

Where do Latin America and the Caribbean Stand in Relation to the eLAC 2007 Plan of Action? Evidence from Available Information

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



October 2005

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The views expressed in this document are those of the authors and cannot be taken to reflect the official opinion of the European Union or any of the other organizations involved in its preparation.

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I. Challenges in Benchmarking and Monitoring a Plan of Action

Benchmarking and monitoring any multi-country, multi-thematic Plan of Action is a necessary but extremely difficult task. Quantifying goals set forth in a regional Action Plan related to a new and innovative subject such as information society development is even more challenging. Goals may not be objectively measured, subjects may be very recent, indicators may not have been developed and/or information may simply not exist regarding the status of, and advancements in, Information and Communication Technologies (ICTs) in Latin America and the Caribbean. It is for this reason that paragraph 28(f) of the Plan of Action of the World Summit on the Information Society (WSIS) stated that "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. In light of the fact that Latin America and Caribbean countries have agreed, through eLAC 2007, to take up the challenge of effectively using ICTs for development, their policy goals cannot be held up by a lag in the area of statistics.

There is a strong interdependence between implementing policies to achieve agreed targets and monitoring them, but this link has only partially been realized. Despite the fact that indicators are scarce and evidence anecdotal, efforts to make the necessary assessments must be initiated. Policy makers recognize this: target 26.1 of eLAC2007 states explicitly the need to develop ICT indicators, differentiated by socioeconomic characteristics, leading to the capability of all actors involved with the information society to monitor, access and utilize technology.

The information presented in this document is incomplete. OSILAC compiled data from different sources and countries, available from public sources such as the Internet, studies, news media and project reports, among others. In some cases, the source of potential statistics, such as a national authority, lacks the resources to publish available information. Nevertheless, baselining, benchmarking or monitoring developments associated with the eLAC2007 Plan of Action is fundamentally important for supporting policy actions designed to meet the planned objectives. Thus, this exercise is merely an initial attempt to define, wherever possible, where the region stands and what challenges lie ahead.

All information has undergone a minimum quality screening, and OSILAC invites all stakeholders to comment, contribute and provide additional information to improve the present

document. Ultimately, it is the responsibility of all to share and improve data on information society development in Latin America and the Caribbean. OSILAC is offering to serve as a regional clearinghouse for this challenging task.

Searching out information related to eLAC 2007

eLAC2007 pursues two types of goals: results-based goals that can be objectively measured; and actions-based goals that set out steps to be taken to achieve expected results. The relation between available statistics for benchmarking result-based goals, on the one hand, and agreed policy goals, on the other, is purely coincidental.

Thus, this represents an initial attempt to quantify a selection of 35 out of 70 action lines outlined in the 30 eLAC2007 goals. This is largely a baseline exercise, as opposed to any type of benchmarking, and the two should not be confused. OSILAC used information provided by different sources, including official statistics from national statistics offices, administrative registries, such as regulatory authorities, and academic and private sources.

Paralleling this effort to compile existing information, National Statistical Offices (NSOs) are using OSILAC as a regional forum to discuss the development of harmonized ICT core indicators to be included in household and business surveys or in specific regional ICT surveys. Including ICT questions in existing questionnaires does not only create scale, but also makes it possible to crossreference ICT indicators with other socioeconomic measurements and to mainstream ICT usage into general development issues. In order to promote this, and in accordance with goal 26.3 of eLAC2007, stakeholders of the statistical community are regularly meeting to “carry out annual technical seminars, with the participation of national and regional statistical offices.” Beyond this ongoing technical cooperation with NSOs, OSILAC is also supporting telecommunications regulatory entities (members of REGULATEL) to improve and harmonise administrative registries.

Proposals for future benchmarking of eLAC 2007

While all governments in the region have started to “promote and strengthen national action plans for the development of the information society” (target 22.1 eLAC2007), many of them are currently searching for national follow-up mechanisms to monitor the advances of their strategies and initiatives. Since national priorities differ, national monitoring mechanisms and methodologies need to be adjusted accordingly. However, in order to ensure international comparability, it would be highly useful, from the start, to have a common denominator, while at the same time taking account of national interests.

OSILAC therefore provides technical cooperation to ensure comparability as regards the eLAC2007 targets, while at the same time coordinating cooperation among different institutions. This could include providing expertise and training, as well as organizing virtual and face-to-face meetings to coordinate the harmonization of statistical information.

II. The Regional Plan of Action (eLAC 2007)

eLAC2007, together with the Rio Commitment, was approved during the Regional Ministerial Conference Preparatory to the World Summit on the Information Society in Rio De Janeiro, Brazil, in June 2005.

The Plan of Action is organised under five chapters: Access and Digital Inclusion (7 goals); Capacity Building and Knowledge Creation (7 goals); Public Transparency and Efficiency (7 goals); Policy Instruments (5 goals) and Enabling Environment (4 goals).

Goals are related to 70 actions; each has a deadline falling between 2005 and 2007.

A. Access and digital inclusion		
Goal	Action	Deadline
1 Regional Infrastructure	1.1 Promote the development of regional ICT infrastructure, including broadband capacity through backbones and interconnection of existing Network Access Points (NAP) with root servers, mirror servers and traffic exchange points.	Mid-2007
	1.2 Conduct regional studies that guide the development of this infrastructure and that take into account the need to increase security and trust and the cost-benefit factors of ICT within the framework of existing international, regional and sub-regional agreements.	Mid-2006
	1.3 Promote the creation of sustainable schemes and models for ICT penetration in the different countries of the region, as well as the generation of local associative proposals designed to arrange for improved connectivity conditions, particularly in disadvantaged areas.	Mid-2007
2 Community Centres	Considering the different sub-regional, national, and local realities:	
	2.1 Reduce by half the potential national average user base per community Internet access centres, or reduce its coverage to 20,000 people per centre, regardless of whether it is public or private.	Mid-2007

	2.2 Foster the quality and ensure the sustainability of Internet access centres, with community participation within a framework of respect for cultural diversity, and considering the needs of people with disabilities in accordance with international standards.	Mid-2007
	2.3 Offer training and information services, including, among others, those provided by radio and television based in local communities.	Mid-2007
	2.4 Support media based in local communities and projects that combine the use of traditional media with new technologies to facilitate the use of local languages, to document and preserve local heritage, including the landscape and biodiversity, and as a means of reaching out to rural, isolated and nomadic communities.	Mid-2007
3 Online schools and libraries	Considering local realities, particularly in rural, isolated or marginal areas:	
	3.1 Double the number of public schools and libraries that are connected to the Internet or connect one third of them, if possible via broadband, particularly those located in rural, isolated or marginal areas, while setting the application of ICTs in education within the context of local realities.	Mid-2007
	3.2 Considerably increase the number of computers per student in educational establishments and encourage its efficient use for learning.	Mid-2007
	3.3 Train at least one third of teachers in the use of ICTs.	Mid-2007
4 Online health centres	4.1 Double the number of health centres and hospitals in the region that are connected to the Internet or connect one third of them.	Mid-2007
	4.2 Promote ICT training programmes in health centres and hospitals	Mid-2007
5 Employment	Create a regional working group to:	
	5.1 Promote ICT capacity-building for the development of new forms of work and telework, encouraging their application, in particular, for local job creation.	Mid-2007
	5.2 Facilitate the creation of a network of social stakeholders to foster an exchange of experiences and to formulate proposals for creating local employment and jobs.	Mid-2007
	5.3 Maintain updated information on necessary skills and knowledge to ensure the region's inclusive and sustainable development.	Mid-2007
6 Local government	6.1 Connect at least half of local urban governments and one third of local rural governments to the Internet, ensuring local governments' staff capacity in relation to ICTs.	Mid-2007
	6.2 Encourage synergy in service delivery, including the provision of digital or analogue services, while supporting national ICT suppliers, applications and content, between local and national governments.	Mid-2007

	6.3 Promote ICT training programmes for local public officials.	Mid-2007
	6.4 Stimulate local development of information and access to local information, considering local and indigenous languages and the needs of people with disabilities.	Mid-2007
	6.5 Disseminate ICT access models in remote or rural areas with a view to encouraging their adoption in order to optimize local government administration, as well as improvements in the competitiveness of local productive capacity.	Mid-2007
7 Alternative technologies	<p>Within the framework of existing efforts and in constant dialogue with the private sector and other sectors of society:</p> <p>7.1 Create a regional working group to elaborate proposals on options and strategies for the development of digital television and other wired and wireless technologies in Latin America and the Caribbean, examining standards, interactivity and applications for the provision of universal access.</p> <p>7.2 Consider carrying out, among other activities of the group, pilot tests of digital television applications and other available interactive technologies under different circumstances and in various countries of the region.</p>	<p>Mid-2007</p> <p>Mid-2007</p>
B. Capacity-building and knowledge creation		
Goal	Action	Deadline
8 Software	<p>8.1 In the context of efficiency and social inclusion, establish a regional working group to exchange experiences and criteria used for the development and use of open-source software and free software, which includes studies on technical, economic, organizational, training and security challenges.</p> <p>8.2 In the context of criteria of efficiency and social inclusion, the group will also analyse the use of proprietary software in order to disseminate best practices and to maximize efficiency, coexistence with other forms of licensing, interoperability and possibilities of migration.</p> <p>8.3 Promote and encourage the development of the software industry, content, applications and informatics services, using such instruments as an appropriate legal framework, measures to strengthen the university-enterprise relationship, measures to promote complementary and cooperative business partnerships, human resources development and the expansion of access to markets.</p>	<p>End of 2006</p> <p>End of 2006</p> <p>Mid-2007</p>
9 Training	9.1 Provide ICT literacy training to at least 2.5% of the working-age population annually, taking into account gender equity, focusing on entrepreneurs, professionals and workers in micro-enterprises and small businesses; on public servants; on disadvantaged, marginalized or vulnerable communities; and on the unemployed and making content available for these purposes that is directed towards indigenous peoples and communities.	Mid-2007

	9.2 Formulate and disseminate ICT training programmes for women aimed at improving their position in the labour market, developing innovative potentials and strengthening solidarity networks at the national and regional levels.	Mid-2007
10 Research and education networks	10.1 Develop and expand at the national, sub-regional -- especially in the Caribbean -- and regional levels advanced ICT-based networks for research and education while strengthening existing networks, such as the CLARA network.	End of 2006
	10.2 Interconnect these networks with similar networks in other regions.	End of 2006
11 Science and technology	11.1 Promote national, sub-regional and regional interactive and cooperative networks among scientific and technological institutions, involving them in local production systems and promoting the creation of technology poles and parks in the countries of the region that can develop innovation activities for the production of high-value-added goods and services.	Mid-2007
	11.2 Promote the development of local technology industries involved in the supply of inputs and technology for the development and maintenance of infrastructure.	Mid-2007
	11.3 Promote production and regional exchange of local, national and regional content, and its indexation by and for all actors of society, that strengthen citizen participation and human development, especially content linked to science, technology, digital inclusion and training for employment.	Mid-2006
12 Firms	12 Promote ICT training and support strategies for micro-, small and medium-sized enterprises and ventures.	Mid-2007
13 Creative and content industries	13.1 Establish a regional working group, with the participation of all stakeholders, to research the development and challenges of creative industries and content-development industries, while forming regional cooperation mechanisms and seeking solutions for common problems, such as the financing of an economy of intangible goods, distribution of cultural goods and services, and communication in the region, and perfecting the capacity for local production of content that respects diversity and cultural identity.	Mid-2006
	13.2 Foster, in local communities, a network of social stakeholders that are committed to the production and diffusion of cultural goods that contribute to the reinforcement of regional identity and the development of local employment.	Mid-2007
	13.3 Support media based in local communities for the creation of original content that meets their information and development needs and that addresses their linguistic and cultural diversity and identity, taking into account social initiatives.	Mid-2007
14 Internet Governance	Taking into account the “Geneva principles” adopted in the first phase of the World Summit, particularly those of multilateralism, transparency and democracy in Internet governance and ongoing initiatives:	
	14.1 Promote regional dialogues, exchanges and cooperation on national experiences in Internet governance; training in Internet resource management (domain names, IP numbers and protocols); international interconnection costs, cyber-security, spam, and related institutional and technological aspects.	Mid-2007
	14.2 Participate actively in the tasks of the Working Group on Internet Governance of the United Nations, while it exists.	End of 2005

C. Public transparency and efficiency		
Goal	Action	Deadline
15 Electronic government	15.1 Create and/or strengthen instruments for exchanging e-government services, such as the e-Government Network of Latin America and the Caribbean (REDGEALC), developing regional cooperation for the transfer of technologies, platforms, applications and software, as well as the corresponding knowledge, skills and best practices.	Mid-2007
	15.2 Form a working group to elaborate an agenda of priorities for the implementation of interoperability standards for e-government services.	Mid-2006
	15.3 Promote the electronic integration of public administrative systems via one-stop shops in order to improve the management of intragovernmental procedures and processes.	Mid-2007
	15.4 Contribute to the use of electronic/digital signatures in governmental procedures, both by public officials and civil servants and by citizens.	Mid-2007
	15.5 Promote the adoption of information security and storage models at all levels of government with a view to engendering trust in the digital information managed or provided by the State.	Mid-2007
	15.6 Promote the adoption or development of electronic means of payment for the purpose of encouraging the use of e-transactions with the State.	Mid-2007
	15.7 Promote electronic contracting mechanisms in government.	Mid-2007
	15.8 Promote the creation of mechanisms for standardizing and consolidating geo-referenced information with a view to providing decision-making tools for government and the private sector.	Mid-2007
16 Electronic education	16.1 Promote and strengthen national networks of educational portals, including public, private and civil society initiatives, with special attention being devoted to the Millennium Development Goals on universal primary education and to multicultural content, especially content oriented towards indigenous peoples.	Mid-2007
	16.2 Link national educational portals with a view to establishing a Latin American and Caribbean network of educational portals so that educational experiences and content can be shared, and promote the adaptation, localization and development of educational content for dissemination via this network.	Mid-2007
17 Electronic health	17.1 Promote and strengthen national health service networks, including public, private and civil society initiatives.	Mid-2007
	17.2 Promote and strengthen regional health information networks, such as those of the Pan American Health Organization and the Regional Library of Medicine and Health Sciences (BIREME), with attention being devoted to convergence towards common standards for interoperability, to application and software exchange, and to virtual health library portals.	Mid-2007
18 Disasters	18 Strengthen the regional and international interconnection of digital information networks for disaster prevention, while considering regional administration and coordination of assistance in the event of disasters.	Mid-2007
19 Electronic justice	19.1 Encourage existing regional initiatives to integrate ICTs in national justice systems, such as the e-justice project being promoted by the supreme courts of the Latin-American countries.	Mid-2006
	19.2 Implement a regional agenda to integrate ICTs into justice systems.	Mid-2006

20 Environmental protection	20 Promote and strengthen existing regional initiatives for the use of ICTs for environmental protection and the sustainable use of natural resources, considering the concurrence of the public and private sectors, civil society, and indigenous peoples and communities.	Mid-2007
21 Public information and cultural heritage	21.1 Promote and encourage initiatives and policies that, through the use of ICTs, provide citizens with wider access to public information and to the cultural, historic, scientific and educational heritage, including its preservation in electronic media.	Mid-2007
	21.2 Foster a regional dialogue for the exchange of experiences, as well as the diffusion and adaptation of good practices.	Mid-2007
D. Policy instruments		
Goal	Action	Deadline
22 National strategies	22.1 Establish or confirm a coordinating entity or mechanism for national strategies in every country of the region, which takes into account participation by civil society and the private sector.	November 2005
	22.2 Promote and strengthen national action plans for the development of the information society in all countries of the region, ensuring participation by civil society and the private sector, as well as relevant entities of the public sector.	Mid-2007
23 Financing	23.1 Establish a working group with members of public, private, subregional, regional and international organizations to evaluate national and regional needs for financing ICT development.	November 2005
	23.2 Suggest initiatives for optimizing the use of financial resources and instruments and, if necessary, propose new ones, with the aim of mobilizing more resources, considering subregional, regional and international financial and cooperation agencies and the particular features of each country.	Mid-2007
24 Universal access policies	24.1 Examine, with the active participation of civil society, the private sector and academia, public policies for universal access, expanding this concept to include all ICTs in order to advance towards a second generation of universal access programmes.	Mid-2006
	24.2 Carry out and support, with the active participation of civil society, the private sector and academia, systematic efforts to hold a regional dialogue on technology and service convergence and public policies oriented towards the universalization of access and cost reduction in Internet access in order to include low-income sectors and rural or remote areas.	Mid-2007
25 Legislative framework	25 Establish subregional working groups to promote and foster policies for harmonizing norms and standards, with the aim of establishing legislative frameworks that merit trust and offer security at both the national and regional levels, paying special attention to legislation on the protection of privacy and personal data, cyber-crime and ICT crime, spam, digital or electronic signatures, and electronic contracts as a framework for the development of the information society.	November 2005

26 Indicators and measurement	26.1 Support and foster, with technical cooperation programmes, institution-building and methodological strengthening and the development of ICT access and usage indicators, differentiated by gender and social group and in accordance with the ITU definitions of community access indicators and the recommendations of the World Summit side event on monitoring the information society, taking into account their ongoing evolution and incorporating them into questionnaires and statistical instruments suited to the regional reality.	Mid-2007
	26.2 Elaborate comparative studies on the economic and social impact of ICTs, particularly in reference to previously agreed national and international development goals, including the Millennium Development Goals and the objectives set forth in the World Summit Plan of Action related to indigenous peoples.	Mid-2007
	26.3 Carry out annual technical seminars, with the participation of national and regional statistical offices, such as those of the Observatory for the Information Society in Latin America and the Caribbean (OSILAC).	Mid-2007
E. Enabling environment		
27	27. Establish a regional mechanism for follow-up to the themes of the World Summit and the implementation of eLAC 2007 in accordance with the situation and priorities of each country, taking advantage of the existing structures and regional cooperation agencies, within the framework of their capacities and competencies, and in close collaboration with civil society, the private sector and the academic sector, taking into account the agreements reached in the Geneva and Tunis phases of the World Summit, as well as in the regional conferences in Bávoro and Rio de Janeiro.	Mid-2006
28	28. Promote concrete measures of solidarity and assistance to facilitate access to the benefits of the information society by the region's relatively less developed countries, small island developing States and other countries facing special difficulties in applying their national strategies for the development of the information society.	Mid-2006
29	29. Devise concrete regional initiatives and proposals for overcoming obstacles to the effective implementation of national strategies for the development of the information society arising from the prevailing international economic, trade and financial order, exploring possible formulas, such as debt relief, as a means of promoting investment to boost infrastructure development and training in the use and development of ICTs.	Mid-2006
30	30. Request that the ITU and relevant regional organizations report on a regular basis to the Summit's follow-up mechanism on activities to safeguard the use of the radioelectric spectrum in the public interest, in accordance with the principle of legality and in full observance of relevant international laws and agreements, as well as national and international regulations.	Mid-2006

III. Quantifying eLAC 2007. An initial attempt to baseline some targets

Earlier in 2005, ECLAC undertook an effort to compile existing Latin American and Caribbean Information related to the WSIS Plan of Action (ECLAC 2005). In that document, information, organized and presented according to different WSIS Plan of Action targets, was presented, along with a short summary of the evidence for each, followed by a statement of the challenges facing the region. This document presents evidence in the same manner (see box 1).

