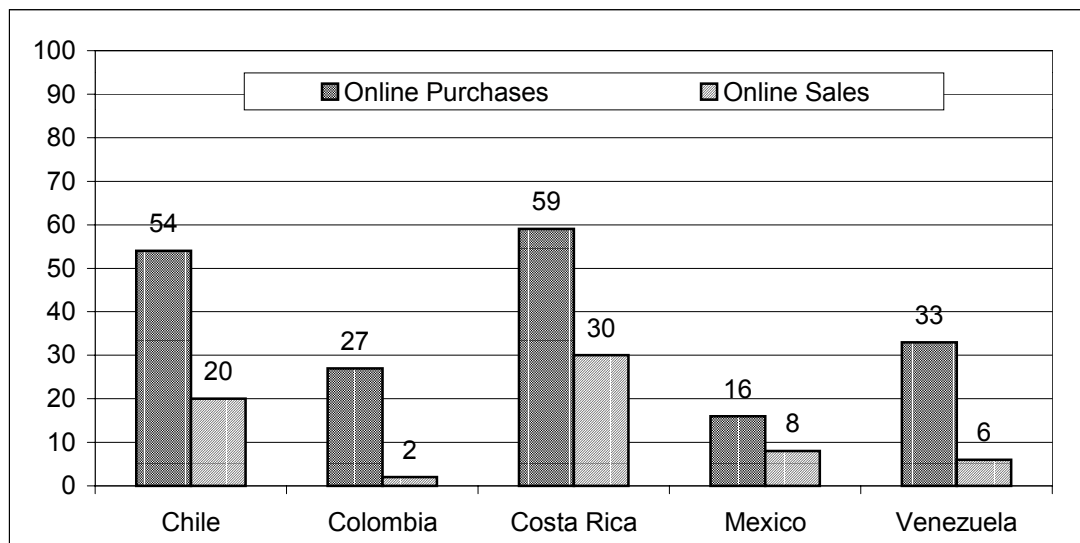
WSIS: “16 a) Governments, international organizations and the private sector, are encouraged to promote the benefits of international trade and the use of e-business, and promote the use of e-business models in developing countries and countries with economies in transition.”

FIGURE 42
COMPANIES SELLING ONLINE
(Percentage) (2002)



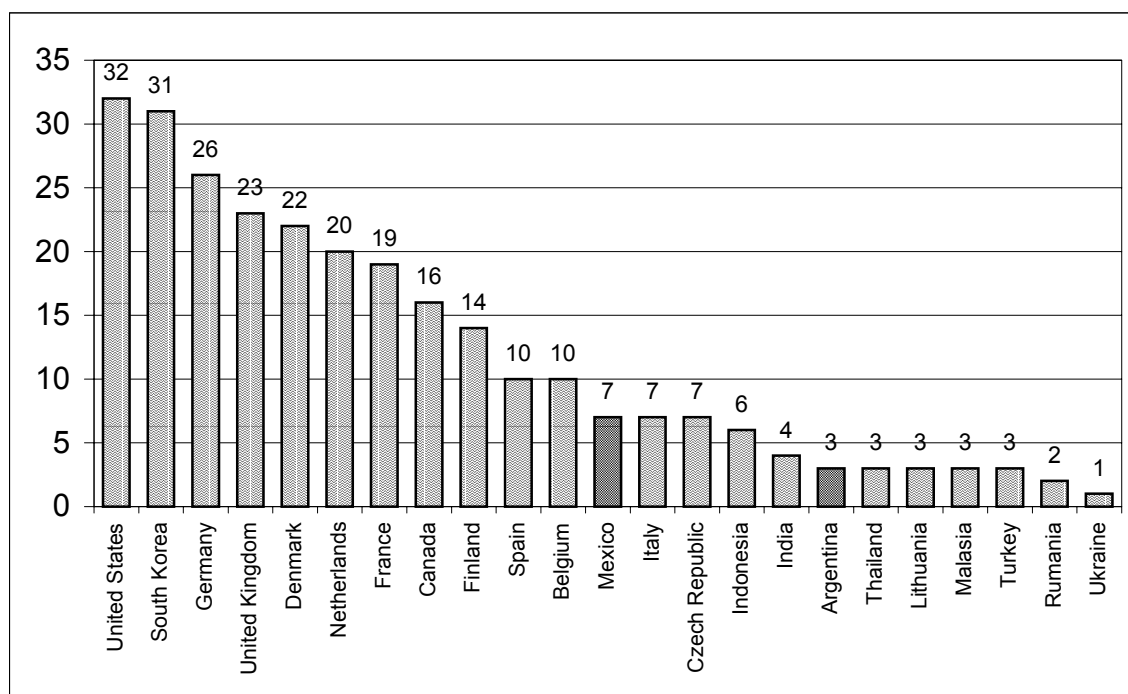
Source: own calculations, based on: Chile: Subsecretaría de Economía, agosto 2002; Colombia: DANE, Junio de 2001; Europe: eEuropeBenchmarking Report 2002

FIGURE 43
SMES DOING ONLINE TRANSACTIONS
(Percentage) (2004)



Source: United Nations Conference on Trade and Development. E-commerce and development report (UNCTAD) 2004.

FIGURE 44
INTERNET USERS PURCHASING ONLINE
(Percentage) (2002)



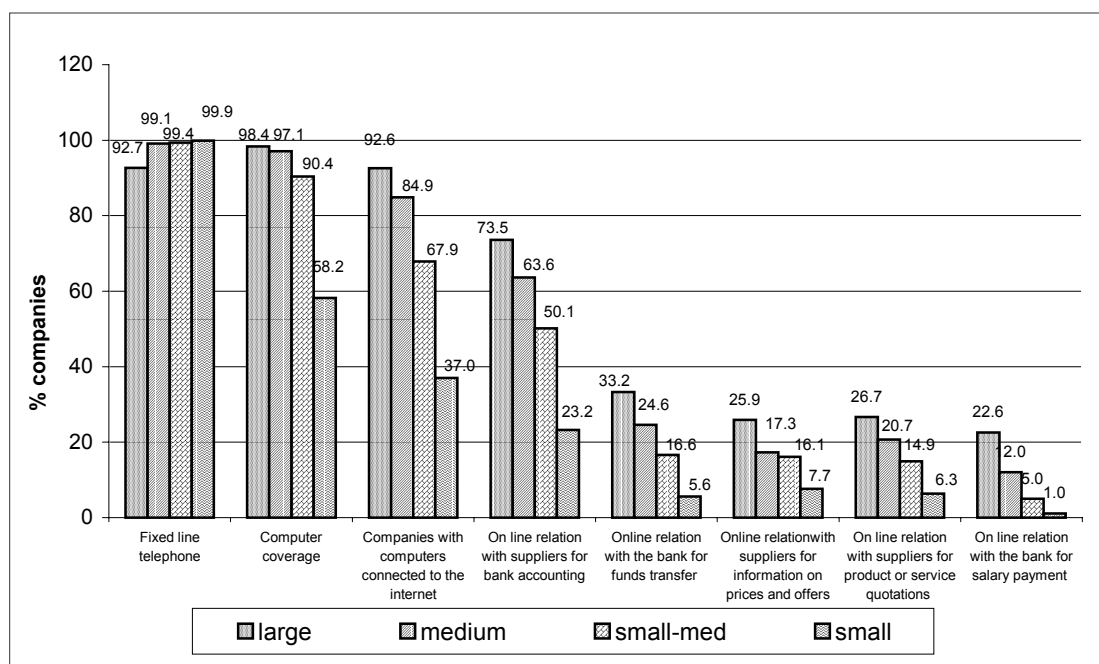
Source: Global eCommerce Report 2002, www.tnsifres.com/GeR2002/home.cfm / Calculation: OSILAC

Conclusion: Regarding the progress from ICT access to ICT usage, Latin American users and companies figure among the less advanced. While many enterprises already buy online, only few sell their products and services over the Internet. Only a very small increase in online sales is recognizable between 2002 and 2004 (see Chile from 18 to 20 percent). The existence of ICT infrastructure combined with little productive ICT usage, may lead to the well known “productivity paradox” between high ICT investments and small contributions to productivity.

Challenge: *Take better advantage of existing technology and facilitate online transactions.*

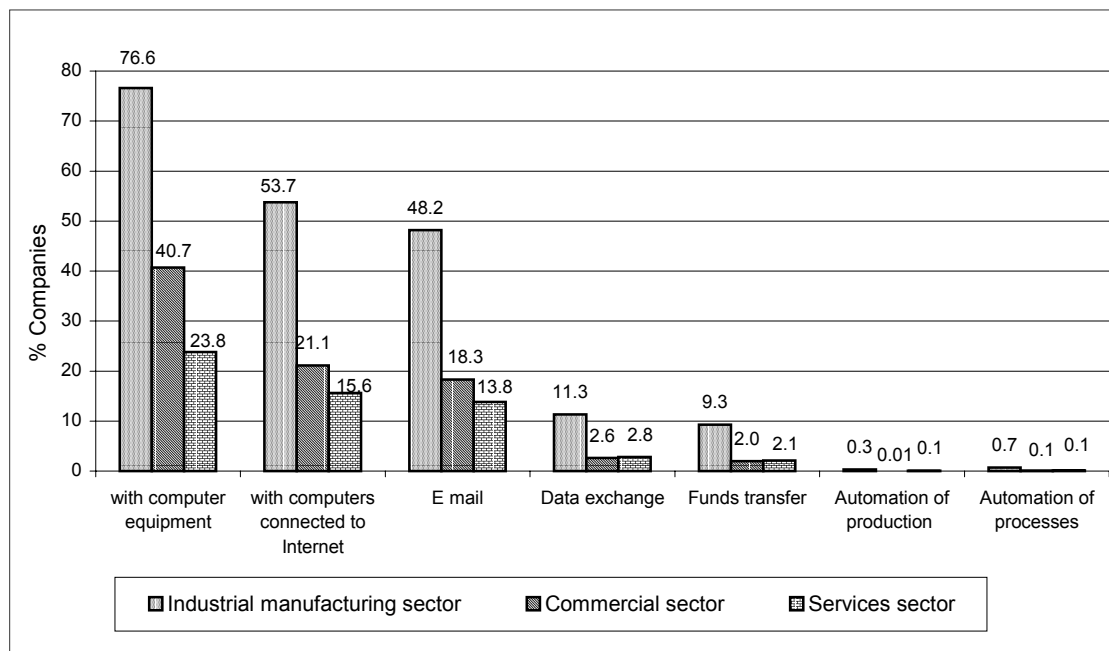
WSIS: “16 c) Government policies should favour assistance to, and growth of SMMEs, in the ICT industry, as well as their entry into e-business, to stimulate economic growth and job creation as an element of a strategy for poverty reduction through wealth creation.

FIGURE 45
ICT COVERAGE AND USAGE IN CHILEAN ENTERPRISES
(Percentage) (2001)



Source: Survey "Access and use of ITCs in Chilean companies " 2001. Subsecretaría de Economía, Santiago de Chile, August 2002.

FIGURE 46
ICT COVERAGE AND USAGE IN COLOMBIAN ENTERPRISES
(Percentage) (2001)



Source: Survey "ITC measurement " for the manufacturing sector, commercial sector and service sector, DANE, June of 2001.

Conclusion: ICT (telephone lines, computer and internet) penetration is quite high in the private sector. However, the digital divide is still noticeable regarding small enterprises. The “soft usage” of ICT (e-mails, revising the bank account, looking for information about prices and suppliers) prevails. The more sophisticated and productive use of this technology (online transactions, process automation, online pay-roll) is very limited.

Challenge: *Promote connectivity and facilitate online transactions for small business entities. Promote the digitalization of economic processes and electronic transactions.*

17. E-learning

WSIS: “11 l) Develop distance learning, training and other forms of education and training as part of capacity building programmes. Give special attention to developing countries and especially LDCs in different levels of human resources development.”

WSIS: “11 n) Launch pilot projects to design new forms of ICT-based networking, linking education, training and research institutions between and among developed and developing countries and countries with economies in transition.”

WSIS: “11 f) Develop pilot projects to demonstrate the impact of ICT-based alternative educational delivery systems [...]”

TABLE 30
EXAMPLES OF EDUCATIONAL PORTALS IN LATIN AMERICA
(2005)

Project and link	Target population	Created/ maintained by	Priority	Geo- graphic focus
ARGENTINA				
Educ.ar www.educ.ar	Primary and secondary students, teachers, parents, community and workers	Government (Education, Science and Technology) Ministry	Integrate ICT in the school system and reduce the digital divide	International, Regional, National
Eduguia.net www.eduguia.net/	Teachers, parents, community and workers; in future, primary and secondary students	Private organization	Support and facilitate the work of teachers	National
Escolar.com www.escolar.com	Primary and secondary students	Private organization	Offer schools the services described in the School Project at a reasonable cost in order to accelerate the formation of an Educational Community	International
escolares.com www.escolares.com.ar/	Primary and secondary students, teachers, parents, community and workers	Private organization	Not stated	National
Estudio 24 www.estudio24.com/	Primary and secondary students, teachers, parents, community and workers	Private organization	Establish an effective communication system for teachers and students that allows them to share ideas and experiences	National
Elsabio www.elsabio.com/	Primary and secondary students, teachers, parents, community and workers	Private organization	Promote educative proposals that integrate the use of technologies	International
NuevaAlejandría www.nalejandria.com.ar	Primary and secondary students, teachers, parents, community and workers	Private organization	Provide the teachers, parents and students with computer media that is effectively educational	International

(continuation Table 30)

BRAZIL				
Educar www.educar.sc.usp.br/	Primary and secondary students, teachers	Government and not for profit civil organization. (Programa Experimentoteca Pública Nacional with the support of Vitae)	Human resources training: teachers (distance learning) and students	National
Educarede www.educarede.org.br	Primary and secondary students, teachers	Private organization	Improve public education and fight digital exclusion, promote the equality of opportunities	International
Edukbr www.edukbr.com.br/	Primary and secondary students, teachers	Private organization	Supply quality education	National
Parceriaseducacionais www.parceriaseducacionais.org.br	Teachers, parents, community and workers	NGO	Offer new initiatives that respond to the community's needs; supply an important benchmark mechanism for teachers and business people	National
CHILE				
Educarchile www.educarchile.cl	Primary and secondary students, university students, teachers, parents, community and workers	Government (Ministerio de Educación de Chile and Fundación Chile)	Contribute to improve human resources which are the country's major engine for development	International, national
Biblioredes: abre tu mando www.biblioredes.cl	Primary and secondary students, university students, teachers, parents, community and workers	Government (Ministerio de Educación, Ciencia y Tecnología)	Promote cultural exchange between local communities and their relation with the rest of the world	National
Icarito www.icarito.tercera.cl	Primary and secondary students, university students, teachers	Private organization	Not stated	National
Virtual educativo www.vi-e.cl	Primary and secondary students, university students, teachers, parents, community and workers	Private organization	Not stated	National
Wireless IP Multimedia transmission, www.inalambrico.reuna.cl/	Primary and secondary students, teachers	Academic organization	Establish a low cost wireless system for high speed (broadband) IP multidiffusion, that allows the distribution of multimedia content	Regional
COLOMBIA				
Colombiaaprende www.colombiaaprende.edu.co	Primary and secondary students, university students, teachers, parents, community and workers	Government (Ministerio de Educación Nacional)	Promote the use of new technologies and reinforce equity and the improvement of education in Colombia	International, national
Tareanet www.tareanet.edu.com	Primary and secondary students	Government (Secretaría de Educación y Cultura de Antioquia)	Improve the quality of education in Antioquia through information and telematic networks in the education communities	Regional

(continuation Table 30)

Redacademica www.redacademica.edu.co	Primary and secondary students, university students, teachers, parents, community and workers	Government (Secretaría de Educación de Bogotá)	Develop and strength basic working skills in children and youngsters using the Internet as a learning resource	National
EduTEKA www.eduteka.org	Teachers	Not for profit civil organization	Improve primary and secondary education in Colombia through ITCs	National
El Educador www.eleducador.com	Teachers	Private organization	Contribute to overcome the digital divide between developed and developing countries through education and technology	International
Escuela Virtual www.recintodelpensamiento.com/escuelavirtual	Primary and secondary students, teachers	non profit union	Integrate ITC technologies in order to support basic learning processes in primary education.	Regional
ECUADOR				
Edufuturo www.edufuturo.com/	Students, teachers, parents	Government (Gobierno de la Provincia de Pichincha)	Offer cultural and educational informaton	National
Navegar www.proyectonavegar.com	Teachers	Academic organization	Train public sector teachers in the use of computers and Internet access	National
SPAIN				
Educación www.mec.es/educa	Primary and secondary students, university students, teachers, parents, community and workers	Government (Ministerio de Educación y Ciencia)	Establish quality education for all and among all	National
Educared www.educared.net	Primary and secondary students, teachers, parents	Private organization	Develop a space for thought and reflection focused on the consequences of the new systems of virtual schooling on civil life and personal development	National
Educaweb www.educaweb.com/	Primary and secondary students, university students, teachers, parents, community and workers	Private Organization	Cover all citizens necessities regarding education and training and encourage the use of ITCs among students, teachers and learning professionals	National
Universia www.universia.net/	University students	Private organization	Support ITC developments in regard to education, education innovation and communication interfaces in the iberoamerican global scope	International
MEXICO				
Port@isep www.sep.gob.mx	Primary and secondary students, university students, teachers, parents, community and workers	Government (Public Education Secretariat)	Create conditions that assure the access of all Mexicans to aquality education	National

(continuation Table 30)

Vela www.vela.sep.gob.mx	Students, teachers, parents, community and workers	Government (Public Education Secretariat (SEP) of the Mexican Government)	Support the teaching-learning process by supplying relevant contents related to the country's educational necessities	International
Sepiensa www.sepiensa.org.mx/	Primary and secondary students, teachers, parents	Union institution (Latin-american Institute for Educational Communication of the Public Education Secretariat)	Support people involved in basic education in the country by offering useful texts for civil and academic learning.	National
Redescolar www.redescolar.ilce.edu.mx/	Primary and secondary students, teachers	Not for profit international organization	Provide the same educational opportunities to all Mexicans, support primary and secondary education through the use of ICTs	International
El osio de los santos www.elosiodelosantos.com	Primary and secondary students, university students, teachers, parents, community and workers	Civil organization	Build a useful site for as many people as possible; considering new sections	National
PANAMA				
Educacion cibernetica www.panamet.com/educacion/	Primary and secondary students, teachers	Academic organization	Provide students and teachers with learning material in order to enrich the educational sphere	National
VENEZUELA				
Aldea Educativa www.aldeaeducativa.com	Primary and secondary students, university students, teachers, parents, community and workers	Private organization	Not mentioned	International
ORGANIZATION OF AMERICAN STATES (OAS)				
Portal Educativo de las Américas www.educoas.org/Portal	Students, teachers, professionals, researchers and government officials	International organization	Distance learning opportunities, formal and not formal education, links to digital libraries, scholarships.	International Regional

Conclusion: A large variety of educational portals and content already exists in the region. Coming from different organizations of the public and private sectors, the academia and civil society, they aim at students in basic and secondary education, as well as at teachers, university students, student's parents, the work force and society at large. A common language provides great opportunities for content exchange.

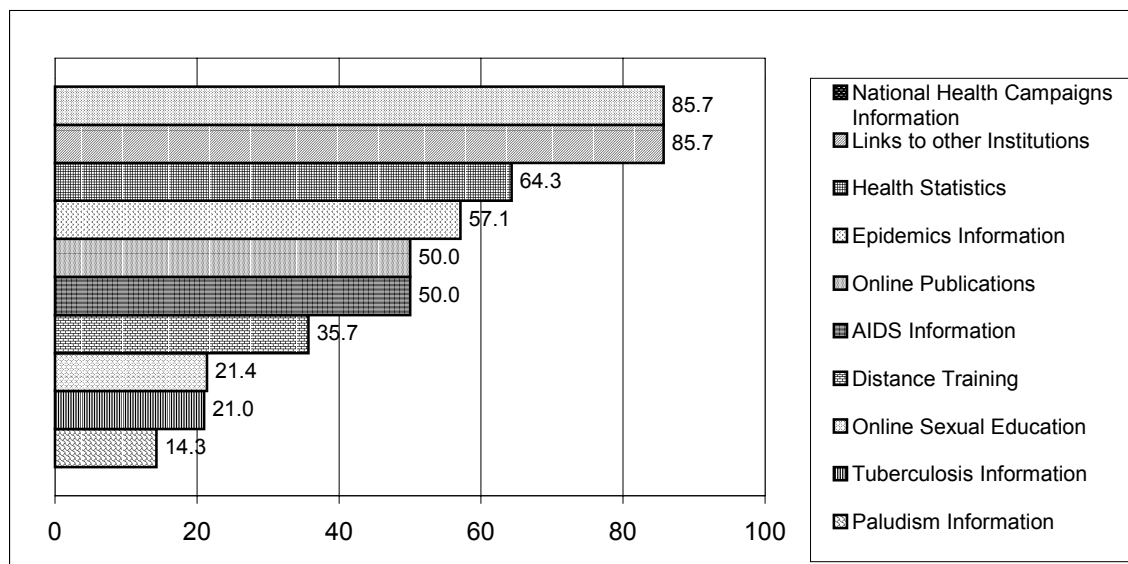
Challenge: *Facilitate cooperation and exchange between those content providers, benefiting from economies of scale digital information offers, making best usage of public goods in the field of online education within and among countries.*

18. E-health

WSIS: “18 b) Facilitate access to the world’s medical knowledge and locally-relevant content resources for strengthening public health research and prevention programmes and promoting women’s and men’s health, such as content on sexual and reproductive health and sexually transmitted infections, and for diseases that attract full attention of the world including HIV/AIDS, malaria and tuberculosis.”

WSIS: “18 c) Alert, monitor and control the spread of communicable diseases, through the improvement of common information systems.”

FIGURE 47
CONTENTS OF PORTALS IN LATIN AMERICAN HEALTH MINISTRIES
(N=16 COUNTRIES)
(Percentage) (2004)



Source: own calculations, based on: Ministerio de Salud y Ambiente Argentina, www.msal.gov.ar; Ministerio de Salud y Deportes Bolivia, www.sns.gov.bo; Ministerio de Salud Chile, www.minsal.cl; Ministerio de la Protección Social Colombia, www.minproteccionsocial.gov.co; Ministerio de Salud Costa Rica, www.netsalud.sa.cr/ms/; Ministerio de Salud Pública Cuba, www.cubagob.cu/des_soc/salud; Ministerio de Salud Ecuador, www.msp.goc.ec; Ministerio de Salud Pública y Asistencia El Salvador, www.mspas.gob.sv; Ministerio de Salud Guatemala, www.mspas.gob.gt/CMS; Secretaría de Salud México, www.salud.gob.mx; Ministerio de Salud Nicaragua, www.minsa.gob.ni; Ministerio de Salud Panamá, www.minsa.gob.pa; Ministerio de Salud y Bienestar Social Paraguay, www.mspbs.gov.py; Ministerio de Salud Peru, www.minsa.gob.pe; Ministerio de Salud Uruguay, www.msp.gub.uy; Ministerio de Salud y Desarrollo Social Venezuela, www.msds.gov.ve.

Conclusion: The majority of Latin American Health Ministries only provides basic information through their Webportals. The potential of ICT to fight diseases and to educate the public about health risks is not used. Only one third of Ministries offers online education tools and less than a fourth provides interactive applications to educate the public about risks of sexual diseases.

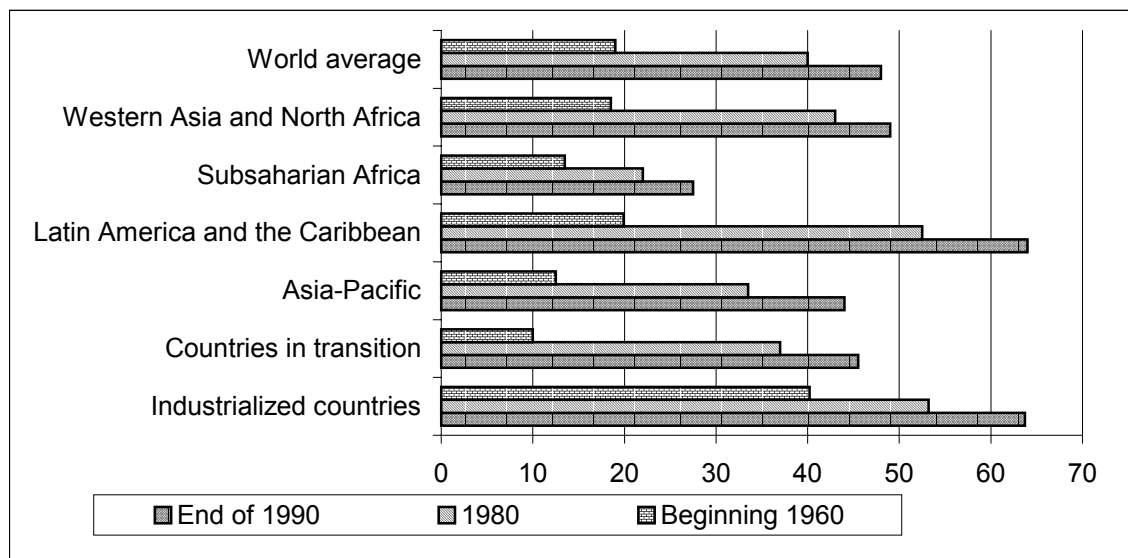
Challenge: *Integrate Health Ministries across the region into national Information Society strategies. Assure that the vast potential ICT offer to improve health systems is better exploited.*

19. E-employment

WSIS: “19 b) Promote new ways of organizing work and business with the aim of raising productivity, growth and wellbeing through investment in ICTs and human resources.”

WSIS: “19 c) Promote teleworking to allow citizens, particularly in the developing countries, LDCs, and small economies, to live in their societies and work anywhere, and to increase employment opportunities for women, and for those with disabilities. In promoting teleworking, special attention should be given to strategies promoting job creation and the retention of the skilled working force.”