Out of the 30 goals, comprising 70 actions, OSILAC-ECLAC compiled evidence for 29 actions. Coverage varies substantially according to period and region, indicating that care must be taken in considering the information compiled for benchmarking and monitoring purposes, as well as in drawing policy conclusions and implications.

<p>Action n: “corresponding citation of eLAC Plan of Action”</p> <p>EVIDENCE: GRAPH(S) OR TABLE(S) Source of graph or table.</p> <p>Summary: “.....”.</p> <p>Challenge: “.....”.</p>
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A. Access and digital inclusion

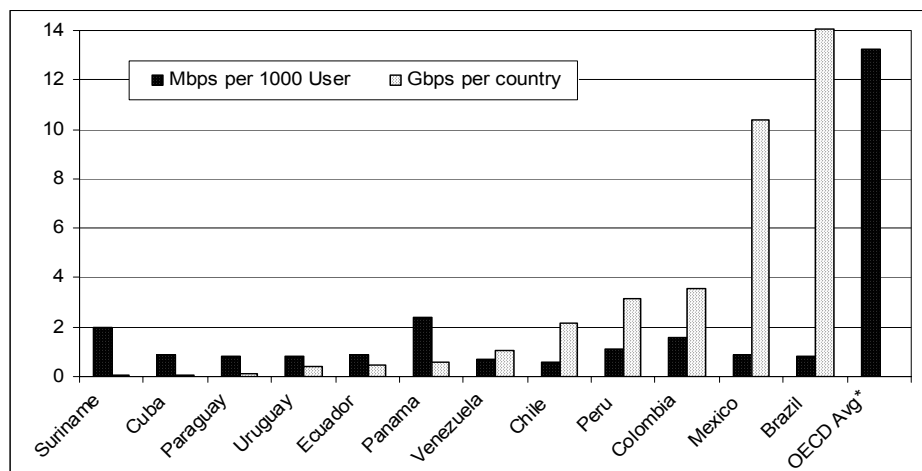
Action 1.1: “Promote the development of regional ICT infrastructure, including broadband capacity through backbones and interconnection of existing Network Access Points (NAP) with root servers, mirror servers and traffic exchange points.”

TABLE 1
INTERNET EXCHANGE POINTS IN LATIN AMERICA
(08/2005)

Country	Name	Number of Members	Starting Year	URL
Argentina	NAP CABASE	85	1998	www.cabase.org.ar
Brazil	Diveo NAP	8	2001	www.diveo.net.br
	NAP Abranet	58	2001	www.abranet.org.br
	NAP do Brasil	22	1998	www.terremark.com
	OptIX LA	17	2001	www.optiglobe.com.br
	Rio Grande do Sul Internet Exchange	15	2000	www.rsix.tche.br
Chile	NAP Chile	21	1997	www.nap.cl
Colombia	NAP Colombia	15	1999	www.nap.com.co
Peru	NAP Peru	8	2001	www.nap.pe
Uruguay	UruguayNET	n.a.	n.a.	www.uruguaynet.com.uy

Source: PriMetrica, “The Internet exchange points directory” [online] <<http://www.telegeography.com>>

FIGURE 1
INTERNATIONAL BANDWIDTH PER COUNTRY (GBPS) AND PER 1000 USERS (MBPS)
(2003)



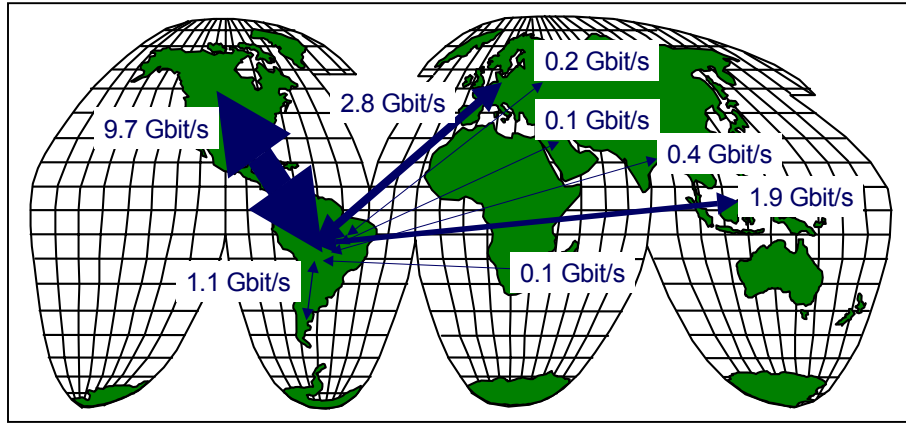
Source: International Telecommunications Union (ITU), “World Telecommunications Indicators Database”.

Note: * The average international bandwidth for OECD countries is 99.9 Gbps.

Summary: A sample of Internet exchange points in Latin America is shown. With regard to available international bandwidth, countries of the region still rank much lower than the OECD average.

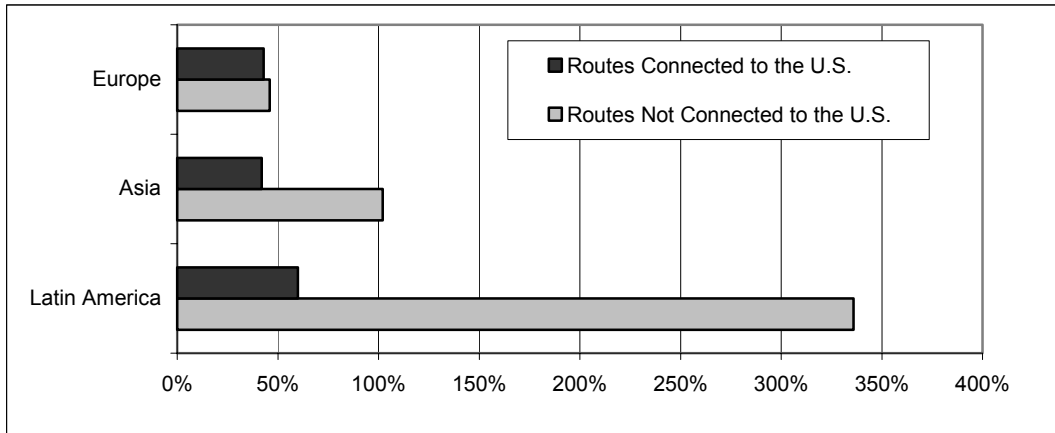
Challenge: *Improve various aspects of regional infrastructure: enhancing intra-regional connectivity, increasing the region's connectivity with the rest of the world, seeking uniformity in the capacity of broadband and demanding coordination in forums like REGULATEL, CITELECOM and LACNIC.*

FIGURE 2
INTERNATIONAL PEAK-HOUR INTERNET TRAFFIC FLOWS TO AND FROM LATIN AMERICA
 (GBIT/S) (2001)



Source: Ovum-CyberRegulation Consultants, “Internet and telecommunications traffic flows in Latin America and their market dynamics”, Latin American Telecommunications Regulators Forum/Hispano-American Association of Centers of Telecommunications Research and Enterprises (REGULATEL/AHCIET), 2001.

FIGURE 3
ANNUAL AVERAGE INTERNET TRAFFIC GROWTH ON U.S. AND NON-U.S. ROUTES
 (2004-2005)



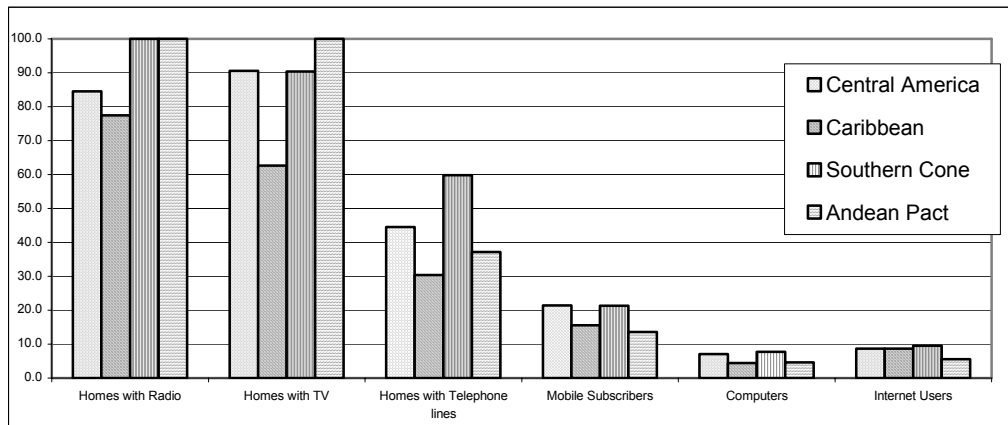
Source: PriMetrica, *TeleGeography Research 2005* [online] <<http://www.telegeography.org>>

Summary: The overwhelming majority of Latin American and Caribbean Internet traffic was directed through North America in 2001. Between 2004 and 2005 this has begun to change for the region, with increasing Latin American traffic on non-U.S. routes.

Challenge: Updated information about this issue is necessary to support Internet transit negotiations, which must be undertaken under transparent and non-discriminatory parameters. The nuances of commercially negotiated Internet transit and interconnection agreements with operators and intra-regional traffic exchange points are essential for the determination of Internet access costs in the region.

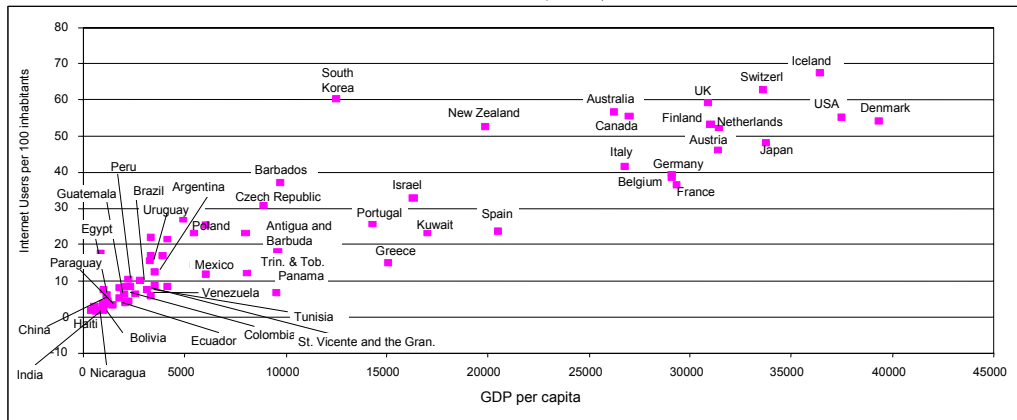
Action 1.3: “Promote the creation of sustainable schemes and models for ICT penetration in the different countries of the region, as well as the generation of local associative proposals designed to arrange for improved connectivity conditions, particularly in disadvantaged areas.”

FIGURE 4
ICT INFRASTRUCTURE PER REGION IN LATIN AMERICA AND THE CARIBBEAN
(Percentage) (2002)



Source: International Telecommunications Union (ITU), “World Telecommunications Indicators Database”.

FIGURE 5
PENETRATION OF INTERNET AND GDP PER CAPITA
(2003)

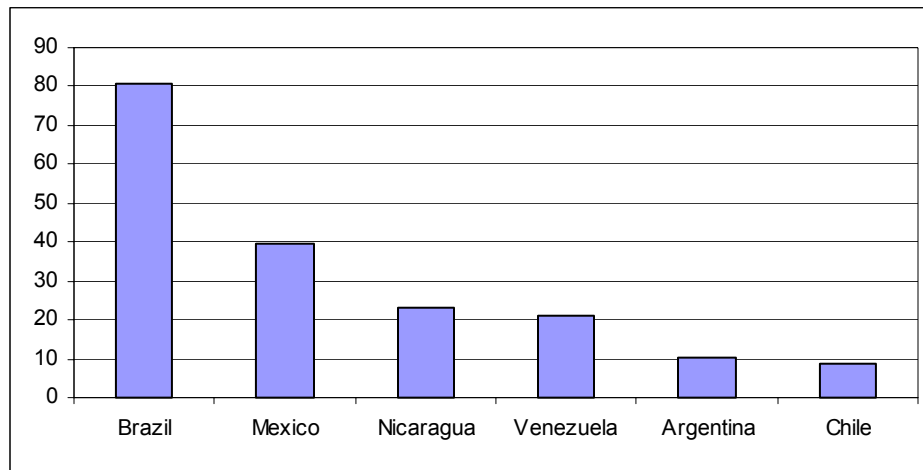


Summary: The penetration of television is very high in Latin America and the Caribbean. The region has nearly fulfilled the objective of connecting citizens to television and radio services. However, much development remains to be done in terms of other ICTs such as telephony, computers and the Internet. Internet penetration is still very low in countries of the region.

Challenge: *Promote solutions to provide better infrastructure for ICT access in the different countries of the region.*

Action 2.1: “Reduce by half the potential national average user base per community Internet access centres, or reduce its coverage to 20,000 people per centre, regardless of whether it is public or private”.

FIGURE 6
AVERAGE NUMBER OF POTENTIAL USERS PER TELE-CENTRE, SELECTED COUNTRIES
(thousands of persons) (2002-2004)



Source: Observatory for the Information Society in Latin America and the Caribbean, (OSILAC) (2005), on the basis of Silvia Rabadan and Roxana Bassi, “Centros tecnológicos comunitarios: la experiencia argentina”, Secretariat of Communications, 2002; Federal Government of Brazil; Banco do Brasil; Department of Telecommunications, “Evaluación del estado de situación y caracterización de la Red Nacional de Infocentros”, 2002, “Informe final. Año 2003”, “Informe de Monitoreo. Primer semestre de 2004” [online] Santiago, Chile <<http://www.infocentros.gob.cl>>; National e-México System, official site [online] <<http://www.e-mexico.gob.mx>>; German Agency for Technical Cooperation (GTZ), “Estudio sobre las experiencias de telecentros en Nicaragua” [online] Managua, 2003 <<http://www.developmentgateway.org>>; Comisión Nacional de Telecomunicaciones, official site [online] <<http://www.conatel.gov.ve>>.

Note: The number of potential users (persons who would need to use a tele-centre) is calculated by dividing the total population minus the number of Internet users by the number of tele-centres (ideally, this indicator should subtract the number of non-community Internet users, but this information is not available).

Brazil: Telecentres provided for 2005 (project Casa Brasil + community Telecentres Banco Brasil), Internet users 2002; Mexico: Telecentres 2004, Internet users 2003; Nicaragua: Telecentres 2003, Internet users 2002; Venezuela: Telecentres 2003, Internet users 2002; Argentina: Telecentres and Internet users 2002; Chile: tele-centres 2004, Internet users 2002.

Summary: Programmes for public ICT access points already exist in many countries. Some operate under what could be considered world best practices. Nevertheless, within countries, the digital divide still prevails and the population in need of public access to the Information Society remains large.

Challenge: *Expand these programmes, prioritising social inclusion, increasing the population covered.*

Action 2.4: “Support media based in local communities and projects that combine the use of traditional media with new technologies to facilitate the use of local languages, to document and preserve local heritage, including the landscape and biodiversity, and as a means of reaching out to rural, isolated and nomadic communities.”