FIGURE 48
SHARE OF EMPLOYEES CORRESPONDING TO SERVICES SECTOR, BY REGIONS
(Percentage) (1960-1990)



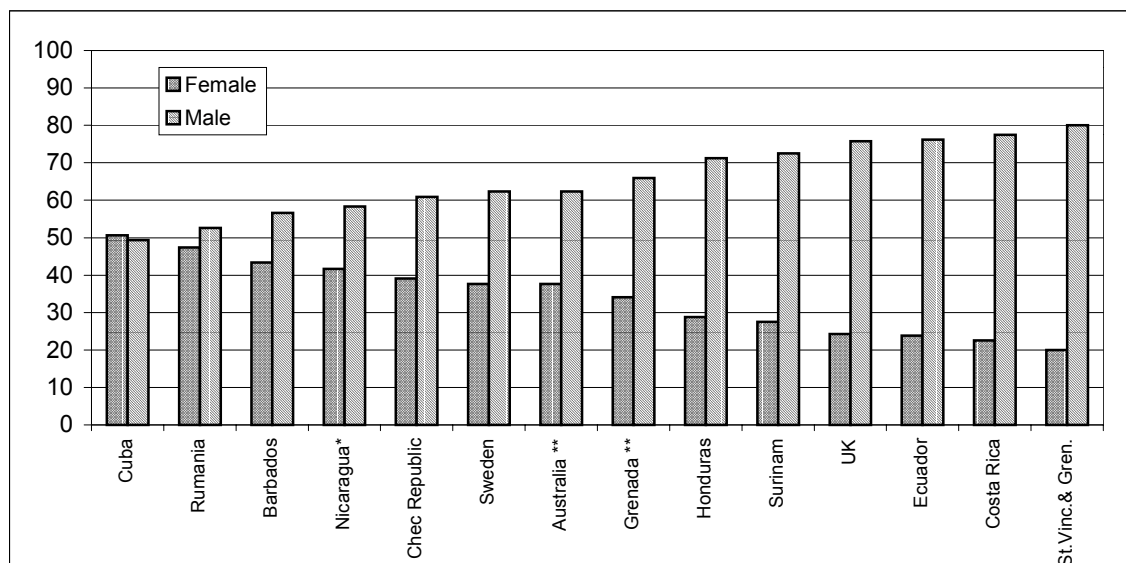
Source: International Labour Organization (ILO), Statistical Yearbook, various years.

Conclusion: The potential of digitizing services and benefiting from ICT in the service sector is very large. The share of employees corresponding to the services sector in Latin America and the Caribbean has grown decisively over recent decades. Even though the nature of services offered in the region is most likely to be different with the services offered in industrialized countries, any kind of services base on information and communication processes and can therefore benefit from the effective use of ICT.

Challenge: *Exploit all possibilities and remove legal barriers to best benefit from teleworking and from the productive use of ICT for the economic and social benefit of the workforce, especially in the service sector.*

WSIS: “19 d) Promote early intervention programmes in science and technology that should target young girls to increase the number of women in ICT careers.”

FIGURE 49
FULL-TIME TELECOMMUNICATIONS STAFF BY GENDER
(Percentage) (2001)



Source: International Telecommunications Union, World telecommunications Database, 2004.

Note: *- 1999, ** - 2000.

Conclusion: The integration of women in ICT-related careers presents a significant challenge.

Challenge: *Traditionally, women have had a higher presence in humanistic than in technological sciences. Ministries related with education, science and technology, industry, and gender equality should elaborate consistent and systematic education policies and incentive systems to revert this trend, in order to give men and women equal access to the same areas of knowledge.*

20. E-environment

WSIS: “20 c) Establish monitoring systems, using ICTs, to forecast and monitor the impact of natural and man-made disasters, particularly in developing countries, LDCs and small economies.”

WSIS: “18 f) Strengthen and expand ICT-based initiatives for providing medical and humanitarian assistance in disasters and emergencies.”

FIGURE 50
NATIONAL CENTERS FOR THE PREVENTION OF/ INFORMATION ON DISASTERS
(N=13 COUNTRIES)
(Percentage) (2004)

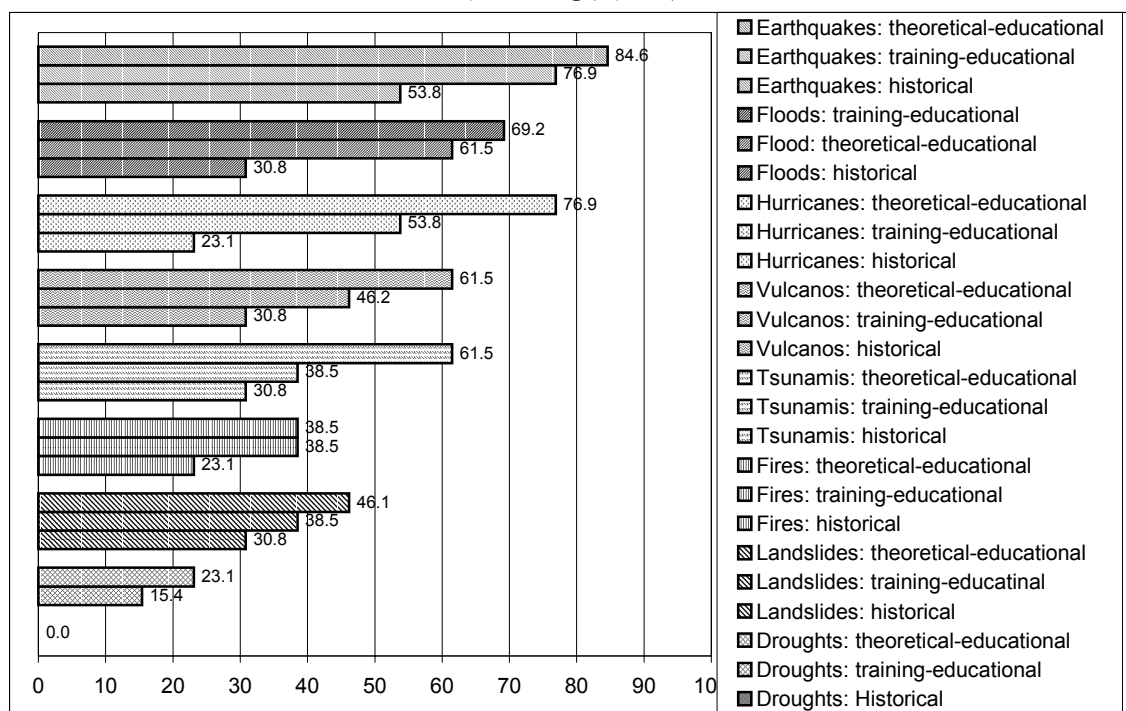
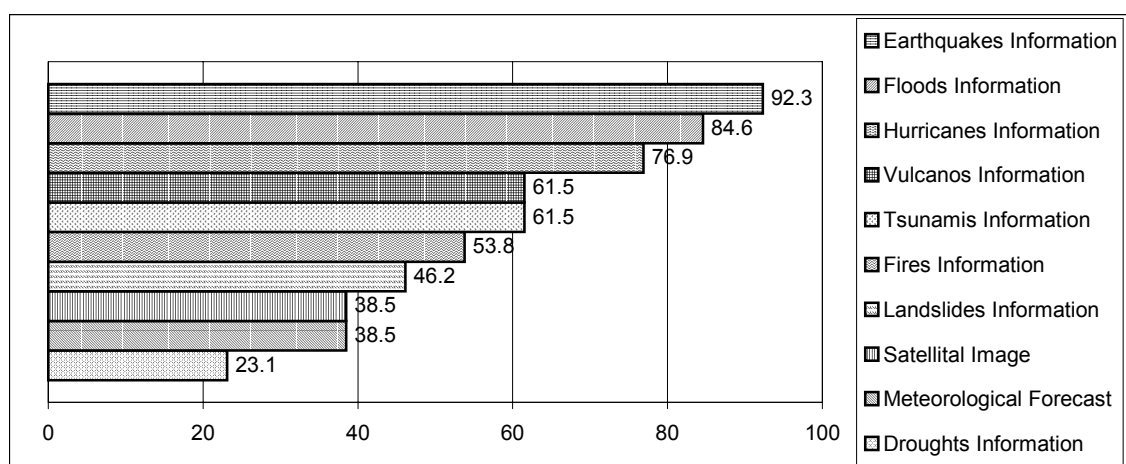


FIGURE 51
NATIONAL DISASTER INFORMATION SYSTEMS BY KIND OF PROVIDED INFORMATION
(N=13 COUNTRIES)
(Percentage) (2004)



Source: own calculations, based on: SIFEM - El Sistema Federal de Emergencias Dirección Nacional de Políticas de Seguridad y Protección Civil (Argentina), Organización Nacional del Manejo de Emergencias (Belize), Oficina Nacional de Emergencia "ONEMI" (Chile), Dirección General para la Prevención y Atención de Desastres "DGPAD" (Colombia), Comisión Nacional de Prevención del Riesgo y Atención de Emergencias de Costa Rica (CNE), Defensa Civil (Ecuador), Comité de Emergencia Nacional "COEN" (El Salvador), Coordinadora Nacional para la Reducción de Desastres "CONRED" (Guatemala), Oficina de Preparación para Desastres y Emergencias (Jamaica), Centro Nacional de Prevención de Desastres "CENAPRED" (Mexico), SINAPROC (Panama), Comisión Nacional de Emergencias (Dom. Rep.), Protección Civil y Administración de Desastres (Venezuela).

TABLE 31
REGIONAL DISASTER INFORMATION CENTERS OFFERING INFORMATION IN
INTERNET AND/OR WITH INFORMATION SYSTEMS
(2005)

Information center	Web site
La Red de Estudios Sociales en Prevención de Desastres en América Latina (LA RED)	www.desenredando.org
Organización Panamericana de la Salud (OPS). Oficina de Desastres para Sudamérica	www.paho.org/desastres
Centro de Coordinación para la Prevención de los Desastres Naturales en América Central (CEPRENAC)	www.cepredenac.org
Estrategia Internacional para la Reducción de Desastres en América Latina y el Caribe (EIRD)	www.eird.org
The Caribbean Disaster Emergency Response Agency (CDERA)	www.cderra.org
Caribbean Disaster Information Network (CARDIN)	www.cardin.uwimona.edu.jm .1104

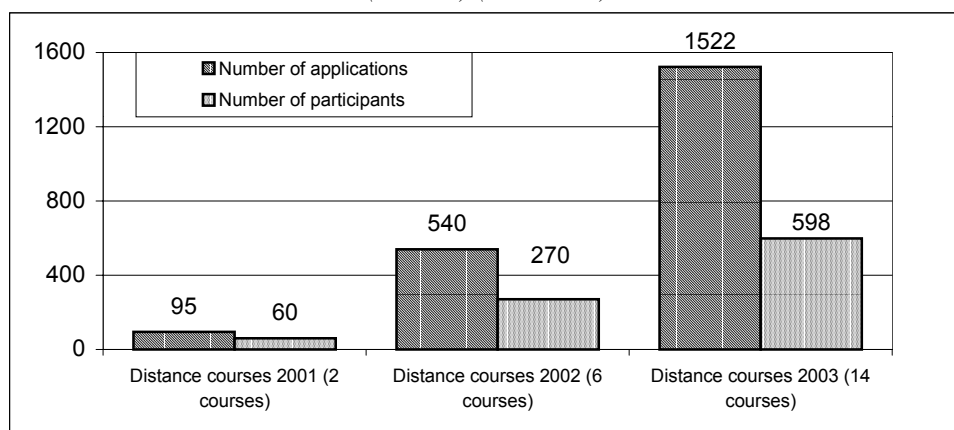
Conclusion: For many countries in the region, especially in Central America and the Caribbean, disaster management systems are essential and life saving tools. They are also acting as a safeguard for the national economic infrastructure, contributing to sustainable development. Various initiatives exist to interconnect national information networks on environmental disasters.

Challenge: *Make better use of the existing information and communication possibilities by integrating real-time applications and extending interconnections between information networks.*

21. E-agriculture

WSIS: “21 a) Ensure the systematic dissemination of information using ICTs on agriculture, animal husbandry, fisheries, forestry and food, in order to provide ready access to comprehensive, up-to-date and detailed knowledge and information, particularly in rural areas.”

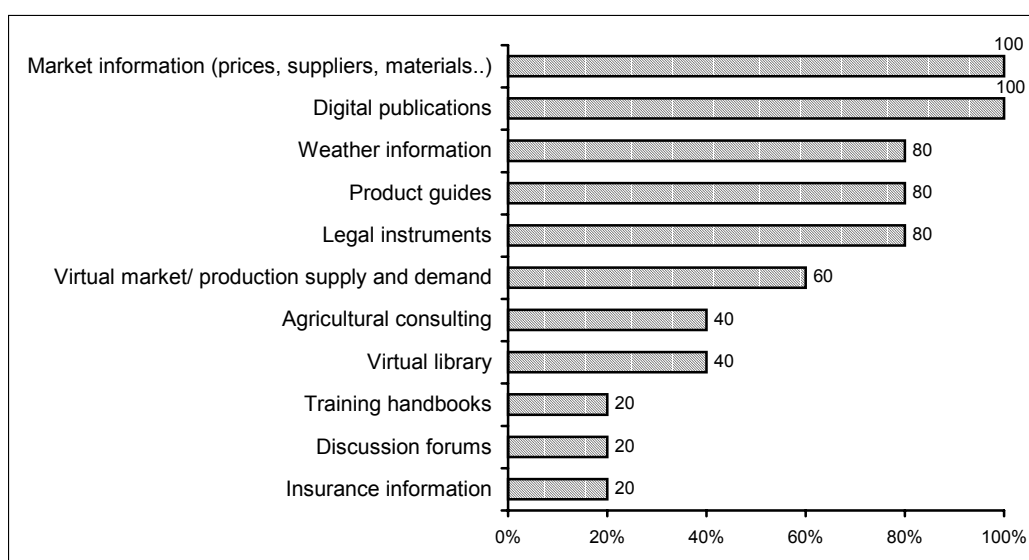
FIGURE 52
HISTORICAL EVOLUTION OF THE TOTAL NUMBER OF APPLICANTS AND PARTICIPANTS IN DISTANCE LEARNING FOR AGRICULTURAL POLICY MAKERS OF FODEPAL/FAO
(Number) (2001-2003)



Source: FODEPAL, FAO.

Note: FODEPAL is a project of FAO. The target of this project is to contribute to the sustainable development and the integral management of natural resources in Latin America by means of improvements in the skills of the people responsible for analysis, planning and policy making. One of the most relevant training activities that FODEPAL has developed is distance learning through the Internet.

FIGURE 53
INFORMATION SYSTEMS FOR FARMERS AND CATTLE BREEDERS ON THE INTERNET
(N = 5 SYSTEMS FROM 5 DIFFERENT COUNTRIES)
(Percentage) (2005)



Source: Secretaría de Estado de Agricultura de la Republica Dominicana, www.agricultura.gov.do; Sistema de Información Rural Arequipa de Perú, www.sira-arequipa.com.pe; Sistema de Información Agrícola de Nicaragua, www.sia.net.ni; Ministerio de Agricultura, Ganadería y Alimentación de Guatemala, www.maga.gob.gt, Sistema de Información del Sistema Agropecuario de Costa Rica, www.infoagro.go.cr.

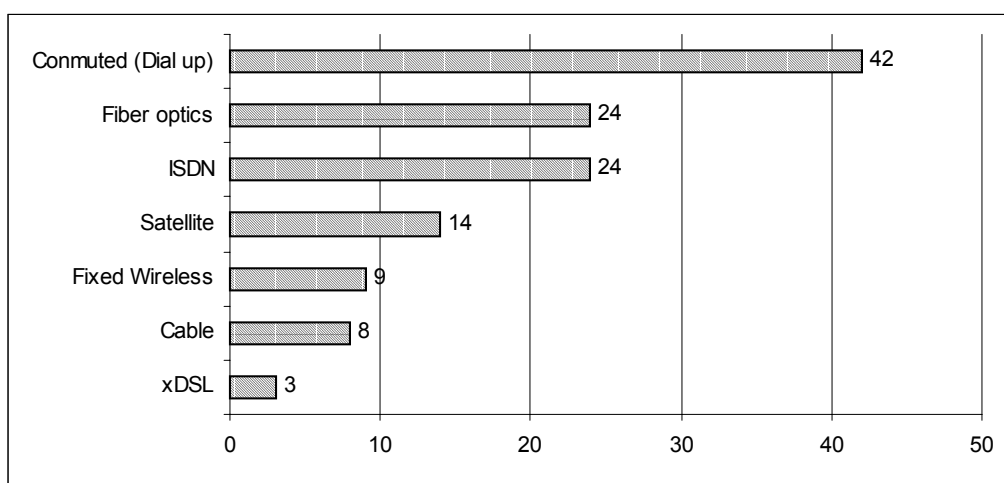
Conclusion: Digital information provision and distance e-learning programmes are increasingly relevant for agricultural development. Government initiatives have been started, but are still in early stages of sophistication.

Challenge: *Improve interactivity and quality of information services for the agricultural sector.*

22. E-science

WSIS: “22 a) Promote affordable and reliable high-speed Internet connection for all universities and research institutions to support their critical role in information and knowledge production, education and training, and to support the establishment of partnerships, cooperation and networking between these institutions.”

FIGURE 54
UNIVERSITIES WITH COMPUTERS AND INTERNET CONECTION, BY CONECTION TYPE
IN COLOMBIA
(Percentage) (2001)



Source: DANE. Medición de las tecnologías de la información y las comunicaciones – TIC. Estadísticas e indicadores del sector de educación formal regular y educación superior, 2003.

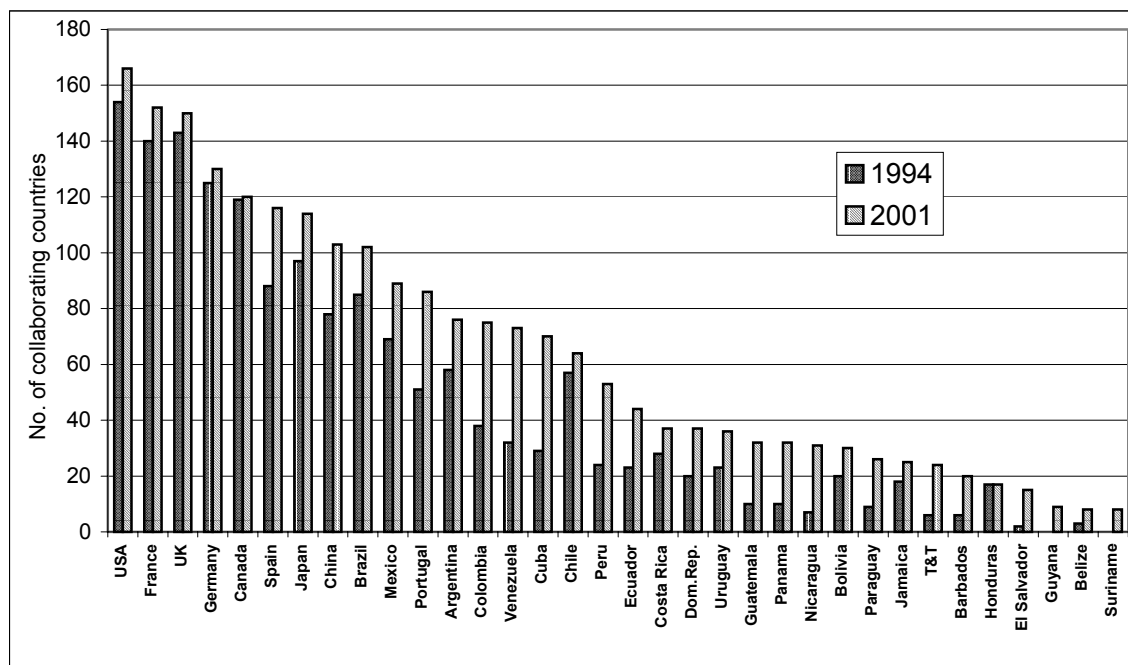
Note: Multiple connections possible.

Conclusion: 42% of the Colombian universities had dial-up access in 2001. Limited bandwidth does not allow appropriate use of most online applications generally needed by researchers, teachers or university students.

Challenge: *Extend high-speed Internet connections for all universities and research institutions.*

WSIS: “22 e) Promote principles and metadata standards to facilitate cooperation and effective use of collected scientific information and data as appropriate to conduct scientific research.”

FIGURE 55
BREADTH OF INTERNATIONAL COAUTHORSHIP TIES IN SELECTED
COUNTRIES/ECONOMIES
(1994 and 2001)



Source: Institute for Scientific Information, Science Citation Index and Social Sciences Citation Index; CHI Research, Inc.; and National Science Foundation, Division of Science Resources Statistics, special tabulations; in: National Science Foundation, National Science Board, Science and Engineering Indicators 2004, NSB 04-01 (Arlington, VA, USA, 2004).

Note: Number of countries that have jointly authored articles (based on institutional address) with indicated country. Countries ranked by number of countries collaborating in 2001.

TABLE 32
INTRAREGIONAL SCIENTIFIC COLLABORATION IN CENTRAL AND SOUTH AMERICA
(1994 and 2001)

	Country	International articles	ARG	BRA.	CHL	COL	CRI	CUB	MEX	PAN.	PER	URG	VEN
	Years/Change	Number	Percent										
Argentina	1994	676	-	8.6	4.4	0.3	0.1	0.3	1.5	0.0	0.4	1.2	1.5
	2001	1587	-	12.6	4.5	2.2	0.1	0.7	4.3	0.0	0.4	1.8	1.1
	Change	911	-	4.0	0.0	1.9	-0.1	0.4	2.9	0.0	0.0	0.6	-0.3
Brazil	1994	1624	3.6	-	2.0	0.7	0.1	0.4	1.6	0.0	0.4	0.7	0.6
	2001	3369	5.9	-	1.7	1.7	0.5	1.3	3.3	0.1	0.9	1.0	1.0
	Change	1745	2.4	-	-0.3	0.9	0.5	0.9	1.7	0.1	0.6	0.3	0.5
Chile	1994	475	6.3	6.9	-	0.6	0.0	0.4	3.4	0.0	0.2	0.8	2.1
	2001	954	7.4	6.1	-	1.2	0.2	0.7	4.1	0.2	0.7	1.3	1.2
	Change	479	1.1	-0.9	-	0.5	0.2	0.3	0.7	0.2	0.5	0.4	-1.0
Colombia	1994	149	1.3	8.1	2.0	-	1.3	0.0	12.8	1.3	2.0	0.0	1.3
	2001	373	9.4	15.0	2.9	-	0.8	2.7	12.3	0.3	3.8	1.6	3.5
	Change	224	8.0	7.0	0.9	-	-0.5	2.7	-0.4	-1.1	1.7	1.6	2.1
Costa Rica	1994	85	1.2	1.2	0.0	2.4	-	1.2	8.2	5.9	0.0	0.0	0.0
	2001	145	0.7	12.4	1.4	2.1	-	0.0	4.8	2.1	1.4	0.0	0.7
	Change	60	-0.5	11.2	1.4	-0.3	-	-1.2	-3.4	-3.8	1.4	0.0	0.7
Cuba	1994	89	2.2	6.7	2.2	0.0	1.1	-	15.7	0.0	0.0	0.0	3.4
	2001	334	3.3	12.9	2.1	3.0	0.0	-	28.1	0.6	0.0	0.6	2.1
	Change	245	1.0	6.1	-0.2	3.0	-1.1	-	12.4	0.6	0.0	0.6	-1.3
Mexico	1994	836	1.2	3.1	1.9	2.3	0.8	1.7	-	0.2	0.5	0.4	0.2
	2001	2066	3.3	5.3	1.9	2.2	0.3	4.5	-	0.1	0.5	0.5	1.8
	Change	1230	2.1	2.2	0.0	-0.1	-0.5	2.8	-	-0.1	0.0	0.1	1.6
Panama	1994	38	0.0	0.0	0.0	5.3	13.2	0.0	5.3	-	0.0	0.0	2.6
	2001	89	0.0	4.5	2.2	1.1	3.4	2.2	2.2	-	1.1	0.0	2.2
	Change	51	0.0	4.5	2.2	-4.1	-9.8	2.2	-3.0	-	1.1	0.0	-0.4
Peru	1994	71	4.2	8.5	1.4	4.2	0.0	0.0	5.6	0.0	-	0.0	0.0
	2001	180	3.9	17.2	3.9	7.8	1.1	0.0	5.6	0.6	-	1.1	2.8
	Change	109	-0.3	8.8	2.5	3.6	1.1	0.0	-0.1	0.6	-	1.1	2.8
Uruguay	1994	69	11.6	17.4	5.8	0.0	0.0	0.0	4.3	0.0	0.0	-	2.9
	2001	184	15.2	18.5	6.5	3.3	0.0	1.1	5.4	0.0	1.1	-	2.7
	Change	115	3.6	1.1	0.7	3.3	0.0	1.1	1.1	0.0	1.1	-	-0.2
Venezuela	1994	259	3.9	3.5	3.9	0.8	0.0	1.2	0.8	0.4	0.0	0.8	-
	2001	434	4.1	8.1	2.5	3.0	0.2	1.6	8.5	0.5	1.2	1.2	-
	Change	175	0.3	4.6	-1.3	2.2	0.2	0.5	7.8	0.1	1.2	0.4	-

Source: Institute for Scientific Information, Science Citation Index and Social Sciences Citation Index; CHI Research, Inc.; and National Science Foundation, Division of Science Resources Statistics, special tabulations ; in: National Science Foundation, National Science Board, Science and Engineering Indicators 2004, NSB 04-01 (Arlington, VA, USA, 2004)

Note: Data are share of indicated country's articles internationally coauthored with other countries in the same region. Internationally coauthored articles are on a whole-count basis, where each coauthor's country is credited with a whole count.

Conclusion: ICT is increasingly connecting the Latin American and Caribbean research community with researchers all over the world. While in 1994 researchers from the region have collaborated with researchers from an average of 26 foreign countries, in 2001 this number almost doubled. Collaboration among researchers of different countries of the region is still limited and stagnated at around 18-19% of all internationally co-authored articles during the last decade. Nevertheless, the number of joint publications has increased.

Challenge: *Work on international principles and standards to assure the continuation of the growing trend of international, media-frictionless online research collaboration. Promote research online collaboration among researcher within the region, especially through the recently established CLARA network.*

C8. Cultural diversity and identity, linguistic diversity and local content

WSIS: “23. Cultural and linguistic diversity, while stimulating respect for cultural identity, traditions and religions, is essential to the development of an Information Society based on the dialogue among cultures and regional and international cooperation. It is an important factor for sustainable development.”

WSIS: “23 d) Develop and implement policies that preserve, affirm, respect and promote diversity of cultural expression and indigenous knowledge and traditions through the creation of varied information content and the use of different methods, including the digitization of the educational, scientific and cultural heritage.”

WSIS: “23 e) Support local content development, translation and adaptation, digital archives, and diverse forms of digital and traditional media by local authorities. These activities can also strengthen local and indigenous communities.”

WSIS: “23 k) Enhance the capacity of indigenous peoples to develop content in their own languages.”

WSIS: “23 l) Cooperate with indigenous peoples and traditional communities to enable them to more effectively use and benefit from the use of their traditional knowledge in the Information Society.”

WSIS: “8 f) Explore the viability of establishing multi-stakeholder portals for indigenous peoples at the national level.”