TABLE 2
WORLD POPULATION, INTERNET USERS AND WEB CONTENT PER LANGUAGE
(Percentage) (1998-2005)

Language	(2000) Percentage of World population	(2005) Percentage of World population	(2000) Internet Users per Language	(2002) Internet Users per Language	(2005) Internet Users, by Language	(1998) Web pages per language	(2000) Web pages per language	(2002) Web pages per language
English	17.1	17.3	41.0	34.6	32.8	75.0	57.0	49.0
German	1.6	1.5	7.2	6.3	6.1	n.a.	6.3	7.1
Spanish	6.1	6.1	4.5	5.4	6.4	2.3	4.8	5.7
French	4.2	4.3	3.4	4	4.2	2.8	4.2	4.7
Portuguese	3.5	3.6	1.8	2.6	2.4	0.8	2.2	2.7
Italian	1.0	0.9	3.4	3.2	3.2	1.5	2.6	3.2
Chinese	21.7	20.6	-	-	12.8	-	-	-
Other	44.8	45.7	38.7	43.5	32.0	17.5	22.7	27.5

Source: Prepared by the author on the basis of Networks and Development Foundation (FUNREDES), “Observatory of the languages and the cultures” [online] <<http://www.funredes.org/LC/>>; International Telecommunications Union (ITU) and Internet World Stats, official site [online] <[http:// www.Internetworldstats.com](http://www.Internetworldstats.com)>.

Summary: The table illustrates the distribution of web content languages with regard to the proportion of Internet users and population by language. While in 1998, 75% of the Web content was in English, in 2002 this number fell to below 50%. Latin-based languages, such as Spanish, French and Portuguese, are catching up and nearly reaching equality in terms of web content and population proportions. A positive correlation exists between the growing number of Internet users of a given language group and the growth in the number of web pages in that language.

Challenge: *Foster sustainable growth of content in different languages for Latin American and Caribbean ICT users. Expand this growth for preservation of the local heritage and of other local languages.*

Action 3.1: “Double the number of public schools and libraries that are connected to the Internet or connect one third of them, if possible via broadband, particularly those located in rural, isolated or marginal areas, while setting the application of ICTs in education within the context of local realities”

TABLE 3
EDUCATIONAL ESTABLISHMENTS WITH ACCESS TO INTERNET IN SELECTED
COUNTRIES
(Percentage)

Country	Level	Private	Public
Colombia (2001)	Primary and Secondary	21.0	4.5
Mexico (2003)	Primary	44.1	4.9
	Secondary	72.3	60.8
Peru (2004)	Primary and Secondary	13.1	n.a.

Source: Colombia: Departamento Administrativo Nacional de Estadística (DANE), “Modelo de medición de las Tecnologías de la Información y las Comunicaciones TIC”, 2003; Mexico: Secretariat of Public Education, “Sistema educativo de los Estados Unidos Mexicanos, principales cifras, ciclo escolar 2003-2004” [online] <<http://www.sep.gob.mx/work/appsite/principif2003/Princcif2003.pdf>>; Peru: “Portal del Estado Peruano” [online] <<http://www.peru.gob.pe>>.

TABLE 4
CONNECTIVITY IN COSTA RICAN SCHOOLS BENEFITED BY THE "PRONIE-MEP FOD"
PROJECT
(2005)

Connectivity status	Primary and Secondary			Secondary		
	Urban	Rural	Total	Urban	Rural	Total
Total Establishments	265	337	602	118	79	197
With connectivity	126	266	392	82	34	116
Effective connectivity	83	199	282	54	24	78
Damaged equipment	29	36	65	14	5	19
Phone line out of service	14	31	45	14	5	19

Source: Omar Dengo Foundation.

Summary: Evidence from Colombia, Mexico and Peru shows that connectivity among schools is still low. Evidence from Costa Rica indicates differences between rural and urban areas.

Challenge: *Invest more resources to connect public and private schools.*

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

<p>Brazil</p>	<p>“National Secondary Education Curriculum Parameters: Objectives: Increase ability to use different technologies pertaining to one of the fields of activity; decrease digital divide by implementing changes in school curricula. This should develop the skills required for students to access and use information via computers, while building students’ awareness as to the pervasive presence of new technologies.</p> <p>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 contextualisation: Being familiar with the concept of network, distinguishing the global ones - such as the Internet, [...] - from local or corporate networks, such as 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, whether in the working world or in people’s private lives.”</p>
<p>Chile</p>	<p>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: input information in the computer, retrieve and edit information, use utilitarian programmes, word processors and drawing tools."</p> <p>Years 5-8 and Secondary Education Plans and Programmes (technical and professional) years 2-4: "Use utilitarian programmes: word processors, databases, worksheets, etc.; use e-mail to send and receive messages; search information on the Internet. Degree specializing in management and accounting: 80 hours. Appropriate use of word processors, worksheets and databases; exchange of data or information between applications pertinent to the area; prepare, copy and complete reports; back up files and make security copies of all information.</p>
<p>Colombia</p>	<p>Sectoral 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 toward creating a channel and an educational and cultural TV grid [...]. Projects using radio, television and the Internet as media to further the development of formal and informal educational programmes will be promoted.</p> <p>Sectoral Plan 2002-2006 for higher education: Use of new methodologies and technologies, technical and technological promotion and training [...]. In accordance with the Connectivity Agenda project, the expansion of the Internet II system will be encouraged as a platform to facilitate the widening of broadband, enabling the entire educational system to have fluid and appropriate access to new opportunities for connecting to general and specific data bases available at a global level.</p>
<p>Mexico</p>	<p>National Education Programme 2001-2006 basic education: Objective: Develop and expand the use of ICT for basic education, and encourage the 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.</p> <p>Lines of action: A. Encourage the use of ICTs among students, teachers, principals 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 appropriate for the use of ICTs in the classroom. D. Facilitate, through the use of ICTs, 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 collection, digitization, conservation, documentation and organization of pertinent educational equipment. H. Expand and strengthen, in coordination with federal entities, ICT equipment for reception in primary and secondary schools.</p> <p>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 centred on the learning and intensive use of ICTs.</p>

Source: Brazil: Ministry of Education, official site [online] <<http://www.mec.gov.br>; Chile: Ministry of Education, official site [online] <<http://www.mineduc.cl>; Colombia: Ministry of National Education, official site [online] <<http://www.mineducacion.gov.co>; México: Secretariat of Public Education, official site [online] <<http://www.sep.gob.mx/wb2>, 2004.

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

Challenge: *Find appropriate ways to actively promote ICT usage in those schools where ICT infrastructure already exists, taking into account that universal access among schools and students is a prerequisite to the compulsory integration of ICTs in the national curriculum.*

Action 3.2: “Considerably increase the number of computers per student in educational establishments and encourage its efficient use for learning.”

TABLE 6
ACCESS TO ICT IN PRIMARY AND SECONDARY EDUCATIONAL ESTABLISHMENTS

Primary and Secondary Establishments	Chile (2005)*	Colombia (2001)	Peru (2003)	Costa Rica (2004)	El Salvador (2004)
Establishments	9500	59119	59119	4625	n.a.
Computer available	n.a.	24.1%	18.6%	n.a.	n.a.
Internet available	75% (40% broadband)	6.3%	0.57%	18%	n.a.
Pupils per computer	30	36**	n.a.	n.a.	98.1

Source: Prepared by the author on the basis of Peru: Education Statistics Unit, Ministry of Education, 2003; Colombia: National Administrative Department of Statistics (DANE), “Modelo de medición de las Tecnologías de la Información y las Comunicaciones TIC”, 2003; Chile: Red Enlaces; Costa Rica: Capital Financiero, official site [on line] <<http://costarica.capitalfinanciero.com/>>.

Note: *Data on Chile only take account of establishments subsidized by the State. Data for Peru and Colombia include official and nonofficial (public and private) establishments; **includes pre-school establishments.

Summary: Student access to computers is insufficient for effective learning, and differences among countries are evident.

Challenge: *Invest more resources to equip schools.*

Action 5.1: “Promote ICT capacity-building for the development of new forms of work and tele-work, encouraging their application, in particular, for local job creation.”

**TABLE 7
ADVANCES TOWARD TELE-WORKING**

Country	Law o Project	Selected description
Argentina	Employment Contract Law (LCT). Art. 2	<ol style="list-style-type: none"> 1. Tele-workers have the same rights as all workers. 2. The controls designed for the protection of goods and information must safeguard the privacy of the tele-worker and the privacy of his/her home. 3. The benefit provision of this modality will be voluntary on the part of the tele-worker, and envisages the possibility that he/she could opt out if desired.
Chile	Law 19.759 Labour Code	<p>The approved labour reform introduced by Law 19,759, which entered into force on 1 December 2001, modified article 22 of the Labour Code in:</p> <ol style="list-style-type: none"> 1. The exclusion of the limitation on working hours for workers who elect to serve outside the company's place of operation, by means of the use of ICTs, making possible such tele-work (...). A new final addition to article 22 was made, in order to exclude tele-workers (...) from the 48-hour work week limitation referred to in this article.
Peru	NTP-ISO/IEC 17799 (2004)	<p>This guarantees the security of information when ICTs and tele-work are involved, covering:</p> <ol style="list-style-type: none"> a) The physical security of the place where tele-work occurs (...). b) The requirements of communications security (...). c) The threat of unauthorized access to information and resources (...). <p>The controls and adjustments to be considered include:</p> <ol style="list-style-type: none"> a) Supplying equipment and furniture adapted to tele-work activities. b) Definition of the work allowed, working hours, information (...) and internal services that tele-workers can access. c) Rules and guidelines on the family's access to and use of the equipment and information. d) Support for and maintenance of the hardware and software. e) Endorsement procedures and business continuity . f) Auditing and monitoring of security. g) The revocation of authorizations, rights of access and return of the equipment when the tele-work activities cease.

Source: Prepared by the author on the basis of Argentina: Centro de teletrabajo y teleformación, Universidad de Buenos Aires, official site [on line] <<http://www.caminandoutopias.org.ar/>>; Chile: "Legislación laboral y teletrabajo" [on line] <<http://www.alfa-redi.org/rdi-articulo.shtml?x=1337>>; Peru: "Yachai especiales" [on line] <<http://www.yachay.com.pe/especiales/trabajo/2b.htm>>.

Summary: The evidence from 3 countries indicates the existence of basic legal frameworks.

Challenge: *Take advantage of the advances of some countries in dealing with new forms of work, and facilitate a regional learning process*

TABLE 8
COMPANIES FROM SEVEN LATIN AMERICAN COUNTRIES IMPLEMENTING
E-LEARNING (N = 480)
(Percentage) (2003)

Total implementation of e-learning			Implementation of e-learning by sector			Implementation of e-learning by size of company (employees)			
Responses	%	Total No.	Implement e-learning	%	Total No.	Responses	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: E-learning América Latina, official site [on line] <[http:// www.elearningamericalatina.com](http://www.elearningamericalatina.com)>.

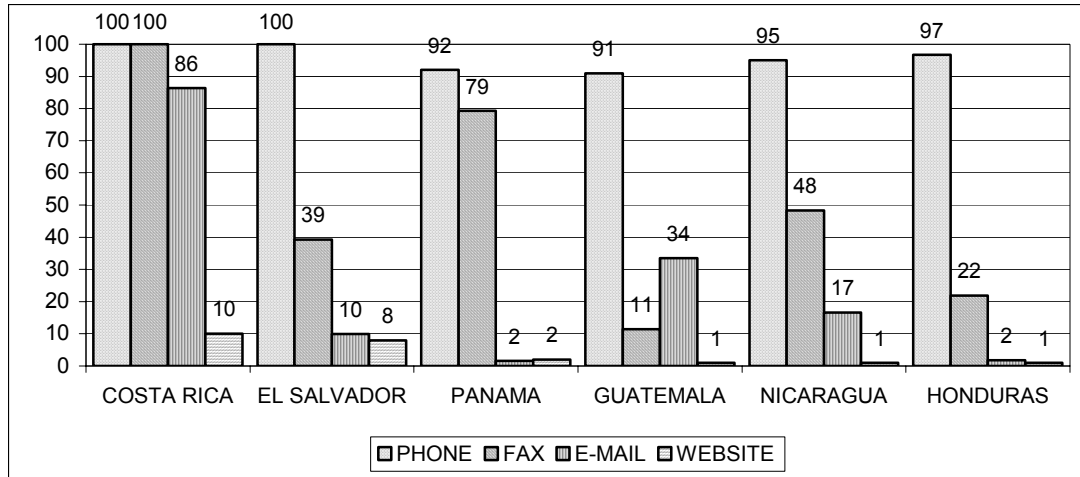
Note: Companies from Argentina, Brazil, Chile, Colombia, Ecuador, Mexico, and Peru.

Summary: In a sample of 480 companies from different countries of the region, 23.4% are implementing e-learning. Larger firms and those from the financial services sector are more active in this regard.

Challenge: *Take advantage of new ways of learning to promote ICT capacity-building to develop new forms of work.*

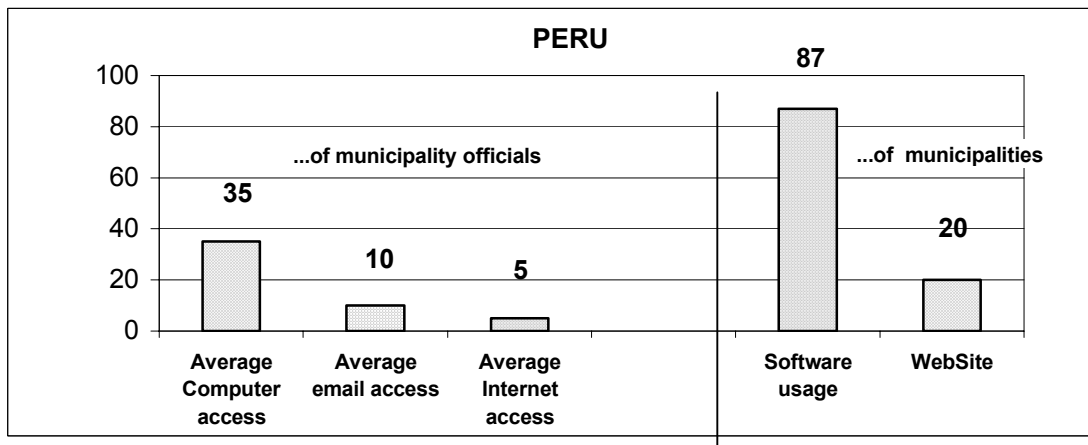
Action 6.1: “Connect at least half of local urban governments and one third of local rural governments to the Internet, ensuring local governments’ staff capacity in relation to ICTs.”

FIGURE 7
ICT INFRASTRUCTURE IN CENTRAL AMERICAN MUNICIPALITIES
 (Percentage) (2004)



Source: Observatory for the Information Society in Latin America and the Caribbean (OSILAC), on the basis of Federación de Municipios del Istmo Centroamericano (FEMICA), official site [online] <<http://www.femica.org>>, Corporación de Municipalidades de la República de El Salvador (COMURES), official site [online] <<http://www.comures.org.sv>> and Asociación de Municipios de Nicaragua (AMUNIC), official site [online] <<http://www.amunic.org>>.

FIGURE 8
ICT ACCESS IN PERUVIAN MUNICIPALITIES (N=77)
 (Percentage) (2003)



Source: Martin Hilbert, “Development trends and challenges for local e-governments: evidence from municipalities in Chile and Peru”, unpublished, 2003.

Summary: While almost all municipalities of Central America already contemplate telephone connectivity, e-mail usage and web sites are still scarce. There is an important difference in connectivity between municipalities and municipality officials within Peru. While 87% of the Peruvian municipalities work with some kind of administrative software and 20% of them have a website, only 5% of the government officials of those municipalities have access to the Internet.

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

Action 6.3: “Promote ICT training programmes for local public officials.”

TABLE 9
PROJECTS IN ICT CAPACITY-BUILDING FOR LOCAL OFFICIALS

Country	Name of Project	Responsible institution	Type of organization	Main Objectives	Time of Project	Number
Argentina	El Campus Virtual (FAM-UNQ)	Federación de Municipios (FAM) and Universidad de Quilmes (UNQ)	Governmental and Educational	Promoting the Human Resource development of Argentine Municipalities	1 year (2004 - 2005)	n.a.
Chile	Desarrollo Digital de Gobierno Regional y Municipios	Subsecretaria de Desarrollo Regional y Administrativo (SUBDERE)	Governmental	Strengthening the internal capabilities of regional and local governmental bodies	n.a.	341 local government bodies
	Talleres (sin nombre)	Unidad de Capacitación Municipal de la SUBDERE	Governmental	Strengthening the capabilities of local functionaries, of all regions, in a new version of the SUBDERE portal	1 month (July 2005)	532 public officials of 281 local governments
	Programa Fortalecimiento Municipal (PROFIM)	Subsecretaria de Desarrollo Regional y Administrativo (SUBDERE)	Governmental	Improving the leadership and service quality of local governmental bodies	1994 -	n.a.
Dominican Republic	ITLA - OPTIC	Oficina Presidencial de Tecnologías de la Información y la Comunicación (OPTIC) and Instituto Tecnológico de las Americas (ITLA)	Governmental and Educational	Training 100,000 public officials in ICTs	3 years (2005 - 2008)	100,000 public officials
Mexico	Portal@Campus México	Secretaria de la Función Pública	Governmental	Training public officials in Information Culture	Oct. 2004 -	10,000 public officials (2005)
Venezuela	Proyecto del Sistema Satelital Simón Bolívar	Ministerio de Ciencia y Tecnología	Governmental	Training public officials in satellite technology	1 year (2005 - 2006)	90 experts and 250 public officials
Latin America	ICA	Institute of Connectivity of the Americas (ICA)	International Institution	Updating the knowledge of participants and improving strategies of e-government	5 months (Nov. 2004 - Mar. 2005)	Public officials, 18 Latin American countries

Source: Prepared by the author on the basis of Argentina: Directorio del Estado, official site [online] <<http://www.directoriodeestado.com.ar>>; Chile: Modernización.gob.cl, official site [online] <<http://www.modernizacion.cl>>, Subsecretaría de Desarrollo Regional y Administrativo (SUBDERE), official site [online] <<http://www.subdere.gov.cl>>; República Dominicana: Directorio del Estado, official site [online] <<http://www.directoriodeestado.com.ar>>; México: Campus México, official site [online] <<http://www.campusmexico.gob.mx>>; República Bolivariana de Venezuela: Centro Nacional de Tecnologías de Información (CNTI), official site [online] <<http://www.cnti.ve>>, *El Nacional*, official site [online] <<http://www.el-nacional.com>> and Latinamerica, official site [online] <<http://Latinamerica.www.icamericas.net>>.