WSIS: “11 i) Launch education and training programmes, where possible using information networks of traditional nomadic and indigenous peoples, which provide opportunities to fully participate in the Information Society.”

TABLE 33
INDIGENOUS POPULATION IN SELECTED LATIN AMERICAN COUNTRIES
(2003)

Country	Native population		Percentage of total population		Main spoken language	Number of Languages Spoken
	Instituto Indigenista Interamericano	World Bank	Instituto Indigenista Interamericano	World Bank		
Bolivia	4.500.000	4.150.000	63.00	56.80	Quechua, aymara	n.f.
Ecuador	4.100.000	3.100.000	40.00	29.50	Quechua	10
Guatemala	5.800.000	3.900.000	66.00	43.80	Kekchí	n.f.
Mexico	7.800.000	12.000.000	9.00	14.20	Nahuatl	62
Peru	8.400.000	9.100.000	40.00	40.80	Quechua	46
Chile	800.000	550.000	6.00	4.20	Mapuche	5
Colombia	600.000	300.000	2.00	0.90	Wayuú	64

Source: Gesellschaft für technische Zusammenarbeit, www.gtz.de/indigenas/espanol/introduccion/estadistica.htm; www.bowdoin.edu/~eyepes/latam/civind.htm

TABLE 34
MULTI-STAKEHOLDER PORTALS FOR INDIGENOUS PEOPLES AT NATIONAL LEVEL
(2004)

Country	Initiative name	Facilitator	Stakeholders	Year	Mission	ICT use
Bolivia	Programa de Cooperación 2003-2007	Government, UNICEF	Government, natives, NGO, society	2002	Create a culture of respect that considers childhood, youth, women and indigenous peoples' rights in the State and civil society	Information, email, videos, music
Chile	Comisión Verdad Histórica y Nuevo Trato de Chile	Government	Government, indigenous peoples, NGOs, society, others	2001	Enhance fairness and respect in future relations	Information, email, on line forums
	Programa Orígenes	Government	BID, Government, natives, society	2001	Improve skills and opportunities for the rural indigenous communities in the production, education and health scopes.	Information, email, videos
	CONADI	State Institution	Government, indigenous peoples, society	1993	Promote the acknowledgment and respect of indigenous ethnic groups, their communities and individuals.	Consultations, suggestions, questions, complaints, petitions, opinions.
	Ser Indígena	National Council for Art and Culture	Government, indigenous peoples, society	2001	Value, stimulate and divulge the cultural, artistic and spiritual expressions of the 8 indigenous groups that live nowadays in the national territory	Information, email, videos, music, search engines, others
Mexico	Programa de Cooperación 2002-2006 (Programa Derechos de la Niñez Indígena: "Escuela Amiga" and "Aprendizaje Participativo Comunitario" projects)	Government, UNICEF	Government, indigenous peoples, NGO, society	2002	Improve performance regarding childhood and youth rights in indigenous communities	Information

(continuation Table 34)

Promaya	Government, UNICEF	Government, indigenous peoples, NGO, society	1999	Reduce the differences that the Maya indigenous groups are facing	Information
Programmes of the Comisión Nacional para el Desarrollo de los Pueblos Indígenas (8 programmes: Albergues escolares, Casa de los Mil Colores, Infraestructura básica, Fomento y desarrollo, Fondos regionales, Organización productiva para mujeres, Convenios en materia de justicia Desarrollo de Comunidades Mayas – Yucatán)	Decentralized entity of the Federal Public Administration	Government, indigenous peoples, NGO, society	2003	Development, integration and sustainability of native communities	Information, search engine

Source: UNICEF, www.unicef.org/bolivia/unicef.bolivia.2007.htm; Fondo para el Desarrollo de los Pueblos Indígenas de America Latina y el Caribe, www.fondoindigena.org/comision, Programa Orígenes, Gobierno de Chile, www.origenes.cl, Corporación Nacional de Desarrollo Indígena www.conadi.cl, Portal de las culturas Originarias de Chile, www.serindigena.cl, www.unicef.org/mexico/programas_cdi.gob.mx/index.php?id_seccion=49.

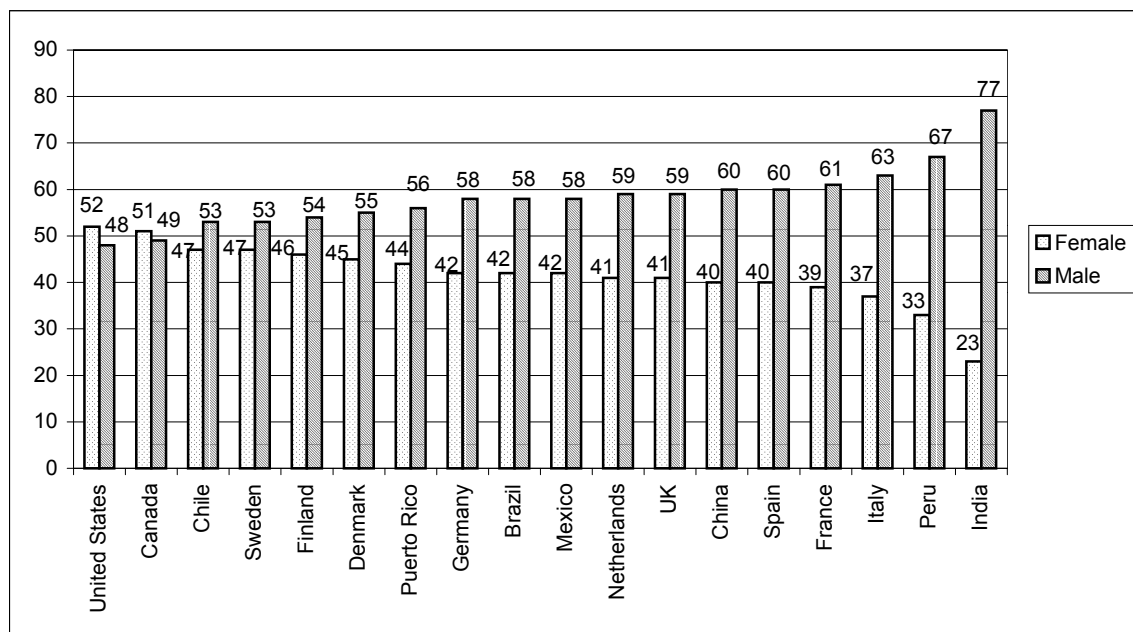
Conclusion: In some countries of the region, the proportion of indigenous peoples and the use of languages other than Spanish or Portuguese is very large. Some initiatives and projects are promoting, among other things, the use of ICT to benefit indigenous peoples. However, these initiatives can only be found sporadically and some countries with very large indigenous populations lack such efforts.

Challenge: *Pay more attention to the promotion of diversity in the Latin American and Caribbean Information Society. All groups of a pluralistic society must be given the opportunity to contribute to the Information Society in the region.*

WSIS: “23 h) Strengthen programmes focused on gender-sensitive curricula in formal and non-formal education for all and enhancing communication and media literacy for women with a view to building the capacity of girls and women to understand and to develop ICT content.”

WSIS: “28 d) Gender-specific indicators on ICT use and needs should be developed, and measurable performance indicators should be identified to assess the impact of funded ICT projects on the lives of women and girls.”

FIGURE 56
PERCENTAGE OF INTERNET USERS PER GENDER
(Percentage) (2001)



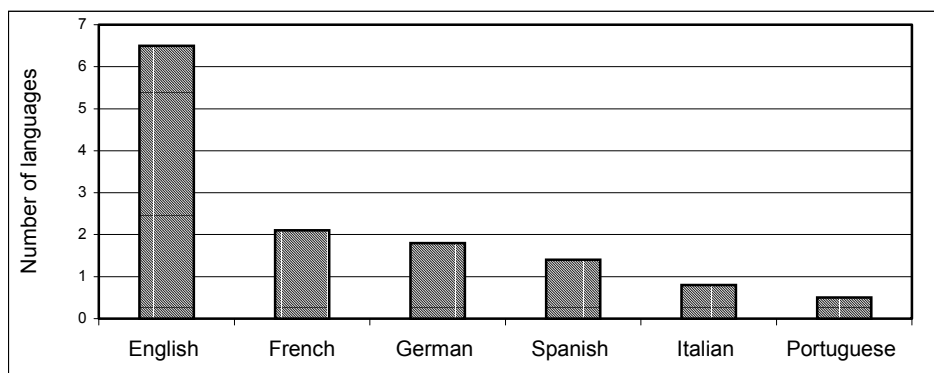
Source: World Telecommunications Database, International Telecommunications Union, ITU, 2004.

Conclusion: While the gender dimensions of the digital divide still shows a 40-60% relation for Internet usage, women and girls are catching-up rapidly in comparison to the first years of the network, when the Internet was almost purely male-dominated. Some countries from the hemisphere rank among the most gender equal worldwide.

Challenge: *Set up and strengthen gender-oriented programmes to maintain the trend of increasing gender equality in the Information Society.*

WSIS: “23 o) Governments, through public/private partnerships, should promote technologies and R&D programmes in such areas as translation, iconographies, voice-assisted services and the development of necessary hardware and a variety of software models, including proprietary, open source software and free software, such as standard character sets, language codes, electronic dictionaries, terminology and thesauri, multilingual search engines, machine translation tools, internationalized domain names, content referencing as well as general and application software.”

FIGURE 57
AVERAGE LANGUAGE COVERAGE OF MULTILINGUAL TRANSLATORS
(N=13 TRANSLATORS)
(Number of languages translated) (2004)



Source: own calculations, based on: www.freetranslation.com; babelfish.altavista.com/translate.dyn; www.worldlingo.com/products_services/worldlingo_translator; www.alphaworks.ibm.com/aw.nsf/html/mt; www.reverso.net; www.t-mail.com/cgi-bin/tsail; translation.paralink.com/; www.wordreference.com/; dictionary.reference.com/translate; translate.google.com/translate_t; www.elmundo.es/traductor/; www.pons.de/;

Note: Number indicates the number of languages into which the original language is translated. The English language, for example, is translated into 6.5 other languages on average

Conclusion: People speaking languages also spoken in developed countries have more possibilities for ICT translation. Even though only 1.6 % of the world population speaks German, and 3.1 % French, machine translators are better equipped to provide German and French language translation than Spanish, for example, even though the proportion of Spanish-speaking people is 6.1 % of the world population.

Challenge: *Increase efforts in research and development to create innovative and intelligent ICT tools for the benefit of the people of Latin America and the Caribbean.*

C9. Media

WSIS: “24. The media—in their various forms and with a diversity of ownership—as an actor, have an essential role in the development of the Information Society and are recognized as an important contributor to freedom of expression and plurality of information.”

WSIS: “24 a) Encourage the media—print and broadcast as well as new media—to continue to play an important role in the Information Society.”

WSIS: “24 f) Reduce international imbalances affecting the media, particularly as regards infrastructure, technical resources and the development of human skills, taking full advantage of ICT tools in this regard.”

WSIS: “24 g) Encourage traditional media to bridge the knowledge divide and to facilitate the flow of cultural content, particularly in rural areas.”

TABLE 35
LARGE LATIN AMERICAN MEDIA GROUPS AND SELECTED SUBSIDIARIES PER MEDIA SECTOR
(2003)

	Internet	TV	Film	Music	Publishing	Radio	Others
Globo (Brazil)	Globo online, Shoptime, Som Livre, etc.	Canal Brazil, Globo News, Telecine, Premiere, Rede Globo, USA network, Sportv, etc.	TV Globo Filmes	-	Diario de São Paulo, Casa & Jardim, Galileu, etc.	98 FM, Globo FM, Radioclick, etc.	Seguradora Roma, Globopar, Telecurso, Praia Shopping etc.
Grupo Abril (Brazil)	UOL, BOL, Usina do Som, etc.	MTV Brazil, ATV, etc.	-	Abril Music, Usina do Som	Editoria Abril (150 titles), Veja, Nova, Claudia, Editoria Caras, Almanaque Abril, Guia do estudante, etc.	-	Guias Quatro Rodas, Fundacao Vitor Civita, etc.
Grupo Cisneros (Vzla)	AOL Latin America, El Sitio, etc.	Univision, Caracol Television, Venevision, Chilevision, etc.	-	HTV, Telehit, Much Music Latin America	-	Ibero-american Radio Chile, etc.	IAMP, Panamco, Miss Venezuela, etc.
Grupo Clarín (Arg)	Prima, Clarin.com, etc.	Channel 13 BA, Multicanal, Trisa, Metropolis Intercom, etc.	Patagonic	-	Calín, Olé, Artes Graphics, Elle, Cimeco, DyN, etc.	-	Hotel Clarin, etc.
Grupo Televisa (Mexico)	EsMas.com, etc.	Televisa (300 stations), Cablevision, Innova,	Televisa	Melody y Fonovisa	Edivisa, TV y Novelas, Tele-Guia, Muy interesante, etc.	Acir-Radiopolis, XEW-AM, XEQ-FM, etc.	Skytel, Servicios Doblaje, etc.

Source: Grupo Televisa, Rede Globo, Grupo Clarin, Grupo Cisneros, Grupo Abril, 2002.

Note: Listing does not necessarily imply a 100 percent ownership

Conclusion: Some Latin American Media Groups are very strong in their countries. Televisa runs 189 of the 200 most popular TV programs in Mexico and captures 76% of the national TV audience. Rede Globo, with its 133 broadcast and affiliated stations reaches 74% of the Brazilian TV audience during prime time and Grupo Brazil edits seven out of the 10 most popular magazines in the country. However, their revenue is less than 10% of their transnational counterparts, such as AOL-Time Warner, Walt Disney or Bertelsmann. While the concentration of the media market is extremely high in many countries of the region, internationally it is hard for them to compete. There is however much scope for widening their role as regional content provider.