Summary: ICT training programmes for local public officials do exist in some countries. Most of these have been designed for short periods.

Challenge: *Extend ICT programmes for local public officials to more countries at all levels of government, and encourage their sustainability.*

Action 6.4: “Stimulate local development of information and access to local information, considering local and indigenous languages and the needs of people with disabilities.”

TABLE 10
EXAMPLES OF PROGRAMMES RELATED TO DEVELOPMENT OF LOCAL INFORMATION
AND INFORMATION FOR INDIGENOUS PERSONS
(2005)

Country	Programme	Objectives	Coordinating Organizations
Mexico	e-Indigenas Programme	To integrate services for indigenous persons.	National Commission for the Development of Indigenous Peoples
		To provide indigenous persons a place to exchange knowledge, based on ICTs.	General Coordination Office of the National e-Mexico System
		Provide own forum of expression.	CONACULTA
Guatemala	Digital Democratization of Guatemala	To bring together organizations that promote the right to technological access on the part of excluded persons.	Collaboration agreement between Iwith.org de Catalonia (Spain) and the Rigoberta Menchú Tum Foundation
		To promote the creation of the Mayan University of Guatemala.	Academia de Lenguas Mayas de Guatemala (Mayan Language Academy of Guatemala)
		Adaptation and translation of OpenOffice and other OpenSource software to Mayan languages.	
		To create different programmes to facilitate the technological access of rural children and young people, particularly those within the Mayan population.	Asociación Argos (Argos Association)
		Organization of the educational system to include Information Technologies (IT) and less-prevalent Mayan languages	

Source: e-indigenas, official site [online] <<http://www.e-indigenas.gob.mx>>; Discapacidad Uruguay, official site [online] <<http://Discapacidad Uruguay www.discapacidaduruguay.org>>.

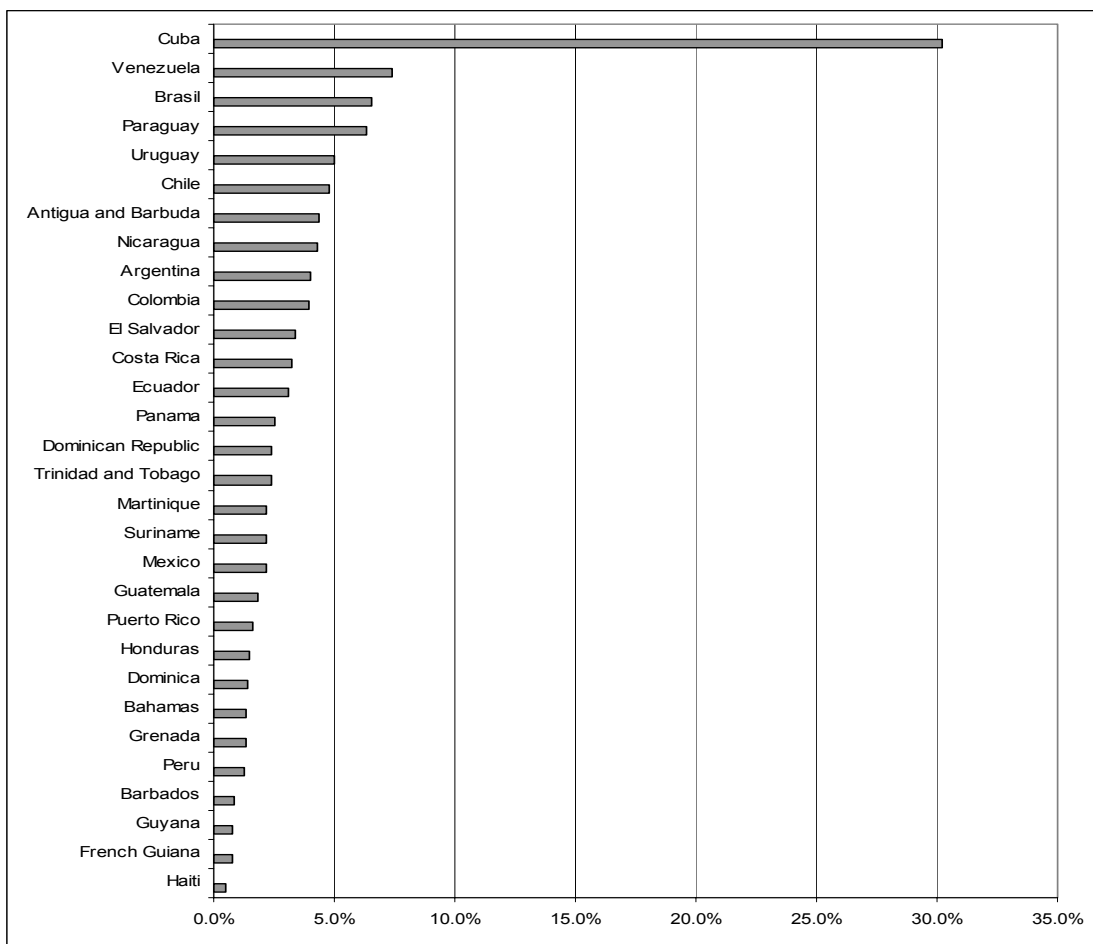
Summary: Projects and initiatives to address the special requirements exist, but are scarce in the region. These are only two examples; however they do not specifically involve access to local information, but rather involve the local indigenous population.

Challenge: *Support initiatives to increase local populations’ access to information.*

B. Capacity-building and knowledge creation

Action 8.1: “In the context of efficiency and social inclusion, establish a regional working group to exchange experiences and criteria used for the development and use of open-source software and free software, which includes studies on technical, economic, organizational, training and security challenges”

FIGURE 9
ESTIMATED LINUX USERS OF INTERNET IN LATIN AMERICA AND THE CARIBBEAN
(Percentage) (08/2005)



Source: Prepared by the author on the basis of The Linux Counter, official site [online] <<http://counter.li.org/>> and International Telecommunications Union (ITU), “World Telecommunications Indicators Database”.

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.

Summary: An increasing number of countries use Linux. However, this still represents a small portion of the total market.

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

Action 10.1: “Develop and expand at the national, subregional —especially in the Caribbean— and regional levels advanced ICT-based networks for research and education while strengthening existing networks, such as the CLARA network.”

TABLE 11
CHARACTERISTICS OF ADVANCED RESEARCH NETWORKS
(2004)

Country / Region	Name of Network	Year	Type of managing organization	Number of organizations associated	Characteristics of associated organizations	Network connected to CLARA	Network connected to Internet 2	Main Objectives
Argentina	RETINA	1990	Not for profit private organization (self-financed)	52	37 higher education institutes, 8 research institutions, 4 ministries, 3 NGOs	Yes	Yes	Facilitate integration of existing academic networks, promote the use of new communication technologies by researchers, teachers and persons linked to the academic sector.
Bolivia	BOLNET	1990	Educational governmental organization (self-financed)	20	7 higher education institutes, 8 research institutions, 3 ministries, 2 NGOs	n.a.	No	Connect the university and research communities with each other and with advanced global networks.
Brazil	RNP	1989	Not for profit private organization (self-financed)	369	242 higher education institutes, 53 secondary education institutes, 68 research institutions, 6 ministries	Yes	Yes	Promote the development of technologies in the area of networks and innovative applications in Brazil, supporting the use of Internet networks as factors in general scientific and educational progress.
Chile	REUNA	1986	Not for profit private organization (self-financed)	19	18 higher education institutes and CONICYT	Yes	Yes	Provide the country's higher education, innovation and research communities services in Information and Communication Technologies.
Colombia	CETCOL	n.a.	Mixed law organization, not for profit	75	75 higher education institutes, research institutes, public and private entities	Yes	No	Provide connections among university and research communities and between these and advanced global networks.
Cuba	REDUNIV	n.a.	Governmental organization (Ministry of High Education)	21	16 higher education institutes, 4 research institutes, 1 ministry	n.a.	No	Provide connections among university and research communities and between these and advanced global networks.
Ecuador	FUNDACYT (RECYT)	1994	Non-governmental organization	38	32 higher education institutes, 2 research institutes, 1 technology transfer centre	Yes	n.a.	Promote scientific and technological activities: support the State in promoting, guiding and strengthening science, technology and innovation as primary factors for the country's development in the educational, productive and research fields.

Table 11 (concluded)

El Salvador	RAICES	2003	Private organization, not for profit (self-financed)	8	7 higher education institutes, 1 research institute	Yes	No	Promote and coordinate the development of telecommunications and computing networks directed at scientific, educational and research development in El Salvador.
Panama	REDCYT	2002	Educational organization, not for profit	10	7 higher education institutions, 1 research institute, 2 governmental institutions	Yes	Yes	Provide the educational, research, scientific and technological community with a high-speed network in order to improve education.
Paraguay	ARANDU	n.a.	Educational organization, not for profit	22	22 higher education institutions	Yes	No	Establish and operate technological infrastructure; connect to countries' advanced networks; establish collaborative links with organizations of other regions.
Uruguay	RAU	1990	Higher education institution, not for profit	47	2 higher education inst., 2 secondary education inst., primary education inst., 6 ministries, 4 NGOs, 1 hospital, 1 industry, 30 offices with WAN connections	Yes	No	Propose educational communication at national, regional and international levels; facilitate mass access to new information and communication technologies; facilitate dissemination, distance-learning and continuing-education activities.
Venezuela	REACCIUN	1994	Governmental organization, not for profit (Ministry of Science and Technology)	73	33 higher education institutions, 30 ministries, 9 NGOs, 1 unidentified institution	Yes	Yes	Contribute to national progress through optimal use of new technologies; attend to the needs of the scientific and technological community.

Source: Prepared by the author on the basis of Argentina: Red Teleinformática Académica (RETINA), official site [online] <<http://www.retina.ar>>; Bolivia, Consejo Nacional de Ciencia y Tecnología, official site [online] <<http://www.conacyt.gob.bo>>; Brazil: Rede Nacional de Ensino e Pesquisa, official site [online] <<http://www.rnp.br>>; Chile: Red Universitaria Nacional, official site [online] <<http://www.reuna.cl>>; Colombia: Red Nacional de Ciencia, Educación y Tecnología, official site [online] <<http://www.cetcol.net.co>>; Cuba: Ministerio de Educación Superior, official site [online] <<http://www.mes.edu.cu>>; Ecuador: Fundación para la Ciencia y la Tecnología (FUNDACYT), official site [online] <<http://www.fundacyt.org.ec>>; El Salvador: Red Avanzada de Investigación, Ciencia y Educación Salvadoreña (RAICES), official site [online] <<http://www.raices.org.sv>>; Panama: Red Científica y Tecnológica (REDCYT), official site [online] <<http://www.redcyt.org.pa>>; Paraguay: Arandu, official site [online] <<http://www.arandu.net.py>>; Bolivarian Republic of Venezuela: Centro Nacional de Tecnología e Información, official site [online] <<http://www.reacciun.ve>>; Uruguay: Universidad de la República de Uruguay, official site [online] <<http://www.rau.edu.uy>>.

Summary: Academic research networks have been in existence 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. For the Caribbean, however, no academic network exists. The ARCOS¹ project for the Caribbean, currently being evaluated, is a fibre optic network that could potentially establish an academic network supporting research and education processes.

Challenge: *Extend research networks to more universities and more countries, broaden their scope to include more topics, and intensify network usage. Search out synergies with existing networks, to support education and research processes.*

Action 14.1: “Promote regional dialogues, exchanges and cooperation on national experiences in Internet governance; training in Internet resource management (domain names, IP numbers and protocols); international interconnection costs; cyber-security, spam, and related institutional and technological aspects.”

TABLE 12
NATIONAL INFORMATION CENTRES (NICS) IN LATIN AMERICA AND THE CARIBBEAN
(2005)

Abbreviation	Name	Leading Authorities	Link	Characterisation
.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 the Vice-president	www.nic.bo	Government, on cooperative basis
.br (Brazil)	Brazilian Network Information Centre	Internet Management Committee of Brazil (Communications Ministry in cooperation with Science and Technology Ministry)	www.nic.br	Government, on cooperative basis
.bs (Bahamas)	Bahamas Network Info. Centre (BSNIC)	College of The Bahamas	www.nic.bs	Academic institution

¹www.science.oas.org/Ministerial/espanol/documentos/REMCYT-I-INF10-ESP.pdf;
www.pcwla.com/pcwla2.nsf/0/C114B58197F514ED80256A5D005DE3F3

Table12 (concluded)

.bz (Belize)	Belize Network Information Centre	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
.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 associated with the Sciences, Technology and Environment Ministrv)	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, on cooperative basis
.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 & Tobao)	T&T Network Information Centre	TTNic	www.nic.tt	Private company
.vz (Venezuela)	NIC Venezuela	Centro Nacional de Tecnologías de Información (CNTI)	www.nic.ve	Non-governmental organisation

Source: Observatory for the Information Society in Latin America and the Caribbean (OSILAC).

Summary: No single domain registration model exists within the region. Sometimes this is managed by academic or governmental institutions, other times by the private sector.

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

Action 14.2: “Participate actively in the tasks of the Working Group on Internet Governance of the United Nations (WGIG), while it exists.”

TABLE 13
TOTAL NUMBER OF PARTICIPANTS AND NUMBER OF PARTICIPANTS FROM LATIN AMERICA AND THE CARIBBEAN IN MEETINGS OF WGIG
(2005)

Date	Title	Total Participants	LAC Participants
20-21 September 2004	Consultations on the Establishment of WGIG	185	30
23-25 November 2004	First Meeting of the Working Group on Internet Governance	104	9
14-18 February 2005	Second Meeting of the Working Group on Internet Governance	124	14
18-20 April 2005	Third Meeting of the Working Group on Internet Governance	n. f.	n. f.
15-17 June 2005	Fourth Meeting of the Working Group on Internet Governance	184	7

Source: Observatory for the Information Society in Latin America and the Caribbean (OSILAC), on the basis of Working Group on Internet Governance (WGIG), official site [online] <<http://www.wgig.org>>.

Summary: While there is regional participation in WGIG meetings, there has been a decline in interest in participating, as indicated by the last meeting, in which less than 25% of LAC showed up.

Challenge: *Make use of this existing capacity in the region in order to intensify and extend the discussion on related issues.*

C. Public transparency and efficiency

Action 15.1: “Create and/or strengthen instruments for exchanging e-government services, such as the e-Government Network of Latin America and the Caribbean (REDGEALC), developing regional cooperation for the transfer of technologies, platforms, applications and software, as well as the corresponding knowledge, skills and best practices.”

TABLE 14
ELECTRONIC-GOVERNMENT PROGRAMMES IN LATIN AMERICA AND THE CARIBBEAN (RED GEALC)
(2005)

Country	E-government programme/office	Main Organization	Website	Law or decree
Bolivia	Agency for the Development of the Information Society in Bolivia, AISB	Decentralized organization, under the Vice-presidency of the Republic	www.adsib.gov.bo	D.S. 26553, 19 March 2002, which was modified 22 September 2004 by D.S. 27739.
Brazil	Comitê Executivo do Governo Eletrônico	Several "câmaras técnicas" within different levels of government Ministry of Planning, Budget and Management	www.mct.gov.br www.planejamento.gov.br	Decree N° 3.294, December 1999.
Chile	Project for the Reform and Modernization of the State (PRYME)	Ministerio Secretaria General de la Presidencia	www.agendadigital.cl	The Digital Agenda is the result of work initiated in April 2003 by the Digital Action Group.
Colombia	Programme for the Renewal of Public Administration	Connectivity Agenda	www.agenda.gov.co www.gobiernoenlinea.gov.co/	CONPES 3072 February 2000.
Honduras	Comité Gubernamental de Infotecnología (CGI),	Comisión Presidencial de Modernización del Estado (CPME)	www.gob.hn	n.a.
Mexico	Political unit of electronic government and information technologies	Secretaría de la Función Pública	www.e-mexico.gob.mx	n.a.
Peru	Presidencia del Consejo de Ministros Secretario de E-gobierno		www.peru.gob.pe	Ministerial resolution that approves mandatory use of Peruvian practical standards NTP-iso/iec 17799:2004 EDI for information technology.

Source: Network of e-Government Leaders of Latin America and the Caribbean (REDGEALC), official site [online] <<http://www.redgealc.net>>.

Summary: Countries in the region are establishing inter-ministerial e-government coordination programmes. This is essential for the development of interoperable e-government services.

Challenge: Reinforce the existence of multi-authority programmes to provide effective e-government services.

TABLE 15
RANKING OF PUBLIC-SECTOR ONLINE PRESENCE
(RANKING BY U.N. WEB MEASURE INDEX)
(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
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 and Gren.	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* and *Global e-government Readiness Report 2004: Towards access for opportunity*, Department of Economic and Social Affairs (DESA).

Note: The UN Web Measure Index is part of the UN Global E-government Readiness Index and is based on a five-stage model of a State's online presence.

Summary: Some governments from the region can be regarded as fairly advanced in e-government, ranking among the world’s leaders. Venezuela, Honduras and Colombia were the fastest-advancing LAC countries between 2003 and 2004. During this period, Dominica and Surinam also entered the era of e-government with a Web presence.

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

Action 15.3: “Promote the electronic integration of public administrative systems via one-stop shops in order to improve the management of intragovernmental procedures and processes.”

TABLE 16
EXAMPLES OF ONE-STOP SHOPS IN LATIN AMERICAN GOVERNMENTS

Country	Name	URL
Argentina	gobiernoelectrónico.ar	www.argentina.gov.ar
Chile	Ventanilla para empresas	www.sitioempresa.cl
Chile	Ventanilla del gobierno	www.gobierno.cl
Chile	Ventanilla de Comercio Exterior	www.aduana.cl
Colombia	Portal de Información y Servicios del Estado Colombiano (PEC) del Gobierno en Línea	www.gobiernoenlinea.gov.co
El Salvador	Ministerio de obras públicas	www.mop.gob.sv
Venezuela	Republica bolivariana de Venezuela	www.gobiernoenlinea.gob.ve
Mexico	Portal ciudadano del gobierno federal. Gobierno de México	www.gob.mx
Nicaragua	Republica de Nicaragua	www.presidencia.gob.ni
Honduras	Gobierno de Honduras	www.gob.hn
Paraguay	Presidencia de la republica de Paraguay	www.presidencia.gov.py

Source: Network of e-Government Leaders of Latin America and the Caribbean (REDGEALC) and Observatory for the Information Society in Latin America and the Caribbean (OSILAC).

Summary: Countries are starting to set up one-stop shops.

Challenge: *Disseminate the creation of one-stop shops in all countries of Latin America.*

Action 15.4: “Contribute to the use of electronic/digital signatures in governmental procedures, both by public officials and civil servants and by citizens.”

TABLE 17
LEGISLATION ON DIGITAL/ELECTRONIC SIGNATURE
(2005)

Country	Norm	Title	Year
Argentina	Decree N°427	Approves digital signature infrastructure for the national public sector and compares the effects of a digital signature to that of a normal signature	1998
	Law N° 25506	Digital Signature Law	2001
Barbados	Chapter 308 B	Electronic Transaction Act	2001
Belize	Chapter 290:01	Electronic Transaction Act	2003
Bermuda		Electronic Transactions Act	1999
Brazil	Provisory Measure No. 2.200/01	Establishes infrastructure for Brazilian public keys (ICP-Brazil), transforms the National Institute of Information Technology into an independent entity, and approves other steps.	2001
	Decree 3587	Public keys for federal executive branch of the State.	2000
Chile	Law N°19.799	Concerns electronic documents, electronic signatures and certification services.	2002
Colombia	Law No. 527	Defines and regulates access to and use of messages involving data, electronic commerce and digital signatures, establishes the certification entities, and enacts other provisions.	1999
Ecuador	Law N°2002-67	Electronic commerce law, electronic signatures, and messages containing data.	2002
Cayman Islands	Law 7 of 2000	The Electronic Transaction Act	2000
Mexico		Initiative of reforms and additions to the commercial code relating to electronic signature.	2000
Panama	Law No. 43	Regulates electronic documents and signatures, electronic-commerce certification entities, and the exchange of electronic documents.	2001
Paraguay	Decree N°21	Establishes regulations regarding law 2051.	2003
Peru	Law 27269	Approves the law on digital signatures and certificates.	2000
	Law 27310	Modification of the law on electronic signature.	2000
Puerto Rico	S.B. 423 (188)	Digital Signatures Act.	1998
Dominican Republic	Law 126-02	Digital Law on Electronic Commerce, Documents and Companies.	2002
Uruguay	Law N°16.713	National budget, art. 694, 695, 696, 697, 698.	1996
	Law N°17.243	Concerns the State's computer system, electronic files and electronic and digital signatures.	n.a.
	Decree 65/998	Regulates the implementation of electronic media, transmission, storage and document handling by the Public Administration (Chapter III).	1998
	Decree	Regulates the use of digital signatures and recognition of its legal effectiveness.	2003
	Law 17243	Law relating to the Declaration of Urgency on Public and Private Services, Public Security and Conditions, in which productive activities are developed (Section Third, articles 24, 25 and 26).	2000
Venezuela	Decree No. 1.204	Law concerning data containing messages and digital signatures.	2001

Source: Erick Iriarte, "Estado situacional y perspectivas del derecho informático en América Latina y el Caribe", Santiago, Chile, Economic Commission for Latin America and the Caribbean (ECLAC), unpublished, 2005.

Summary: Basic legal frameworks exist in most countries.

Challenge: *Cooperate so that all countries have electronic signature legislation and, even more important, foster their user-friendly and effective application within and between countries of the region.*

Action 15.5: “Promote the adoption of information security and storage models at all levels of government with a view to engendering trust in the digital information managed or provided by the State.”

TABLE 18
LEGISLATION ON CYBER CRIME
(2005)

Country	Norm	Title	Year
Argentina	Law 25326	Law on Protection of Personal Data (article 32).	2000
	draft bill by resolution 476/2001	Damage to the computer system.	2001
Brazil	Law 9983	N° 2,848 modifies Decree - law of 07 December 1940 - Penal Code - and provides additional measures.	2000
	Project of Law 5460/01	Dissemination of child and adolescent pornography via the Internet.	2001
Chile	Law No. 19223	Damage to the computer system.	1993
Colombia	Law 599	Law establishing the Penal Code (article 195).	2000
	Law 679	A statute is presented to prevent and combat exploitation, pornography and sexual tourism with minors, resulting in article 44 of the Constitution.	2001
Costa Rica	Law No. 8148	Damage to the computer system.	2001
	Law 8131	The financial administration of Costa Rica. (articles 110 and 111).	2001
Ecuador	Law No. 2002-67	Damage to the computer system.	2002
Guatemala	Decree No. 17-73 of the Penal Code	Damage to the computer system.	1973
Mexico		Penal Code (reform 1999) - article 211.	1999
Mexico / Sinaloa	Decree 539 (article 217)	Penal Code of the State of Sinaloa - article 217.	1992
Peru	Legislative Decree 681 modified by Law 26612	Computer crimes.	1996
	Law 27309	Law concerning computer crimes.	2000
Dom. Rep.	Draft bill	First draft of a law regarding high-technology crimes	2004
Venezuela	Decree 48, special law against cyber crime	Computer crimes.	2001

Source: Erick Iriarte, “Estado situacional y perspectivas del derecho informático en América Latina y el Caribe”, Santiago, Chile, Economic Commission for Latin America and the Caribbean (ECLAC), unpublished, 2005.

Summary: Various legislation regarding cyber crime and misuse of ICTs already exists in the region. This type of legislations is essential in order to deal with the increasing challenges posed by the borderless nature of Internet content.

Challenge: *Strengthen implementation, extend coverage and foster the international harmonization of legislation. Raise the importance of security issues and promote public prevention policies based on appropriate technical solutions.*

Action 15.7: “Promote electronic contracting mechanisms in government.”

TABLE 19
GOVERNMENT E-PROCUREMENT AND PUBLIC TENDERS
(2005)

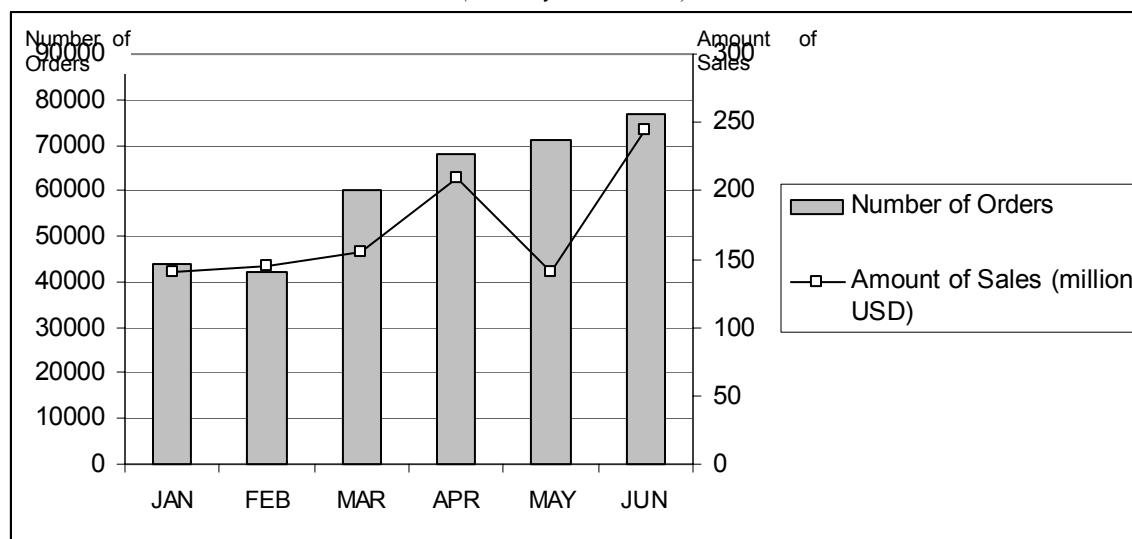
Country	URL	Denomination	Authority	Date
Argentina	www.transparencia.mecon.gov.ar	Oficina Nacional de Contrataciones	Subsecretaría de Presupuesto de la Secretaría de Hacienda del Ministerio de Economía de Argentina.	2000
Bolivia	www.sicoes.gov.bo	Sistema de Información de Contrataciones Estatales, SICOES	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	Comisión Intersectorial de Contratación Pública, Agenda de Conectividad, Ministerio de Hacienda	2002
Costa Rica	www.hacienda.go.cr/comprared/index.asp	CompraRED, Sistema Electrónico de Contrataciones Gubernamentales	Ministerio de Hacienda	2001
Ecuador	www.contratanet.gov.ec	Sitio Oficial de Información de Contratación Pública del Estado	Gobierno de la República de Ecuador	2003
Guatemala	www.Guatecompras.gt	Sistema de Información de Contrataciones y Adquisiciones del Estado.	Gobierno de la República de Guatemala	2003
Honduras	www.honducompras.gob.hn	Reglamento de la Oficina Normativa de Contratación y Adquisiciones del Estado (ONCAE), un organismo técnico y consultivo del Estado	Secretaria de Estado del Despacho Presidencial.	2003

Table 19 (concluded)

Mexico	www.compranet.gob.mx	Sistema Electrónico de Contrataciones Gubernamentales, Compranet.	Secretaría de la Función Pública (Secretaría de Contraloría y Desarrollo Adm. - SECODAM)	1998
Paraguay	www.contratacionesparaguay.gov.py	subsecretaría de estado de administración financiera dirección general de contrataciones públicas	Ministerio de Hacienda	2005
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

Source: Observatory for the Information Society in Latin America and the Caribbean (OSILAC).

FIGURE 10
VOLUME AND VALUE OF NOTICES ON THE COLOMBIAN TENDER PORTAL
(January-June, 2005)



Source: Portal Único de Contratación, official site [online] <<http://www.contratos.gov.co>> .

Summary: Several e-procurement applications exist in countries of the region. Colombia is an example of the increasing use of this application.

Challenge: *Foster the use of these e-procurement portals among different government offices and local and national providers*

Action 15.8: “Promote the creation of mechanisms for standardizing and consolidating geo-referenced information with a view to providing decision-making tools for government and the private sector.”

TABLE 20
EXAMPLES OF GEO-REFERENCED INFORMATION PROJECTS FROM GOVERNMENTAL GEOGRAPHIC INSTITUTES
(2005)

Country	Name of Institution	Project	Objectives	Benefits
Argentina	Instituto Geográfico Militar	PROSIGA	Establish a GIS with direct intervention of multiple actors and users of geospatial data that allows the overall community to have tools for general information and decision making based on homogeneous spatial characteristics.	Remote access to information (Internet), visualize simultaneously geospatial information for operation planners and providers, simultaneous updating of large volumes of data, access to integrated information on a national and regional scale, need for data processing bodies to work under norms and standards that assure integrated operations.
Brazil	Instituto Nacional de Pesquisas Espaciais (INPE)	SPRING - (Geo-referenced Information Processing System)	Integrate raster and vector data representations in a single environment.	Provide an integrated GIS for environmental, socio-economic and urban planning applications; to be a multi-platform system, including support for Windows95/98/NT, Linux and Solaris; to be a widely accessible freeware for the GIS and remote sensing community.
Chile	Instituto Geográfico Militar	Desarrollo de Sistemas de Información Geográficos (SIG) para Municipalidades	Implement a GIS base for civil and military uses.	Improve tools for decision making.
Colombia	Instituto Geográfico Agustín Codazzi	Las Bases de Datos Geográficas Multiescala y Topónimos Dinámicos, Una Alternativa al Problema de la Generalización	Develop a multiscale database supported by GIS that allows for the analysis and generation of geo-referenced spatial data as a basis for geographic generalization.	Improve tools for decision making regarding geographic components and environments.
Mexico	INEGI	La Ley de Información Estadística y Geográfica	Integrate and develop a system in order to coordinate, unite and rationalize the collection, production and processing of geo-referenced information.	Establish policies, norms and techniques to nationally unify geo-referenced information, obtain geo-referenced information produced by other participants of the system when it is of national interest, evaluate geo-referenced sectoral and state information.

Table 20 (concluded)

Nicaragua	INETER (Instituto Nicaragüense de Estudios Territoriales)	Desarrollo de la base de meta datos Clearinghouse de INETER	Disseminate and improve the availability of geo-referenced information through an Internet-based metadata server, consolidate the participation of other institutions for the exchange of such metadata, improve the mechanisms that facilitate the use of the INETER spatial database in order to create an efficient tool for socioeconomic development and the prevention of disasters.	Technical support and implementation assistance of metadata services on the Internet for institutions and public and private agencies.
	INETER (Instituto Nicaragüense de Estudios Territoriales)	Establecimiento de mapas básicos y mapas de amenaza para SIG	Prepare topographic maps at 1:50,000 scale and GIS data that cover an area of approximately 20,000 km ² of the pacific region of Nicaragua, to be used by a variety of users for different purposes.	Establish a GIS database based on an international standard (such as DIGEST) to promote more effective exchange of data. Collect data about social conditions (population, buildings, transport, land use, disaster prevention).
Panama	Instituto Geográfico Nacional "Tommy Guardia"	Sistema de Información Geográfica	Implement an integrated GIS network with all the information generated in different sections of the IGNTG.	Improve tools for decision making.
Peru	Instituto Geográfico Nacional	Dirección de Sistemas de información geográfica	Prepare, design and develop GIS to provide a normalized database to develop analysis, produce maps and present national and regional reports. Optimise the use of available information.	Normalize and standardize GIS at the national level.
	Instituto Nacional de Defensa Civil - INDECI	Sistema de Información Geográfica - SIG	Provide SINADECI with updated geographic information for disaster purposes, supply central, regional, and local government bodies with information about dangers, vulnerabilities and risks at the national level for planning, prevention, and decision-making purposes.	Provide and generate geographic information about disasters, natural dangers, resources, population and infrastructure using the GIS as a communication channel with SINADECI, and coordinate the transmission and standardization of geographic information of institutions comprising SINADECI.
Venezuela	Instituto Geográfico de Venezuela Simón Bolívar	Diseño e Implementación de la Base de Datos en Materia de Geografía, Cartografía y Catastro (DATAWAREHOUSE)	Centralize geographic data of the IGVSb in order to share, market, and update it.	Standardize digital geo-referenced data exchange.

Source: Argentina: Instituto Geográfico Militar, official site [online] <<http://www.igm.gov.ar>>; Brazil: Instituto Nacional de Pesquisas Espaciais (INPE), official site [online] <<http://www.inpe.br>>; Bolivarian Republic of Venezuela: Instituto Geográfico de Venezuela, official site [online] <<http://SimonBolivar.www.igvsb.gov.ve>>; Chile: Instituto Geográfico Militar, official site [online] <<http://www.igm.cl>>; Colombia: Instituto Geográfico Agustín Codazzi, official site [online] <<http://www.igac.gov.co>>; Mexico: Instituto Nacional de Estadística, Geografía e Informática (INEGI), official site [online] <<http://www.inegi.gob.mx>>; Nicaragua: Instituto Nicaragüense de Estudios Territoriales (INETER), official site [online] <<http://www.ineter.gob.ni>>; Panama: Instituto Geográfico Nacional Tommy Guardia, official site [online] <<http://www.mop.gob.pa/igntg>>; Peru: Instituto Geográfico Nacional, official site [online] <<http://www.ignperu.gob.pe>>, Instituto Nacional de Defensa Civil (INDECI), official site [online] <<http://www.indeci.gob.pe>>.