Challenge: *Encourage a regional media strategy to assure that Latin American content provider prevails and expand, while the sector is undergoing significant changes.*

WSIS: “24 b) Encourage the development of domestic legislation that guarantees the independence and plurality of the media.”

TABLE 36
OWNERSHIP DISTRIBUTION OF TOP FIVE DAILY NEWSPAPERS AND TOP FIVE
TELEVISION STATIONS IN PERCENT
(2000)

Country		Argentina	Brazil	Canada	Chile	Colombia	Mexico	Peru	US	Vzla	Average
Press, by count (%)	State	0	0	0	0	0	0	0	0	0	0
	Private	100	100	100	100	100	100	100	100	100	100
	Other	0	0	0	0	0	0	0	0	0	0
Press, by share (%)	State	0	0	0	0	0	0	0	0	0	0
	Private	100	100	100	100	100	100	100	100	100	100
	Other	0	0	0	0	0	0	0	0	0	0
TV, by count (%)	State	20	0	40	20	50	0	0	0	25	17
	Private	80	80	60	60	50	100	100	100	75	78
	Other	0	20	0	20	0	0	0	0	0	4
TV, by share (%)	State	4	0	34	30	27	0	0	0	3	11
	Private	96	89	66	41	73	100	100	100	97	85
	Other	0	11	0	28	0	0	0	0	0	4

Source: Simeon Djankov, Caralee McLeish, Tatiana Nenova and Andrei Shleifer. Who Owns the Media? World Bank and Harvard University. May 2000

Note: State ownership, press (by count): The percentage state-owned newspapers out of the five largest daily newspaper (by circulation), 1999. State ownership, press (by share): The market share of state-owned newspapers out of the aggregate market share of the five largest daily newspaper (by circulation), 1999. State ownership, TV (by count): The percentage state-owned TV stations out of the five largest TV stations (by viewership), 1999. State ownership, TV (by share): The market share of state-owned TV stations out of the aggregate market share of the five largest daily newspaper (by circulation), 1999

Conclusion: Differently from the European media market, the Latin American Media market is highly privatized. ICT-convergence may lead to significant changes into the media sector, which plays a key role in a democratic and pluralistic Information Society.

Challenge: *Revise media regulation in the light of technological progress, assuring pluralistic and balanced content.*

C10. Ethical dimensions of the Information Society

WSIS: “24 c) Take appropriate measures—consistent with freedom of expression—to combat illegal and harmful content in media content.”

WSIS: “25 c) All actors in the Information Society should promote the common good, protect privacy and personal data and take appropriate actions and preventive measures, as determined by law, against abusive uses of ICTs such as illegal and other acts motivated by racism, racial discrimination, xenophobia, and related intolerance, hatred, violence, all forms of child abuse, including paedophilia and child pornography, and trafficking in, and exploitation of, human beings.”

TABLE 37
EXAMPLES OF CONTENT CONTROL LEGISLATION IN PERU
(2005)

Country/Municipality	Norm	Title	Year	Legislator
Peru	Ley N° 28119	Law prohibits the access of minors to WebPages with pornographic content	2003	Congreso de la República.
Consejo Distrital de Comas	Ordenanza N° 091	Enact dispositions about renting internet booths to minors in the district of Comas	2003	Consejo Distrital de Comas
Consejo Distrital de Los Olivos	Ordenanza N° 118	Approves norms that regulate the functioning of the public internet booths in the district of Los Olivos	2003	Consejo Distrital de Los Olivos
Municipalidad Distrital de Bellavista	Ordenanza N° 006-2003	Establish restrictions concerning the access to WebPages with pornographic content in public internet booths	2003	Municipalidad Distrital de Bellavista
Municipalidad Distrital de Jesus Maria	Ordenanza N° 115-2003	Decree that regulates the use of public internet booths by minors	2003	Municipalidad Distrital de Jesus Maria
Municipalidad Distrital de Magdalena del Mar	Ordenanza N° 139	Approves decrees that implement security mechanisms for the protection of children users of public internet booths	2003	Municipalidad Distrital de Magdalena del Mar
Municipalidad Distrital de San Juan de Miraflores	Ordenanza Municipal N° 000007-2003	Establishes restrictions concerning access to WebPages with pornographic content in public internet booths	2003	Municipalidad Distrital de San Juan de Miraflores
Municipalidad Distrital de San Martin de Porres	Ordenanza Municipal N° 045-2003	Establish dispositions applicable for establishments that offer the rent of public internet booths	2003	Municipalidad Distrital de San Martin de Porres
Municipalidad Distrital de San Miguel- Lima	Ordenanza N° 12-2003	Establish prohibitions and sanctions for the access of minors to WebPages with pornographic content in internet booths in the district of San Miguel	2002	Distrito de San Miguel.
Municipalidad Distrital de Santa Anita	Ordenanza N° 028-2003	Establish dispositions related to the operation of public internet booths in the district of Santa Anita	2003	Municipalidad Distrital de Santa Anita

Source: Alfa-Redi, Revista de Derecho Informático and ECLAC, 2005.

Conclusion: The example of content control in Peru shows the complexity of creating a coherent and harmonized legislative framework for the Information Society, as in this case when legislative power falls into different districts.

Challenge: *Provide local and regional legislators with appropriate technical assistance in order to create a coherent national legislative framework.*

C11. International and regional cooperation

WSIS: “26. International cooperation among all stakeholders is vital in implementation of this plan of action and needs to be strengthened with a view to promoting universal access and bridging the digital divide, inter alia, by provision of means of implementation.”

WSIS: “26 a) Governments of developing countries should raise the relative priority of ICT projects in requests for international cooperation and assistance on infrastructure development projects from developed countries and international financial organizations.”

WSIS: “27 b) ICTs should be fully mainstreamed into strategies for Official Development Assistance (ODA) through more effective donor information-sharing and co-ordination, and through analysis and sharing of best practices and lessons learned from experience with ICT-for-development programmes.”

WSIS: “27 d) Recognizing the potential of ICT for development we furthermore advocate: ii) developed countries and international financial organisations to be responsive to the strategies and priorities of ICTs for development, mainstream ICTs in their work programmes, and assist developing countries and countries with economies in transition to prepare and implement their national e-strategies. Based on the priorities of national development plans and implementation of the above commitments, developed countries should increase their efforts to provide more financial resources to developing countries in harnessing ICTs for development;”

FIGURE 58
MAJOR DONOR COUNTRIES OF BILATERAL COOPERATION FOR COMMUNICATION
PROJECTS IN LATIN AMERICA BY AMOUNT DONATED / NUMBER OF PROJECTS
(Percentage of the total) (1970-2003)

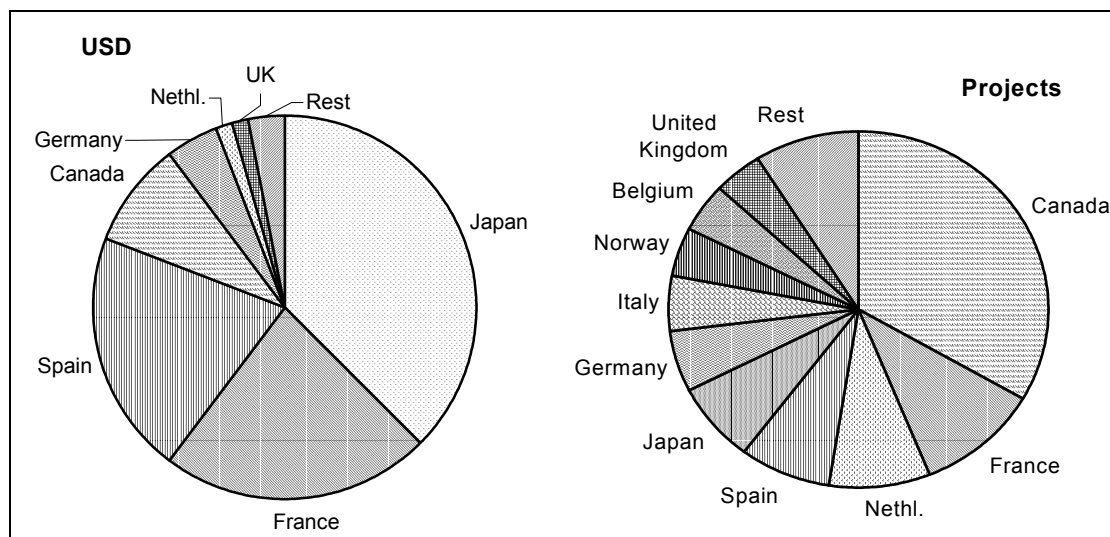
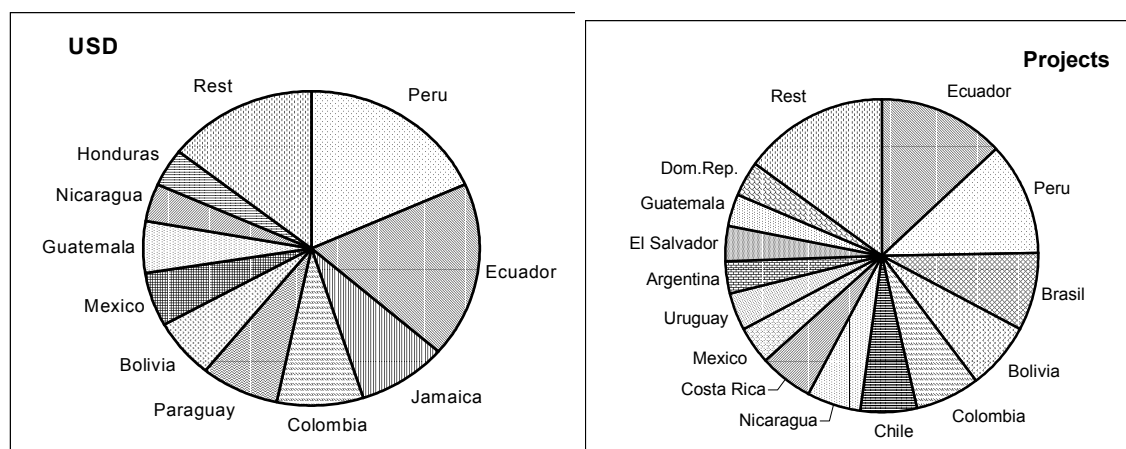


FIGURE 59
MAJOR RECEPTOR COUNTRIES OF BILATERAL COOPERATION FOR COMMUNICATION
PROJECTS IN LATIN AMERICA BY: AMOUNT DONATED / NUMBER OF PROJECTS
(Percentage of the total) (1970-2003)



Source: own calculations, based on: Accessible Information on Development Activities (AiDA), Development Gateway, 2004, <http://aida.developmentgateway.org/>.

Conclusion: While Japan's bilateral cooperation represents the largest amount of financial aid in the field of development assistance for communication projects, Canada is undertaking the highest number of projects in this field in the region. Peru and Ecuador are placing high emphasis in channeling development aid toward projects in the field of communication.

Challenge: Raise the relative priority of ICT projects in requests for international cooperation. Channel ODA toward the establishment and strengthening of national Information Society development plans.

D. Digital Solidarity Agenda

WSIS: “27. The Digital Solidarity Agenda aims at putting in place the conditions for mobilizing human, financial and technological resources for inclusion of all men and women in the emerging Information Society. Close national, regional and international cooperation among all stakeholders in the implementation of this Agenda is vital. To overcome the digital divide, we need to use more efficiently existing approaches and mechanisms and fully explore new ones, in order to provide financing for the development of infrastructure, equipment, capacity building and content, which are essential for participation in the Information Society.”

TABLE 38
EXAMPLES OF PUBLIC ACTION FOR INFORMATION SOCIETY FINANCING
(DEVELOPMENT BANKS, SPECIFIC FUNDS AND SCIENCE AND TECHNOLOGY FUNDS)
(2004)

ARGENTINA	INSTITUTION	PURPOSE OF ITS PROGRAMS	ADMINISTRATED BY
Public Development Bank	Banco Provincia de Buenos Aires (BAPRO)	R&D	BAPRO
Telecommunications Fund	Fondo Fiduciario del Servicio Universal (FFSU)	access	Fondo Fiduciario debe administrar los fondos para este servicio
Science and Technology Fund	Fondo Tecnológico Argentino (FONTAR)	R&D, training and assistance	Agencia Nacional de Promoción Científica y Tecnológica (ANPCYT)
	Fondo para la Investigación Científica y Tecnológica (FONCYT)	R&D, training and assistance	
BOLIVIA			
Telecommunications Fund	Fondo de acceso y servicio universal (FASU)	access	Superintendencia de Telecomunicaciones (SITTEL)

(continuation Table 38)

<i>BRAZIL</i>			
Public Development Bank	Banco do Desenvolvimento Econômico do Estado de Santa Catarina (BADESC)	R&D	BADESC
	Banco do Desenvolvimento de Minas Gerais (BDMG)	R&D	BDMG
	Banco Nacional do Desenvolvimento Econômico e Social (BNDES)	R&D, access	BNDES
	Financiadora de Estudos e Projetos (FINEP)	R&D, training and assistance, coordination	FINEP
	Banco do Nordeste	R&D	Banco do Nordeste
Telecommunications Fund	Fondo para el Desarrollo Tecnológico de las Comunicaciones (FUNTEL)	R&D, training and assistance	Ministerio de Comunicaciones
	Fondo de Universalización de Servicios de Telecomunicaciones (FUST)	access	
Science and Technology Fund	Fondo sectorial para la tecnología de la información	R&D	Ministerio de Ciencia y Tecnología
	Fondo para la Infraestructura (CT-INFRA)	access	
	Fondo Verde-Amarillo (FVA)	coordinación	
National Programs	Programas del Ministerio de Ciencia y Tecnología	R&D, training and assistance, coordination	Ministerio de Ciencia y Tecnología
<i>CHILE</i>			
Public Development Bank	Corporación de Fomento de la Producción (CORFO)	R&D, training and assistance	CORFO
Telecommunications Fund	Fondo de Desarrollo de las Telecomunicaciones (FDT)	access	Consejo de Desarrollo de las Telecomunicaciones (Ministerios de Economía, Hacienda y Planificación)
Science and Technology Fund	Fondo Nacional de Desarrollo Científico y Tecnológico (FONDECYT)	R&D	CONICYT
	Fondo de Fomento del Desarrollo Científico y Tecnológico (FONDEF)	R&D	
<i>COLOMBIA</i>			
Public Development Bank	Banco de Comercio Exterior de Colombia (BANCOLDEX)	R&D, training and assistance	BANCOLDEX
Telecommunications Fund	Fondo de Comunicaciones	access	Ministerio de Comunicaciones.
National Programs	Línea de Crédito BANCOLDEX-IFI-COLCIENCIAS	R&D, training and assistance	Instituto Colombiano para el Desarrollo de la Ciencia y la Tecnología (COLCIENCIAS)
<i>COSTA RICA</i>			
Public Development Bank	Banco Nacional de Costa Rica (BNCR)	R&D	BNCR
Telecommunications Fund	Fondo del Servicio Universal de las Telecomunicaciones (FOSUTEL)	access	Ejecución de los proyectos a cargo del ICE (Instituto Costarricense de Electricidad).

(continuation Table 38)

<i>ECUADOR</i>			
Public Development Bank	Corporación Financiera Nacional (CFN)	R&D, training and assistance	CFN
Telecommunications Fund	Fondo para el Desarrollo de las Telecomunicaciones en las Áreas Rurales y Urbano Marginales (FODETEL).	access	Consejo Nacional de Telecomunicaciones (CONATEL).
<i>EL SALVADOR</i>			
Public Development Bank	Banco Multisectorial de Inversiones (BMI)	R&D	BMI
Telecommunications Fund	Fondo de Inversión en Electricidad y Telefonía (FINET)	n.f.	Fondo de Inversión Social para el Desarrollo Local de El Salvador (FISDL) y Ministerio de Economía.
<i>GUATEMALA</i>			
Telecommunications Fund	Fondo para el Desarrollo de las Telecomunicaciones (FODETEL).	access	Agencia Nacional de Telecomunicaciones (ANTEL)
Science and Technology Fund	Fondo Nacional de Ciencia y Tecnología (FONACYT)	R&D, training and assistance	Consejo Nacional de Ciencia y Tecnología (CONCYT)
<i>HONDURAS</i>			
Telecommunications Fund	Fondo Social para Desarrollo de las Telecomunicaciones	access	Superintendencia de Telecomunicaciones (SIT)
<i>MEXICO</i>			
Science and Technology Fund	Fondos CONACYT	R&D, training and assistance	CONACYT
Telecommunications Fund	Fondo de Cobertura Social de Telecomunicaciones (FCST)	access	Comisión Nacional de Telecomunicaciones, CONACYT y Secretaría de Telecomunicaciones
National Programs	Programas del Consejo Nacional de Ciencia y Tecnología (CONACYT)	R&D, training and assistance	CONACYT
<i>NICARAGUA</i>			
Telecommunications Fund	Fondo de Inversión de las Telecomunicaciones (FITEL).	access	Secretaría de Comunicaciones y Transporte (SCT).
<i>PANAMÁ</i>			
Science and Technology Fund	Fondo de Modernización Tecnológica Empresarial (FOMOTEC)	R&D, training and assistance	Secretaría Nacional de Ciencia, Tecnología e Informática (SENACYT)
Telecommunications Fund	Fondo de Desarrollo de las Telecomunicaciones	access	ARESEP y Ministerio de Planificación y Política Económica
<i>PARAGUAY</i>			
Telecommunications Fund	Fondo de Servicios Universales.	access	Comisión Nacional de Telecomunicaciones. Ministerio de Economía y Finanzas.
<i>PERU</i>			

(continuation Table 38)

National Programs	Proyectos s/TI para el manejo de información genómica, dentro del Programa Peruano de Genomas	R&D, training and assistance	Consejo Nacional de Ciencia y Tecnología (CONCYTEC)
Telecommunications Fund	Fondo de Inversión en Telecomunicaciones (FITEL)	access	Comisión Nacional de CONATELunicaciones (CONATEL)
<i>DOM.REP.</i>			
Telecommunications Fund	(FDT) Fondo de Desarrollo de las Telecomunicaciones	access	Instituto Dominicano de las Telecomunicaciones (INDOTEL) y el FDT
<i>VENEZUELA</i>			
Telecommunications Fund	Fondo de Servicio Universal de Telecomunicaciones	access	Consejo Nacional de Telecomunicaciones (CONATEL)
National Programs	Programas de Desarrollo Tecnológico para el Fortalecimiento y Coordinación de la Acción Nacional en Ciencia y Tecnología	R&D, training and assistance	Ministerio de Ciencia y Tecnología – Consejo Nacional de Investigaciones Científicas y Tecnológicas (MCT-CONICIT)

Source: “Financiamiento para Desarrollo Tecnológico en América Latina”, Programa de Estudios Económicos e Información de la Asociación Latinamericana de Instituciones Financieras para el Desarrollo, Noviembre 2003; “Desarrollo Productivo en Economías Abiertas” (Cap. 6), CEPAL, 2004.

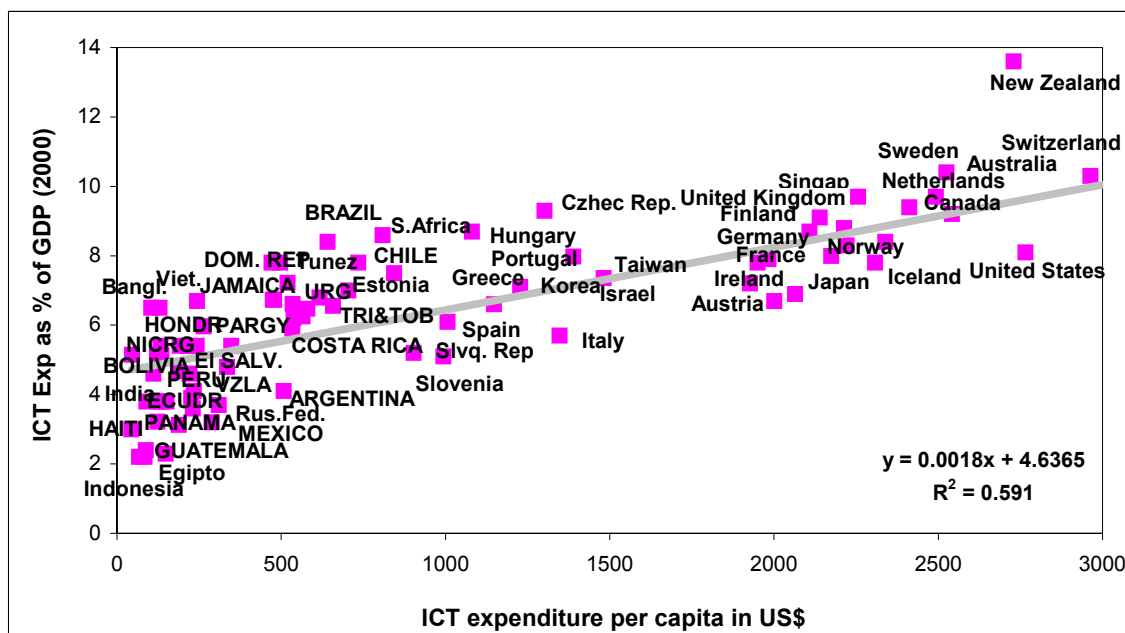
Conclusion: Various sources offinancing ICT and Information Society development are in place in Latin America and Caribbean countries.

Challenge: *Widen and strengthen national, regional and international financing mechanisms.*

D2. Mobilizing resources

WSIS: “27 a) All countries and international organizations should act to create conditions conducive to increasing the availability and effective mobilization of resources for financing development as elaborated in the Monterrey Consensus.”

FIGURE 60
ICT EXPENDITURES IN US\$ AND AS % OF GDP
(2001)



Source: own calculations, based on World Bank 2002, World Development Indicators 2002; in “The Global Information Technology Report: Readiness for the Networked World”, Soumitra Dutta, Bruno Lanvin, Fiona Paua.

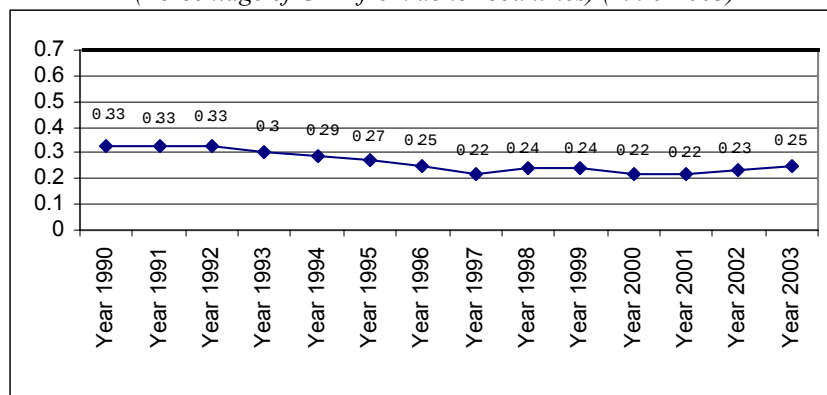
Note: sample of 82 countries; “ICT expenditure” is defined as external ICT spending (the purchase of ICT products), domestic ICT spending (expenditure on domestically customized technology) and spending on telecommunications and other office equipment.

Conclusion: National ICT expenditures (in % of GDP) are near or above world average (8,4% of GDP in Brazil; 7,8% in Chile and the Dominican Republic). Developing countries place considerable priority to ICT spending, which in some cases is higher than some developed countries. Nevertheless, in absolute terms the situation is different. Latin American and Caribbean economies spend about 400 USD per capita on ICT a year while most developed countries reach 2000-3000 USD annually.

Challenge: *As many developing countries may not be able to place more financial priority to ICT investment, further assistance may be required.*

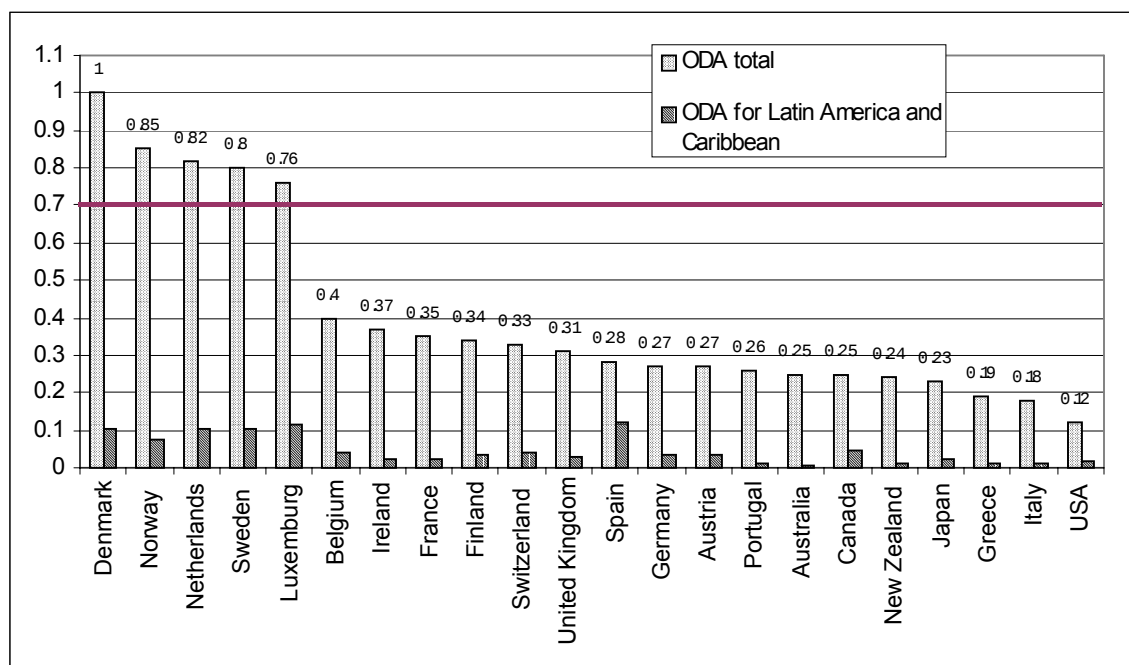
WSIS: “27 b) Developed countries should make concrete efforts to fulfil their international commitments to financing development including the Monterrey Consensus, in which developed countries that have not done so are urged to make concrete efforts towards the target of 0.7 per cent of gross national product (GNP) as ODA to developing countries and 0.15 to 0.20 per cent of GNP of developed countries to least developed countries.”

FIGURE 61
DEVELOPMENT OF ODA
(Percentage of GDP from donor countries) (1990-2003)



Source: OECD, Cooperation Report, 2003.