Summary: Geo-referenced information projects are increasing in countries of the region. However, there does not appear to be any regional coordination mechanism for arriving at agreed standards.

Challenge: *Take advantage of existing projects and promote regional coordination for standardising geo-referenced information systems.*

Action 16.2: “Link national educational portals with a view to establishing a Latin American and Caribbean network of educational portals so that educational experiences and content can be shared, and promote the adaptation, localization and development of educational content for dissemination via this network.”

TABLE 21
EXAMPLES OF EDUCATIONAL PORTALS IN LATIN AMERICA
(2005)

Project and link	Target population	Created/ maintained by	Priority	Geographic focus
ARGENTINA				
Educ.ar www.educ.ar	Primary and secondary students, teachers, parents, community and workers	Government (Education, Science and Technology) Ministry	Integrate ICTs in the school system and reduce the digital divide.	International, Regional, National
Eduguia.net www.eduguia.net	Teachers, parents, community and workers; in the 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 services to schools 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 educational 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 teachers, parents and students with effective educational computer media.	International
BRAZIL				
Educar www.educar.sc.usp.br	Primary and secondary students, teachers	Government and not for profit civil organization. (Programa Experimentoteca Pública Nacional)	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 combat digital exclusion, promote equality of opportunity.	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 businesspeople.	National
CHILE				
Educarchile www.educarchile.cl	Primary and secondary students, university students, teachers, parents, community	Government (Ministerio de Educación de Chile and Fundación Chile)	Contribute to enhancing human resources, which constitute 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	Government (Ministerio de Educación, Ciencia y Tecnología)	Promote cultural exchange between local communities and their relations 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	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 multi-diffusion, allowing for 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, reinforce equity and improve 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 educational communities.	Regional
Redacademica www.redacademica.edu.co	Primary and secondary students, university students, teachers, parents, community and workers	Government (Secretaría de Educación Bogotá)	Develop and strengthen basic working skills in children and young people 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 ICTs.	National
El Educador www.eleducador.com	Teachers	Private organization	Contribute to overcoming the digital divide between developed and developing countries through education and technology.	International
Escuela Virtual www.recintodelpensamiento.com/escuelavirtual	Primary and secondary students, teachers	Nonprofit 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 information.	National
Navegar www.proyectonavegar.com	Teachers	Academic organization	Train public sector teachers in computer use 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 high-quality education for all.	National
Eduared www.eduard.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' needs regarding education and training, and encourage the use of ICTs among students, teachers and learning professionals.	National
Universia www.universia.net	University students	Private organization	Support ITC developments in regard to education, educational innovation and communication interfaces within Latin America as a whole.	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 ensure that all Mexicans have access to a high-quality education.	National
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 content related to the country's educational needs.	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; taking into account new sections.	National
PANAMA				
Educacion cibemetica 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 nonformal education, links to digital libraries, scholarships.	International Regional

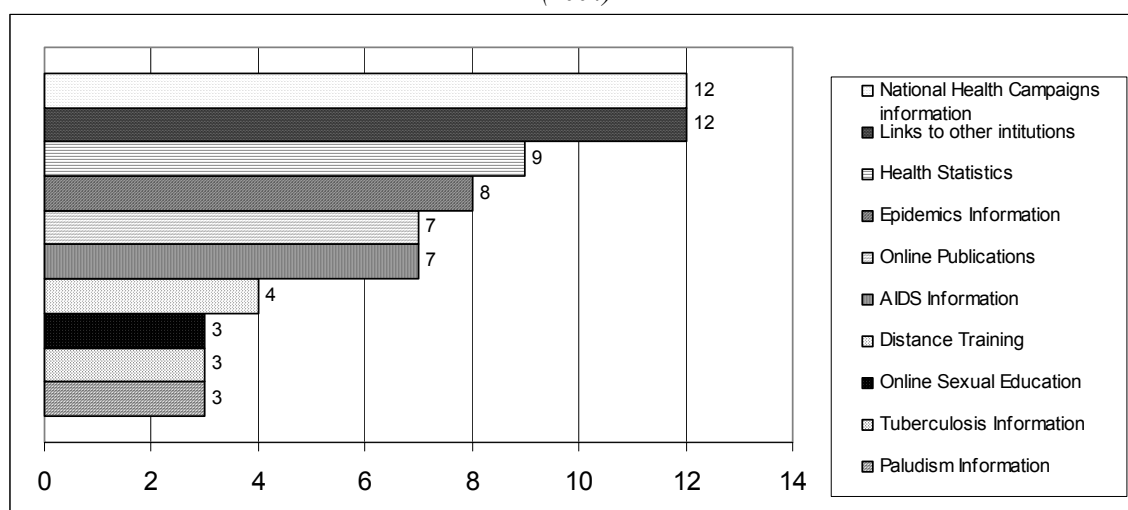
Source: Observatory for the Information Society in Latin America and the Caribbean (OSILAC).

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

Challenge: *Facilitate cooperation and exchange among content providers through the establishment of educational networks, benefiting from economies of scale that digital information offers. Make optimal use of public goods in the field of online education within and among countries.*

Action 17.1: “Promote and strengthen National Health Service networks, including public, private and civil society initiatives.”

FIGURE 11
CONTENTS OF PORTALS IN LATIN AMERICAN HEALTH MINISTRIES
(Number of countries, N=14)
(2004)



Source: Observatory for the Information Society in Latin America and the Caribbean (OSILAC), on the basis of Argentina: Ministerio de Salud y Ambiente, official site [online] <<http://www.msal.gov.ar>>; Bolivarian Republic of Venezuela: Ministerio de Salud y Desarrollo Social, official site [online] <<http://www.msds.gov.ve>>; Bolivia: Ministerio de Salud y Deportes, official site [online] <<http://www.sns.gov.bo>>; Chile: Ministerio de Salud, official site [online] <<http://www.minsal.cl>>; Colombia: Ministerio de la Protección Social, official site [online] <<http://www.minproteccionsocial.gov.co>>; Costa Rica: Ministerio de Salud, official site [online] <<http://www.netsalud.sa.cr/ms/>>; Cuba: Ministerio de Salud Pública, official site [online] <http://www.cubagob.cu/des_soc/salud/>; Ecuador: Ministerio de Salud, official site [online] <<http://www.msp.goc.ec>>; El Salvador: Ministerio de Salud Pública y Asistencia, official site [online] <<http://www.mspas.gob.sv>>; Guatemala: Ministerio de Salud, official site [online] <<http://www.mspas.gob.gt/CMS/>>; Mexico: Secretaría de Salud, official site [online] <<http://www.salud.gob.mx>>; Nicaragua: Ministerio de Salud, official site [online] <<http://www.minsa.gob.ni>>; Panama: Ministerio de Salud, official site [online] <<http://www.minsa.gob.pa>>; Paraguay: Ministerio de Salud y Bienestar Social, official site [online] <<http://www.mspbs.gov.py>>; Peru: Ministerio de Salud, official site [online] <<http://www.minsa.gob.pe>>; Uruguay: Ministerio de Salud, official site [online] <<http://www.msp.gub.uy>>.

Summary: Most Latin American Health Ministries only provide information on statistics and certain illnesses relevant to the region, through their Web portals. The potential of ICTs to help in combating diseases and educating the public about health risks is not being exploited. Only 4 of the 14 Ministries observed offer online educational tools, while 3 provide interactive applications to educate the public about the risks of sexually transmitted diseases.

Challenge: *Upgrade content and promote regional initiatives to exploit ICTs' potential to improve health systems.*

Action 17.2: “Promote and strengthen regional health information networks, such as those of the Pan American Health Organization and the Regional Library of Medicine and Health Sciences (BIREME), with attention being devoted to convergence towards common standards for interoperability, to application and software exchange, and to virtual health library portals.”

TABLE 22
VIRTUAL HEALTH LIBRARIES LINKED TO BIREME

Country	Virtual Health Library
Argentina	www.bvs.org.ar
Barbados	www.vhl.bb
Bolivia	www.saludpublica.bvsp.org.bo
Brazil	www.saudepublica.bvs.br
Chile	www.bvs.cl
Colombia	www.col.ops-oms.org
Costa Rica	www.binasss.sa.cr
Cuba	www.bvs.sld.cu
Dominican Republic	www.bvs.org.do
Ecuador	www.opsecu.org/bvs-ecuador
Guatemala	www.medicina.usac.edu.gt/bvsgt
Honduras	www.bvs.hn/html/es/collection.html
Mexico	www.bvs.insp.mx
Nicaragua	www.bvs.org.ni
Panama	www.bvspanama.gob.pa/html/es/home.html
Paraguay	www.ins.gov.py/Bvs.htm
Peru	www.bvs.org.pe
Uruguay	www.ops.org.uy/ehome.htm
Venezuela	www.bvs.org.ve

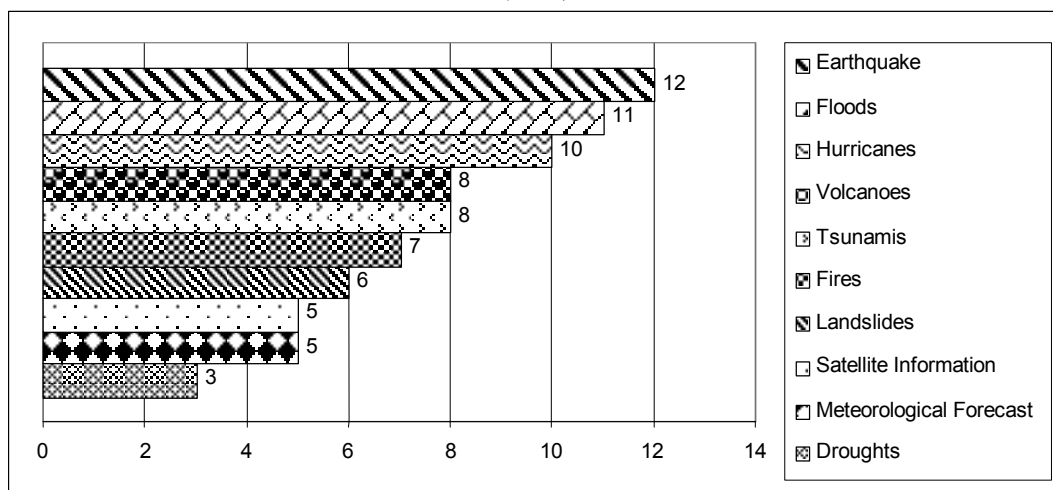
Source: Observatory for the Information Society in Latin America and the Caribbean (OSILAC).

Summary: Countries of the region are linked to the BIREME initiative.

Challenge: *Promote the consolidation of virtual libraries. These are still in the process of being developed and integrated in new networks.*

Action 18: “Strengthen the regional and international interconnection of digital information networks for disaster prevention, while considering regional administration and coordination of assistance in the event of disasters.”

FIGURE 12
INFORMATION PROVIDED BY NATIONAL CENTRES FOR THE PREVENTION OF DISASTERS
(Number of countries, N=13)
(2004)



Source: Observatory for the Information Society in Latin America and the Caribbean (OSILAC), on the basis of Argentina: Integrated system for project formulation, appraisal and oversight (SIFEM); Belize: National Emergency Management Organization (NEMO); Bolivarian Republic of Venezuela: Protección Civil y Administración de Desastres (PCAD); Chile: National Office for Emergencies (ONEMI); Colombia: Dirección General para la Prevención y Atención de Desastres (DGPAD); Costa Rica: Comisión Nacional de Emergencia (CNE); Dominican Republic: Comisión Nacional de Emergencia (CNE); Ecuador: Defensa Civil; El Salvador: Comité de Emergencia Nacional (COEN); Guatemala: Coordinadora Nacional Para la Reducción de Desastres (CONRED); Jamaica: Office of Disaster Preparedness and Emergency Management (ODPEM); Mexico: Centro Nacional de Prevención de Desastres (CENAPRED) and Panama: Sistema Nacional de Protección Civil (SINAPROC).

TABLE 23
REGIONAL DISASTER INFORMATION CENTRES
(2005)

Information centre	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 (CEPREDENAC)	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.cdera.org
Caribbean Disaster Information Network (CARDIN)	www.cardin.uwimona.edu.jm

Source: Observatory for the Information Society in Latin America and the Caribbean (OSILAC).

Summary: Disaster centres, offering information via the Internet, currently exist. Various initiatives are underway to interconnect national information networks dealing with environmental disasters.

Challenge: *Make better use of existing information and communication possibilities by integrating real-time applications and extending inter-connections among information networks.*

Action 19.2: “Implement a regional agenda to integrate ICTs in justice systems.”

TABLE 24
THE JUDICIAL IBERO-AMERICAN SUMMIT
(2005)

Description	Networks Projects			
	RIAEJ	IBERIUS	CIACJV	IBER RED
Organization that fosters cooperation and agreement between the judicial branches of the 21 countries of the Ibero-American community of nations, bringing together the highest instances and control systems of the Ibero-American judicial systems.	Red Iberoamericana de Escuelas Judiciales	Red Iberoamericana de Documentación Judicial	Centro Iberoamericano de Capacitación Judicial Virtual	Red Iberoamericana de Cooperación Judicial
	Community for connection, cooperation, agreement and reciprocal support between the Judicial Schools and Public Centres of Judicial Qualification of Latin America.	Community of cooperation, agreement and reciprocal support in the scope of the information and legal documentation.	Instrument for the strengthening of judicial schools, in order to provide an efficient, uniform and accessible system for qualifying Latin American judges and magistrates, using technology for judicial distance-qualification.	Network for judicial cooperation between the 22 countries of the Latin American Judicial Summit, aimed at combating cyber crime.

Source: Secretaría Permanente de Cumbre Judicial, official site [online] <<http://www.cumbrejudicial.org>>.

Summary: A working group on e-justice at the Ibero-American level currently exists.

Challenge: *Strengthen an integrated regional agenda for e-justice that could establish best practice worldwide.*

Action 20: “Promote and strengthen existing regional initiatives for the use of ICTs for environmental protection and the sustainable use of natural resources, considering the concurrence of the public and private sectors, civil society, and indigenous peoples and communities.”

TABLE 25
PROJECT ESALC ON THE SUSTAINABILITY IN LATIN AMERICA AND THE CARIBBEAN

OBJECTIVES OF ESALC		
Methodological framework for measuring and evaluating the progress of countries of the region toward achieving sustainable development.		
Support definitions of public policies in countries of the region through a systematic and integrated evaluation.		
ICT INSTRUMENTS OF ESALC		
	FUNCTIONS	CHARACTERISTICS
SIGESALC - Database with indicators at national level and a Geographic Information System (SIG).	Provide special information for all countries of the Latin American region.	More than 240 geo-referenced indicators (maps), which have been arranged separately for each country of the region. Tools to study the relation between environment and society, with the advantage of being able to integrate the analysis of large amounts of data, and to superimpose and design indicators that provide different scales or levels of aggregation.
RIDS - Network of Sustainable Development Indicators.	Support countries of the region in their capacity to develop and implement sustainable development indicators.	Directory of institutions that work in the area of Sustainable Development Indicators in Latin America and the Caribbean, consisting of the websites of public and private organizations. Internet directory and interactive virtual space that makes it possible to access substantive information on sustainability indicators.

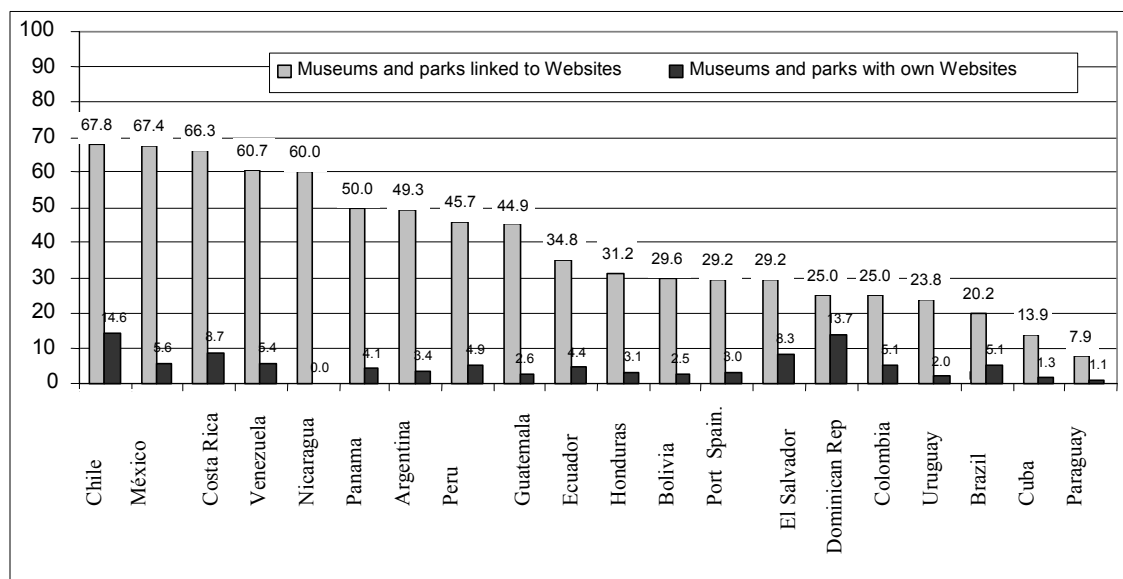
Source: Economic Commission for Latin America and the Caribbean (ECLAC).

Summary: ESALC is an example of a project that uses ICTs for monitoring sustainable development.

Challenge: *Promote regional initiatives for the use of ICTs for environmental protection and the sustainable use of natural resources.*

Action 21.1: “Promote and encourage initiatives and policies that, through the use of ICTs, provide citizens with wider access to public information and to the cultural, historic, scientific and educational heritage, including its preservation in electronic media.”

FIGURE 13
MUSEUMS AND NATURE PARKS WITH WEB PRESENCE
(Percentage) (2003)



Source: Instituto Latinoamericano de Museos, official site [online] <<http://www.ilam.org/>>.

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

Summary: A considerable number of museums and parks in the region are linked to other websites. However, most of them have no separate web presence.

Challenge: *Create mechanisms to ensure that administrators are able to access, maintain and update “virtual information gateways” regarding their institutions.*

D. Policy instruments

Action 22.1: “Establish or confirm a coordinating entity or mechanism for national strategies in every country of the region, which takes into account participation by civil society and the private sector.”

TABLE 26
PUBLIC COORDINATION IN SELECTED COUNTRIES
(2004)

Countries	Principal Coordinator	Legal Basis	Launch	Strategic Leadership	Operational Leadership	Participation of private sector/ civil society
Argentina	Comité Estratégico Mixto para la Sociedad de la Información y el Conocimiento	Decree 1018/98, modified by Decree 252/00 and 243/01	Nov. 2004	Jefatura de Gabinete de Ministros de Presidencia de la Nación	Different programmers associated with different levels of government	Medium
Chile	Grupo de Acción Digital www.agendadigital.cl	Decree July 1998 + Decree 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	Medium
Dominican Republic	Comisión Nacional para la Sociedad de la Información y el Conocimiento (CNSIC)	Decree Number 212-05	August 2002	Technical Secretariat of the Presidency	Technical Secretariat of the Presidency	Medium
Ecuador	Comisión Nacional de Conectividad www.conectividad.gov.ec	Decree 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
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
Trinidad and Tobago	Steering Team of the National Information and Communication (ICT) Plan www.nict.gov.tt	n.a.	October 2002	Ministry of Public Administration and Information, with inter-ministerial coordination	Steering Team	High

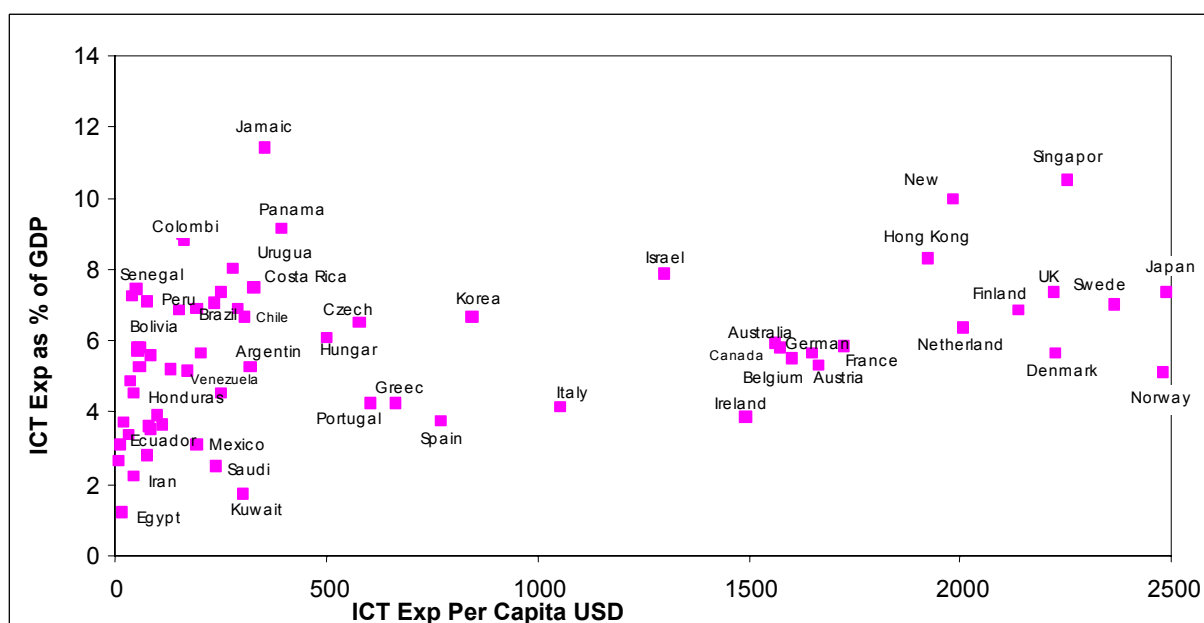
Source: Prepared by the author.

Summary: There is no single model for coordinating public policies.

Challenge: *Foster institutionalization and strengthen the operational phase of strategies, taking into account national conditions.*

Action 23.1: “Establish a working group with members of public, private, sub-regional, regional and international organizations to evaluate national and regional needs for financing ICT development.”

FIGURE 14
ICT EXPENDITURES IN US\$ PER CAPITA AND AS % OF GDP
(2003)



Source: Observatory for the Information Society in Latin America and the Caribbean (OSILAC) based on information from World Bank, World Development Indicators Database (WDI).

Note: sample of 66 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.

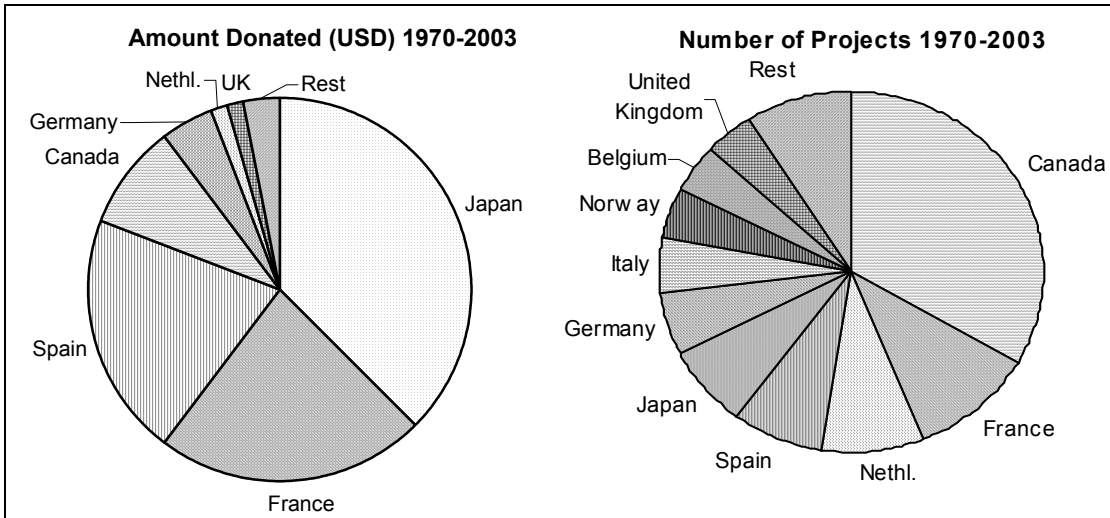
Summary: In relative terms, national ICT expenditures (as % of GDP) are near or above (6.9% of GDP in Brazil; 6.7% in Chile, 9.0% in Panama and Colombia) the world average (5.7%). However, in terms of per capita ICT expenditure, there is a huge gap in Latin American countries. Latin American and Caribbean economies spent approximately 200 USD per capita on ICT for year 2003, while most developed countries spent 1500-2500 USD in the same year.

Challenge: *Intensify work on aggregate data of this type, indicating that further data mining and analysis are necessary to achieve the desired target.*

Action 23.2: “Suggest initiatives for optimizing the use of financial resources and instruments and, if necessary, propose new ones, with the aim of mobilizing more resources, considering

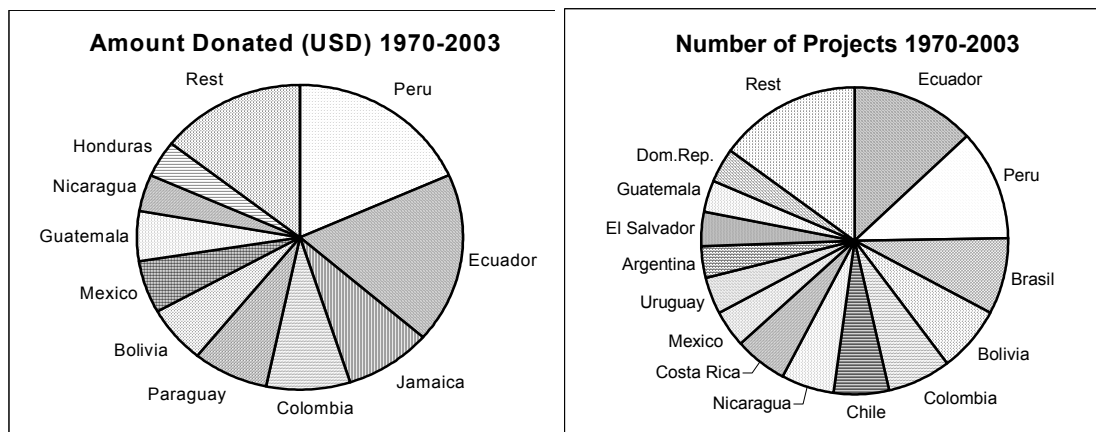
subregional, regional and international financial and cooperation agencies and the particular features of each country.”

FIGURE 15
MAJOR DONOR COUNTRIES OF BILATERAL COOPERATION FOR COMMUNICATION PROJECTS IN LATIN AMERICA BY AMOUNT DONATED / NUMBER OF PROJECTS
(Percentage of the total) (1970-2003)



Source: Observatory for the Information Society in Latin America and the Caribbean (OSILAC) based on information from Accessible Information on Development Activities (AiDA), “Development Gateway” [online] 2004 <<http://aida.developmentgateway.org>>.

FIGURE 16
MAJOR RECEPTOR COUNTRIES OF BILATERAL COOPERATION FOR COMMUNICATION PROJECTS IN LATIN AMERICA BY AMOUNT DONATED / NUMBER OF PROJECTS
(Percentage of the total) (1970-2003)

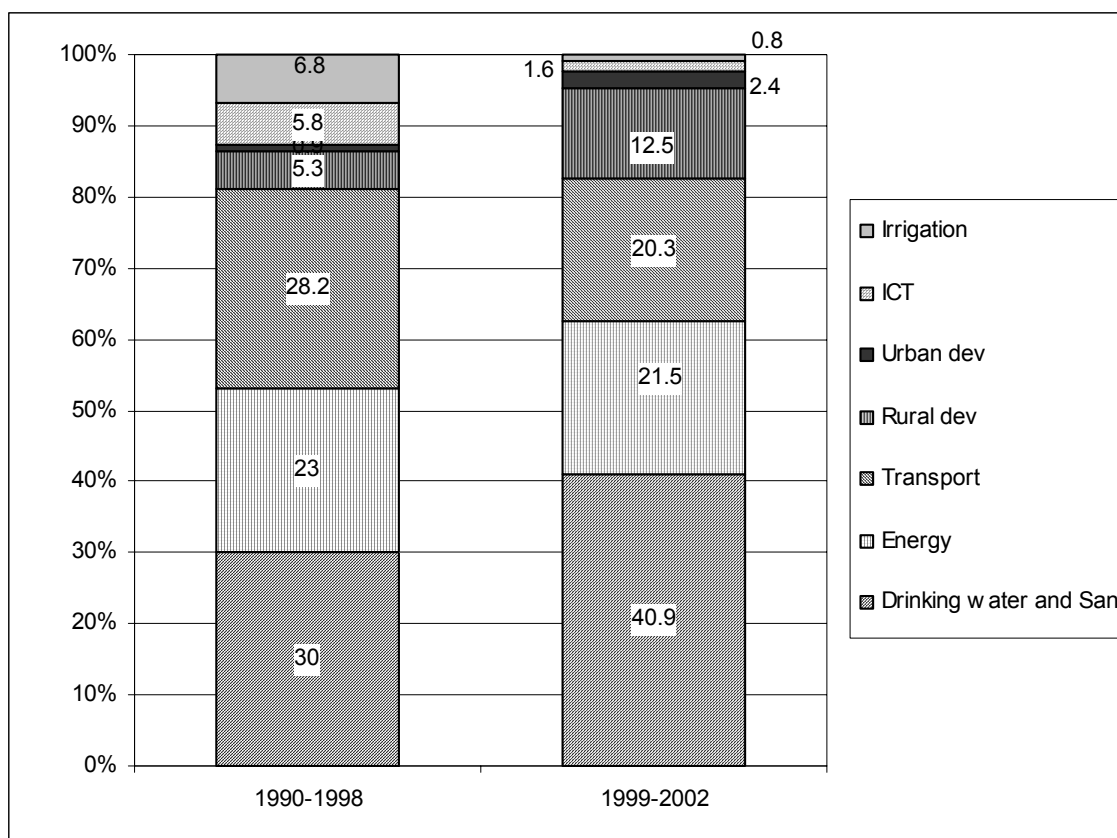


Source: Observatory for the Information Society in Latin America and the Caribbean (OSILAC) based on information from Accessible Information on Development Activities (AiDA), “Development Gateway” [online] 2004 <<http://aida.developmentgateway.org>>.

Summary: While Japan’s bilateral cooperation represented the largest amount of financial aid in the field of development assistance for communication projects, Canada undertook the highest number of projects in this field in the region. Peru and Ecuador placed great emphasis on channelling development aid toward projects in the field of communication.

Challenge: Raise the relative priority of ICT projects in requests for international cooperation.

FIGURE 17
SECTORAL SHARE OF THE WORLD BILATERAL ODA COMMITMENT FOR
INFRASTRUCTURE
(Percentage, Period Average) (1990-2002)



Source: Organisation for Economic Co-operation and Development (OECD), *Financing ICTs for Development, Efforts of DAC Members. Review of Recent Trends of ODA and its Contribution*, 2005.

Summary: In terms of the total ODA commitment for infrastructure, ICTs represent a very low share of the total. Most ODA is spent on basic needs in sanitation, energy, transport and rural development.

Challenge: Investigate how to better balance ICT with other needs.

Action 24.1: “Examine, with the active participation of civil society, the private sector and academia, public policies for universal access, expanding this concept to include all ICTs, in order to advance toward a second generation of universal access programmes.”

TABLE 27
UNIVERSAL ACCESS FUNDS IN LATIN AMERICA AND THE CARIBBEAN
(2003)

Country	Fund Denomination	Year of Issue	Legal Foundation	Administering 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	Fiduciary fund administers the funds for this service.
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, Agosto 2000 and Decreto no 3.624, Octubre 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)
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 rural 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 (FISDL) y Min. 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. Agosto 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, Abril 9, 1997.	ARESEP y Ministerio de Planificación Y Política económica

Paraguay	Fondo de Servicios Universales	1995	Reglamento del Fondo de Servicios Universales, Ley n° 642/95 de Telecomunicaciones. Capítulo II. Art. 97	Comisión Nacional de Telecomunicaciones. Min. Economía y Finanzas
Peru	(FITEL) Fondo de inversión en Telecomunicaciones	1993	Ley de Telecomunicaciones (D.S. N° 013-93-TCC del Mayo 6, 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, Marzo 23, 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 Telecom. Junio 12, 2000	Consejo Nacional de Telecomunicaciones (CONATEL)

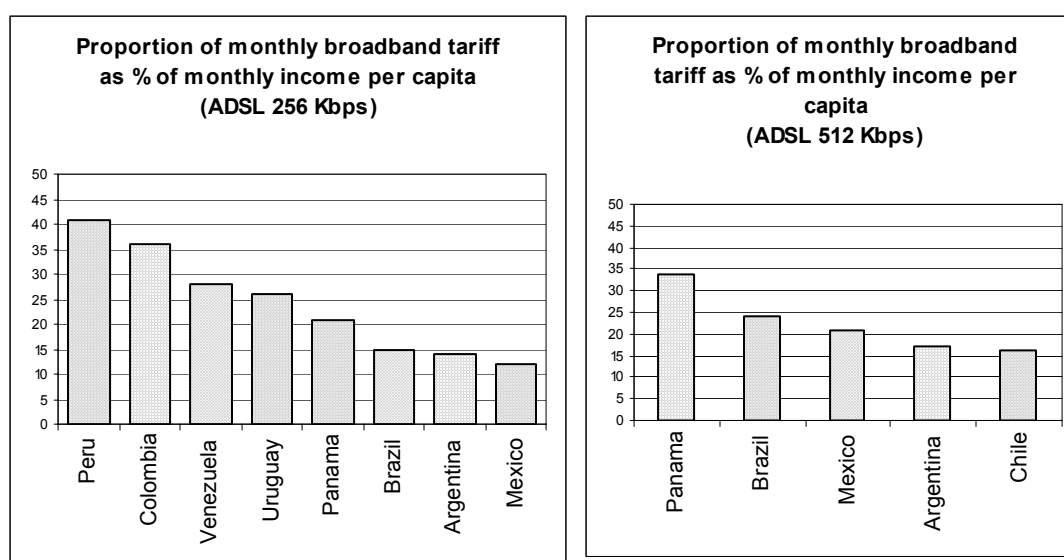
Source: Observatory for the Information Society in Latin America and the Caribbean (OSILAC).