FIGURE 62
TOTAL ODA AND ODA DESIGNATED TO LATIN AMERICA AND THE CARIBBEAN FROM SELECTED DONOR COUNTRIES
(Percentage of GDP) (2001-2002)



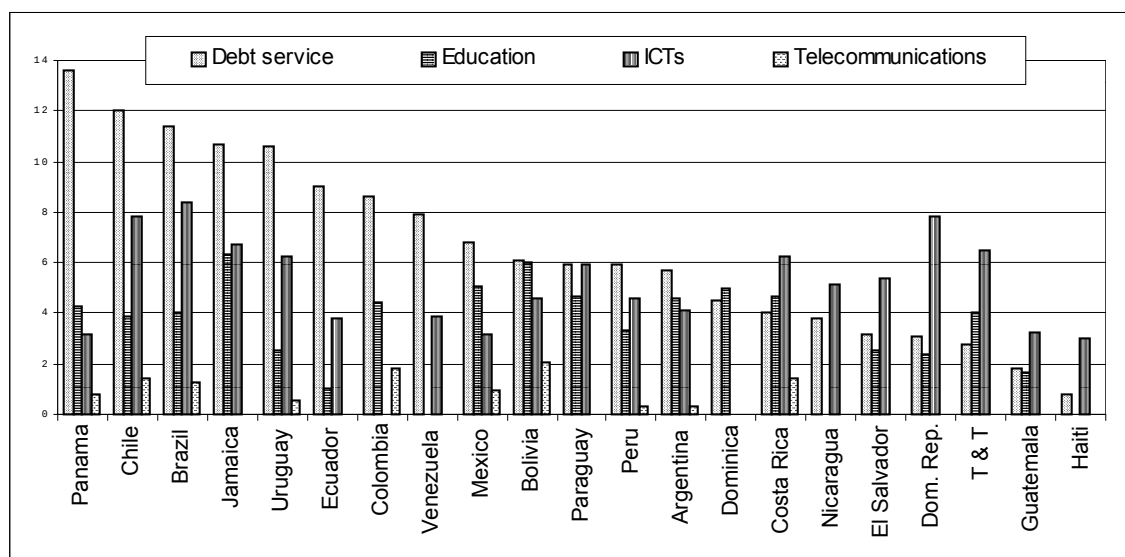
Source: OECD, Cooperation Report, 2003.

Conclusion: The self-set targets and the international commitments to finance development are far from being accomplished. In absolute terms, the largest donors for Latin America and the Caribbean include Netherlands, United States, Japan and Spain.

Challenge: Increase effort to fulfill the international commitment to financing development, for the benefit of a global Information Society.

WSIS: “27 c) For those developing countries facing unsustainable debt burdens, we welcome initiatives that have been undertaken to reduce outstanding indebtedness and invite further national and international measures in that regard, including, as appropriate, debt cancellation and other arrangements. Particular attention should be given to enhancing the Heavily Indebted Poor Countries initiative. These initiatives would release more resources that may be used for financing ICT for development projects.”

FIGURE 63
DEBT SERVICES VS. EDUCATION VS. ICT VS. TELECOMMUNICATIONS
(Expenditures as percentage of GDP) (2003)



Source: own calculations, based on: ITU World Telecommunications Database, 2004, UNDP Human Development Report, 2004.

Conclusion: In many countries in the region, payments for debt services are higher than expenditures for public education or ICT.

Challenge: *Innovative solutions need to be found to relieve indebted countries and to release more resources to finance the transition to an Information Society for all.*

WSIS: “27 d) Recognizing the potential of ICT for development we furthermore advocate: i) developing countries to increase their efforts to attract major private national and foreign investments for ICTs through the creation of a transparent, stable and predictable enabling investment environment; [...] iii) the private sector to contribute to the implementation of this Digital Solidarity Agenda.”

WSIS: “27 g) Countries should consider establishing national mechanisms to achieve universal access in both underserved rural and urban areas, in order to bridge the digital divide.”

TABLE 39

UNIVERSAL ACCESS FUNDS
(2003)

Country	Fund Denomination	Year of Issue	Legal Foundation	Administrating authority
Argentina	Fondo Fiduciario del Servicio Universal (FFSU)	1999	Reglamento General del Servicio Universal (RGSU). Decreto N° 764/2000 Anexo III; Reglamento General de Servicio Universal (RGSU) Resolución SC N° 18971/99	Fondo Fiduciario debe administrar los fondos para este servicio
Brazil	Fondo de Universalización de Servicios de Telecomunicaciones (FUST)	2000	Lei Institui o Fundo de Universalização dos Serviços de Telecomunicações. Instituído pela Lei no 9.998, from August 2000 and Decreto no 3.624, from October 2000	Ministerio de Comunicaciones
Chile	Fondo de Desarrollo de las Telecomunicaciones (FDT)	1994	Decreto Reglamento del Fondo de Desarrollo de las Telecomunicaciones	Consejo de Desarrollo de las Telecomunicaciones (Ministerios de Economía, Hacienda y Planificación, tres profesionales)
Colombia	Fondo de Comunicaciones	1994	Ley 142 de 1994; Ley 422 de 1998.	Ministerio de Comunicaciones
Costa Rica	Fondo del Servicio Universal de las Telecomunicaciones (FOSUTEL)	Projecte d	Ley de energía y telecomunicaciones. Artículo 234	Ejecución de los proyectos a cargo del ICE (Instituto Costarricense de Electricidad)
Ecuador	Fondo para el Des. de las Telecom. en Áreas Rurales y Urbano Marginales (FODETEL)	2000	Reglamento del Fondo para el Desarrollo de las Telecomunicaciones en áreas rurales y urbano marginales.RESOLUCION No.394-18-CONATEL-2000.	Consejo Nacional de Telecomunicaciones (CONATEL)
El Salvador	Fondo de Inversión en Electricidad y Telefonía (FINET)	1998	Ley del Fondo Especial de los Recursos Provenientes de la privatización de ANTEL. Decreto Legislativo N°: 605. 06-05-1999.	Fondo de Inversión Social para el Desarrollo Local de El Salvador (FISDL) y Ministerio de Economía
Guatemala	Fondo para el Desarrollo de las Telecomunicaciones (FODETEL)	1996	Ley General de Comunicaciones (Decreto 94-96).	Administración Nacional de Telecomunicaciones (ANTEL)
Honduras	Fondo Social para Desarrollo de las Telecomunicaciones	2004	Ley marco del sector de Telecom. DECRETO No.218-2003	Superintendencia de Telecomunicaciones (SIT).
Mexico	Fondo de Cobertura Social de Telecomunicaciones (FCST)	2002	Ley Federal de Telecomunicaciones. August 28, 2002.	Comisión Nacional de Telecomunicaciones (CONATEL Secretaría de Comunicaciones;.
Nicaragua	Fondo de Inversión de las Telecomunicaciones (FITEL)	Projecte d	Ley General de Telecomunicaciones y Servicios Postales. Ley No. 200/95.	Secretaría de Comunicaciones y Transporte (SCT).
Panama	Fondo de Desarrollo de las Telecomunicaciones	1997	Ley del Fondo de Desarrollo de las Telecomunicaciones. Artículo 21 del Decreto Ejecutivo No. 73 9 of April, 1997.	ARESEP y Ministerio de Planificacion Y Política economica
Paraguay	Fondo de Servicios Universales	1995	Reglamento del Fondo de Servicios Universales, Ley n° 642/95 de Telecomunicaciones. Capitulo II. Artículo 97	Comisión Nacional de Telecomunicaciones. Ministerio de Economía y Finanzas

(continuation Table 39)

Peru	(FITEL) Fondo de inversión en Telecomunicaciones	1993	Ley de Telecomunicaciones (D.S. N° 013-93-TCC del 6 de Mayo de 1993)	OSIPITEL. Ministerio de Transportes y Comunicaciones.
Dominican Republic	(FDT) Fondo de Desarrollo de las Telecomunicaciones	2001	Reglamento del Fondo de Desarrollo de las Telecomunicaciones, 23 of March, 2001	Instituto Dominicano de las Telecomunicaciones (INDOTEL) y el FDT.
Venezuela	Fondo de Servicio Universal de Telecomunicaciones	2000	Reglamento de la Ley Orgánica de Telecomunicaciones sobre el Servicio Universal de Telecomunicaciones.12 of June, 2000	Consejo Nacional de Telecomunicaciones (CONATEL)

Conclusion: Universal access funds in the telecommunications sector exist in many countries. Moreover, the region is a world reference in this area. Such funds can be considered as a first step towards “national digital solidarity funds”.

Challenge: Assess functionality, efficacy and goals of existing funds and investigate international cooperation schemes to broaden their application. The expansion of these funding mechanisms to the ICT sector beyond telecommunications must be evaluated.

E. Follow-up and evaluation

WSIS: “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.”

WSIS: “28 b) Appropriate indicators and benchmarking, including community connectivity indicators, should clarify the magnitude of the digital divide, in both its domestic and international dimensions, and keep it under regular assessment, and tracking global progress in the use of ICTs to achieve internationally agreed development goals, including those of the Millennium Declaration.”

WSIS: “28 c) International and regional organizations should assess and report regularly on universal accessibility of nations to ICTs, with the aim of creating equitable opportunities for the growth of ICT sectors of developing countries.”

WSIS: “28 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.”

TABLE 40
RECOMENDED INDICATORS FOR HOUSEHOLD SURVEYS TO MONITOR THE
INFORMATION SOCIETY DEVELOPMENT IN LATIN AMERICA AND THE CARIBBEAN
(2004)

8 Core Questions for regular household surveys		Response Options	Already used by		
			Intern. Reference	LAC countries	Observed Unit
H-1	Does this household have a fixed line telephone?	Yes No	STATCAN, EUROSTAT, OECD	All countries (20)	Household
H-2a	Does this household have a mobile telephone?	Yes No	ABS, STATCAN, OECD	19 countries	Household
H-2b	How many members of the household have access to a mobile phone?	Number	-	-	Household
H-3	Does this household have TV?	Yes No	-	19 countries	Household
H-4	Does this household have a personal computer (PC)?	Yes No	ABS, STATCAN, OECD, EUROSTAT	All (20)	Household
H-5	Does this household have an Internet access at home?	Yes No	ABS, STATCAN, OECD, EUROSTAT	All (20)	Household
H-6	Where did you use the Internet most frequently in the last 3 months? <i>(tick all that apply)</i>	Did not access At Home At Work Educational Facility Free public access center (specific denomination depends on national practices) Commercial public access center (specific denomination depends on national practices) House of friend or neighbor Others	STATCAN, EUROSTAT, OECD	Bb, Cl, Co, Cr, Mx, TT	Individual(s) of the household
H-7a	How often did you usually access the Internet in the last 3 months? <i>(tick one)</i>	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 Do not know	STATCAN, EUROSTAT, OECD	Bb, Co, Mx, TT	Individual(s) of the household that use the Internet
H-7b	How many hours did you usually access the Internet weekly over the last 3 months?	Number of hours per week Do not know	-	-	Individual(s) of the household that use the Internet
H-8	For what services/activities did you use the Internet in the last 3 months? <i>(tick all that apply)</i>	Communication (e-mail, chat) Information search Purchasing/ordering goods or services Health related activities Education, research and related activities Interaction with public authorities Using electronic banking or other financial services Reading/downloading online newspapers/news magazines Playing/downloading games, music, software Other	ABS, STATCAN, EUROSTAT, OECD,	Bb, Cl, Co, Cr, Mx, TT	Individual(s) of the household that use the Internet

TABLE 41
RECOMENDED INDICATORS FOR BUSINESS SURVEYS TO MONITOR THE
DEVELOPMENT OF THE INFORMATION SOCIETY IN LATIN AMERICA AND THE
CARIBBEAN
(2004)

5 Core Questions for regular business surveys		Response Options	Already used by		
			Intern. Reference	LAC countries	Observed Unit
B-1	How many personal computers (PCs) does the enterprise have?	None Number Do not know	STATCAN	Cl, Co, Pe, TT	Enterprise
B-2	Does the enterprise have access to the following networks? <i>(tick all that apply)</i>	Internet LAN Intranet Extranet	ABS, STATCAN, EUROSTAT, OECD,	Ar, Bb, Br, Bz, Cl, Co, Cr, Mx, Pa, Pe, S, TT, Uy	Enterprise
B-3	Does the enterprise have a website?	Yes No In construction	ABS, STATCAN, EUROSTAT, OECD,	Ar, Bb, Br, Cl, Co, Mx, Pe, TT, Uy	Enterprise
B-4	What is the share of the total number of employees using a PC connected to the Internet in their normal work routine?	% of total employees Do not know	STATCAN, EUROSTAT, OECD,	Ar, Cl, Co, TT, Uy	Enterprise with Internet access
B-5	What services/activities does the enterprise use the Internet for [external focus]? <i>(tick all that apply)</i>	Communication (e-mail, chat) Information search Placing orders Receiving orders Financial services Interaction with public authorities Marketing or client support Education, research or training Other	STATCAN, EUROSTAT, OECD,	Cl, Co, Pe, TT	Enterprise with Internet access

Conclusion: Through deliberations among 17 National Statistic Organisms from the region, the Workshop on Information Society Measurement for Latin America and the Caribbean, held with the support of OSILAC under the mandate of the Statistical Conference of the Americas (SCA-ECLAC) in November 2004 in Santiago de Chile, defined the above listed core-questions for household and business surveys.

Challenge: *Foster cooperation and technical assistance mechanisms among statistical authorities in the region to advance in the field of statistical harmonization and data collection.*