Summary: Universal access funds in the telecommunications sector exist in many countries.

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

Action 24.2: “Carry out and support, with the active participation of civil society, the private sector and academia, systematic efforts to hold a regional dialogue on technology and service convergence and public policies oriented towards the universalization of access and cost reduction in Internet access in order to include low-income sectors and rural or remote areas”.

FIGURE 18
AFFORDABILITY OF BROADBAND IN LATIN AMERICAN COUNTRIES
(2004)



Source: Prepared by the author. Note: Calculations are based on local currency at current prices. Calculations of monthly income per capita are based on per capita income averages over the per capita income distribution of households by deciles. ADSL (Asymmetric Digital Subscriber Line) is a form of DSL, a data communications technology that enables faster data transmission over copper telephone lines than a conventional modem can provide.

Summary: According to the examples provided by these countries, Latin American has a relative Internet broadband access cost of over 10% of the monthly income per capita. For comparison, in the United States flat-rate Internet access through xDSL costs less than 1.5% of monthly income per capita.

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

Action 25: “Establish sub-regional working groups to promote and foster policies for harmonizing norms and standards, with the aim of establishing legislative frameworks that merit trust and offer security at both the national and regional levels, paying special attention to legislation on the protection of privacy and personal data, cyber-crime and ICT crime, spam, digital or electronic signatures, and electronic contracts as a framework for the development of the information society.”

TABLE 28
LEGISLATION ON ELECTRONIC DOCUMENTS AND TRANSACTIONS
(2005)

Country	Norm	Title
Argentina	Law 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	Law N°10.406,	Existence and validity of electronic documents
Colombia	Decree 2150	Article 26: Utilization of the electronic systems of archives and the transmission of documents.
	Law 527	Issue full juridical protection for electronic messages, provided that they have the same legal validity as paper documents.
Ecuador	Law 2002-67	Law of electronic commerce, electronic signatures and data messages
Panama	Law 43	Regulates electronic documents and signatures, electronic-commerce entities and exchange of electronic documents
Peru	Law 24719	Law that regulates the codes of the "Código de Procedimientos Civiles" for permitting notification via electronic media
	Law 28186	Law that establishes the scope of the "Decreto Legislativo N° 681." It regulates the use of advanced technologies for files and information.
	Law N° 26887	"Ley general de Sociedades Peruana." This regulates the tax notifications using ICTs.
	Law N°27038	Law that modifies the "Decreto Legislativo N°816." This provides Sunat and Customs, as well as the "Tribunal Fiscal," with resources to digitize files and receive technical support
Venezuela	Decree N° 1.204 de	"Ley de Mensajes de Datos y Firmas Electrónicas"
Uruguay	Decision 7401/00	Computer system for automation of judicial files
	Decree 83/001	Determination of technical means for telematic storage, document reproduction and transmission. Current situation of Information Technologies storage and its relation to the reality and perspective of Public Administration.
	Law 16.002	It approves items 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 Economic Commission for Latin America and the Caribbean (ECLAC).

TABLE 29
PRIVACY PROTECTION LEGISLATION
(2005)

Country	Norm	Title	Year
Argentina	Law N°25326	Protection of private life, <i>habeas data</i>	2002
Brazil	Law 9507	Regulates the right of information access and the <i>habeas data</i> procedure	1997
Chile	Law N° 19628	Concerns privacy protection	1999
Ecuador	Ecuadorian Law on Electronic Commerce	Confidentiality and protection of personal data in messages	2002
	Law of Constitutional Control Art. 34,45	Enacts the official procedure for formulating the <i>habeas data</i> resource	1997
Mexico	Proposal of a federal law of protection of personal data	Protection of personal and electronic data	2001
		Law of Transparency and Access to Governmental Public Information	2002
Panama	Law 6	Norms for transparency in public administration, establishment of <i>habeas data</i> actions	2002
Paraguay	Law 1682	Regulation of private information	2000
Peru	Law 27489	Law for regulation of private clearinghouses for risk information and protection of information ownership	201
	Law N°28237	Constitutional procedural code related to <i>habeas data</i>	2004
Uruguay	Law 17838	Protection of personal data for commercial reports and <i>habeas data</i>	2004

Source: Erick Iriarte, “Estado situacional y perspectivas del derecho informático en América Latina y el Caribe”, Santiago, Chile, Economic Commission for Latin America and the Caribbean (ECLAC), unpublished, 2005.

Summary: Legislation on electronic documents and privacy in countries of the region currently exists. This is the basis for the digitization of information in many sectors, including health and public administration.

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

TABLE 30
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: United Nations Commission on International Trade Law (UNCITRAL).

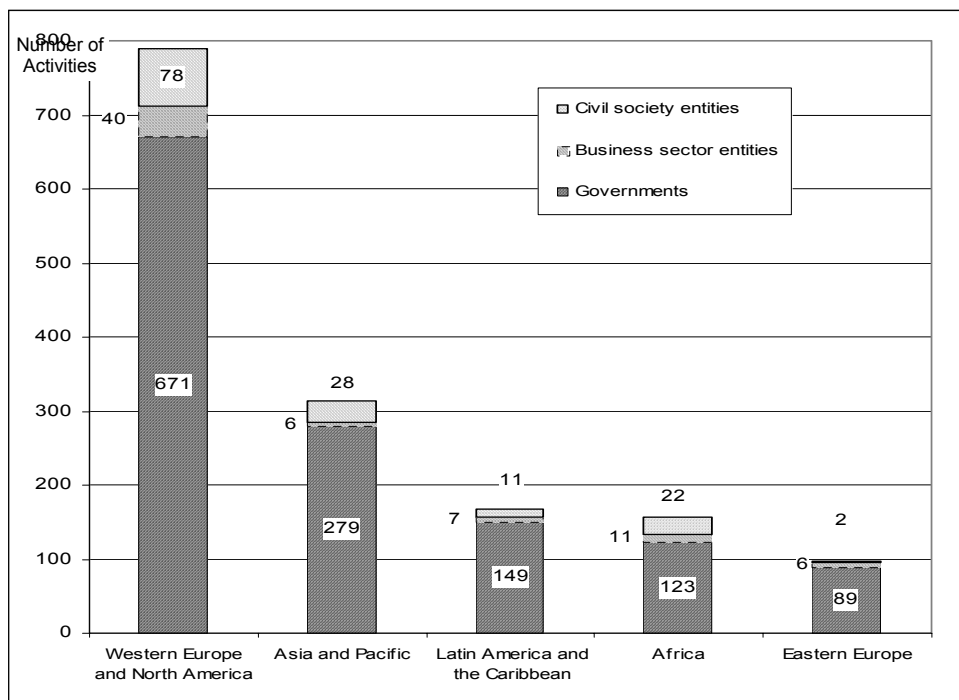
Summary: At several United Nations agencies and conferences, such as UNCITRAL and UNCTAD, efforts are being made toward a globally harmonized approach for creating confidence and security in the Information Society.

Challenge: *Actively support United Nations forums and ensure meaningful participation of all stakeholders in these processes.*

E. Enabling Environment

Action 27: “Establish a regional mechanism for follow-up to the themes of the World Summit and implementation of eLAC 2007 in accordance with the situation and priorities of each country, taking advantage of the existing structures and regional cooperation agencies, within the framework of their capacities and competencies, and in close collaboration with civil society, the private sector and the academic sector, taking into account the agreements reached in the Geneva and Tunis phases of the World Summit, as well as in the regional conferences in Bávaro and Rio de Janeiro.”

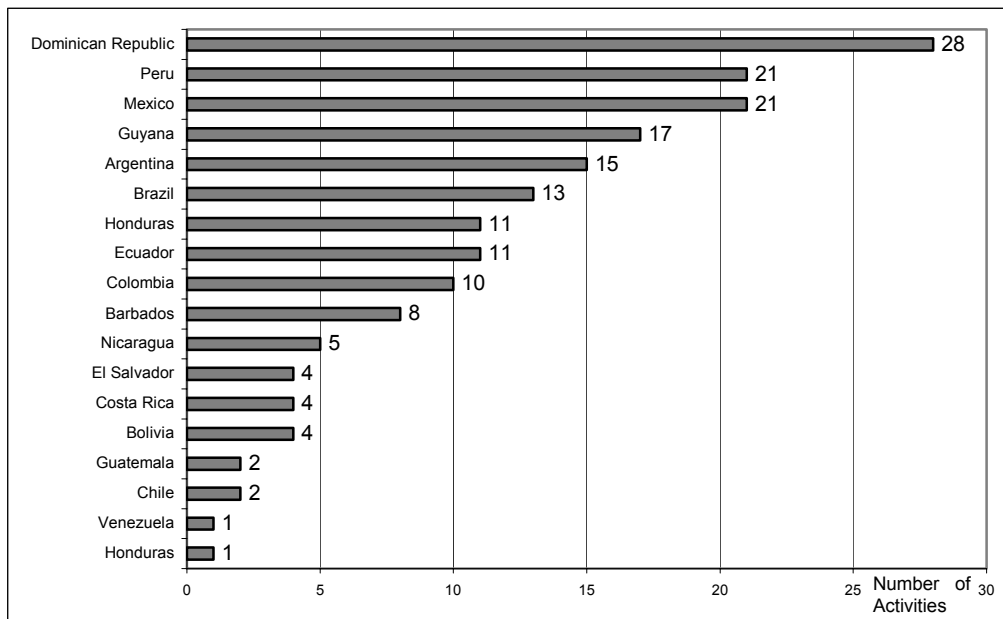
FIGURE 19
NUMBER OF ACTIVITIES REPORTED TO GLOBAL WSIS* STOCKTAKING EXERCISE
UNDERTAKEN BY GOVERNMENTS, CIVIL SOCIETY AND BUSINESS
(Number by region and sector; Number by country in Latin America) (08/2005)



Source: Observatory for the Information Society in Latin America and the Caribbean (OSILAC), on the basis of WSIS Database of Activities [online] <<http://www.itu.int/wsis>>.

***Note:** The World Summit on the Information Society (WSIS) is held in two phases. The first phase of WSIS took place in Geneva from 10 to 12 December 2003, where 175 countries adopted a Declaration of Principles and Plan of Action. The second phase will take place in Tunis from 16 to 18 November 2005, to implement the agenda leading up to achievable targets by 2015, and to agree on unfinished business, most importantly on the question of Internet governance and of financing mechanisms.

FIGURE 20
TOTAL NUMBER OF ACTIVITIES BY LATIN AMERICAN AND CARIBBEAN
GOVERNMENTS REPORTED TO GLOBAL WSIS STOCKTAKING
(08/2005)



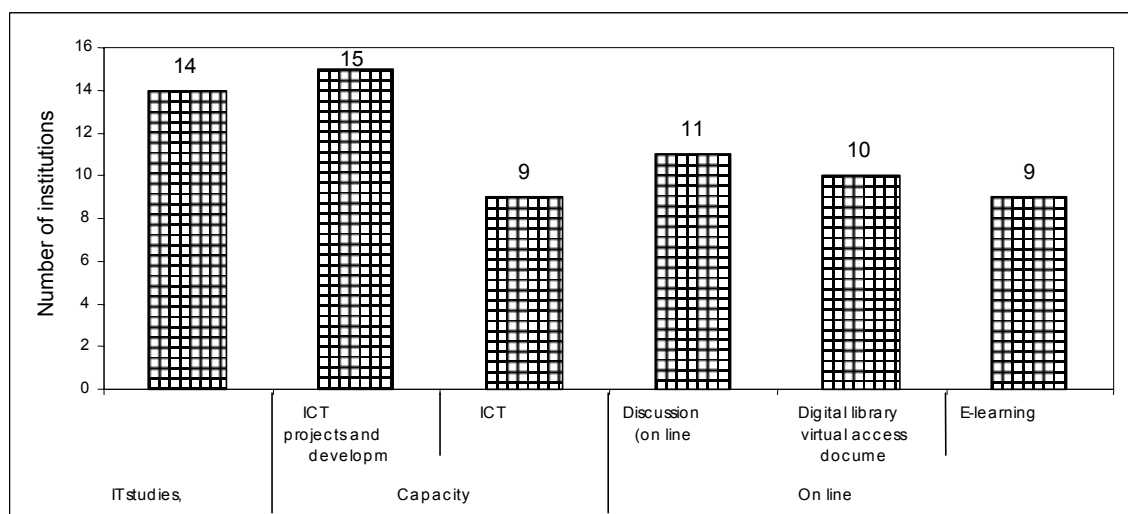
Source: Observatory for the Information Society in Latin America and the Caribbean (OSILAC), on the basis of WSIS Database of Activities [online] <<http://www.itu.int/wsisis>>.

Summary: Reply of WSIS stakeholders to the global WSIS stocktaking exercise has been highly varied. While stakeholders from other regions have completed the corresponding questionnaire with great detail, many entities from Latin America and the Caribbean did not do so until August 2005.

Challenge: *Contribute to stocktaking of current initiatives. This is essential to establish a regional mechanism as a follow-up to WSIS, and in the implementation of eLAC2007. The PROTIC database (www.protic.org) is a proactive response to this need, requiring the input of all stakeholders from the region.*

FIGURE 21
EXAMPLES OF ICT-RELATED ACTIVITIES OF INTERNATIONAL ORGANIZATIONS FROM
THE REGION

(Number of Institutions, N=15)
 (09/2005)



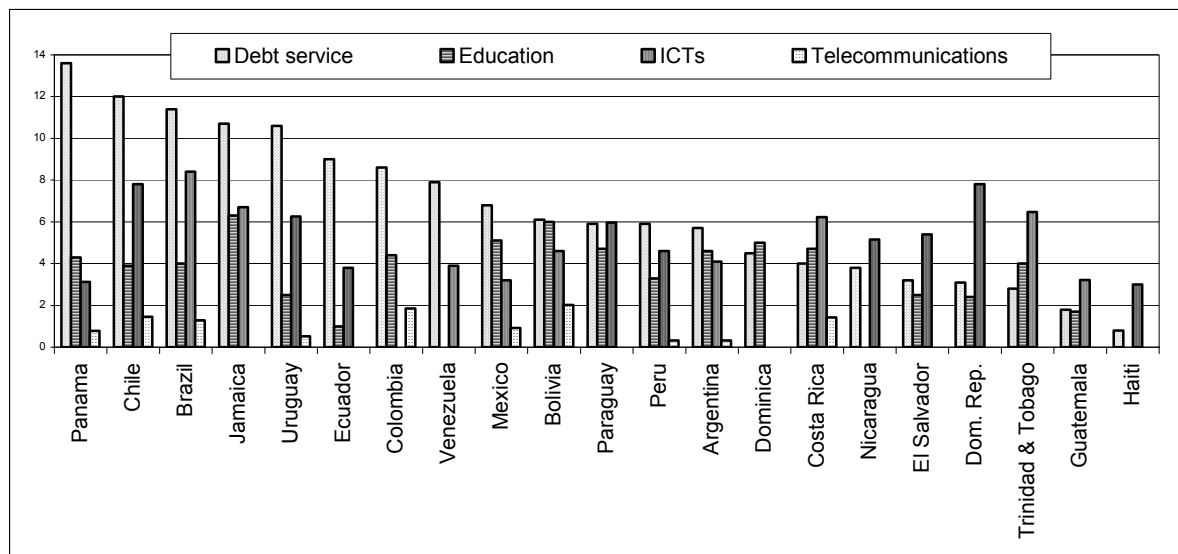
Source: Latin American Integration Association (LAIA); Caribbean Community (CARICOM); Economic Commission for Latin America and the Caribbean (ECLAC); Andean Community; Food and Agriculture Organization of the United Nations (FAO); Global Environment Facility; Inter-American Development Bank (IDB); International Labour Organization (ILO); Southern Common Market (MERCOSUR); Organization of American States (OAS); Pan American Health Organization (PAHO); United Nations Conference on Trade and Development (UNCTAD); United Nations Educational, Scientific and Cultural Organization (UNESCO); World Intellectual Property Organization (WIPO) and World Bank.

Summary: Sub-regional, regional and international organizations of the region are mainstreaming ICT issues into their work programme.

Challenge: *Exploit the vast potential of ICTs to improve the performance of international organizations, given the borderless nature of the Internet, and given that a large part of the work of international organization is information and communication based. International organizations need to become “e-organizations” with similarly profound institutional e-government changes in the public sector, involving the reorganization of workflows.*

Action 29: “Devise concrete regional initiatives and proposals for overcoming obstacles to the effective implementation of national strategies for the development of the information society arising from the prevailing international economic, trade and financial order, exploring possible formulas, such as debt relief, as a means of promoting investment to boost infrastructure development and training in the use and development of ICTs.”

FIGURE 22
DEBT SERVICE VS. EDUCATION VS. ICT VS. TELECOMMUNICATIONS
(Expenditures as percentage of GDP) (2003)



Source: Prepared by the author.

Summary: In many countries of the region, payments for debt service are higher than expenditures for public education or ICT.

Challenge: Find innovative solutions to relieve the burden of indebted countries and to release more resources to finance the transition toward information societies for all.