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PROmotion of an Ict Dialogue between Europe and America Latina

D.1.2 - Report on ICT Priorities in Latin America

Grant Agreement number: 231730

Project acronym: PRO-IDEAL

Project title: PROmotion of an ICT Dialogue between Europe and America Latina

Funding Scheme: Support Action

Due date: 1/03/2009
Actual date: 15/05/2009
Document Author/s: INMARK
Version: V1.0
Dissemination level: PU
Status: Final

SEVENTH FRAMEWORK PROGRAMME

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1 INTRODUCTION

PRO-IDEAL – PROmotion of an ICT Dialogue between Europe and America Latina – aims to promote the ICT programme in Argentina, Brazil, Chile and Uruguay, and complementary in Colombia. PRO-IDEAL activities, such as coaching courses for potential project participants and ICT promotion through the Web 2.0 PRO-IDEAL platform (www.pro-ideal.eu), are geared at improving the overall performance of the countries' research community in the ICT programme.

The launch of the 7th EU RTD Framework Programme (FP7) 2007-2013 and ICT as its most doted priority places new emphasis on international research cooperation which is increasingly seen as being at the centre of community policies[1]. The opening of all FP7 areas to third-country participation underlines this approach. Science and technological development has always been an international endeavour, but the need for critical mass and large-scale infrastructure for advancing research in many areas increasingly call for strong international partnerships. ICT has also proved instrumental to enhancing and enriching many other policy areas and by now, is key to almost all product chain developments and business processes.

Moreover, ICT supports the main objective of EU-Latin America relations to improving social cohesion, in particular by contributing to better education, health and public administration. In recent years the European Union and Latin America region have paved the way for reinforced research cooperation through international agreements on science and technology, signed between the EC and Argentina, Brazil, Chile and Mexico. S&T Agreements are the framework to facilitate cooperative activities between the EC and these Latin America countries in fields of common interest of research and development activities, including ICT.

At regional level, the United Nations Economic Commission for Latin America and the Caribbean – ECLAC, through the @LIS programme, set up the Information Society programme in order to promote public policies for the advancement of development-oriented information societies in Latin America and the Caribbean. In this framework, ICT are conceived as instruments for economic development and social inclusion.

Nevertheless, there is an evident fragmentation of S&T systems as research in Latin America are mainly conducted at a national level. And in spite of the importance of ICT as an R&D policy priority, our target countries (Argentina, Brazil, Chile and Uruguay) have not adopted integrated ICT policies and programmes. Therefore currently there is a variety of approaches to confronting the ICT issue, depending on the country's degree of development as well as the level of urgency or priority that policy-makers assign to ICT.

In order to enable the participation in the FP7-ICT programme by the scientific community from Argentina, Brazil, Chile and Uruguay, the objectives of this deliverable are twofold: on the one hand to identify R&D/ICT national policies, programmes and relevant priorities in the four target countries, and on the other hand to define common ICT topics for cooperation with Europe in FP7-ICT.

[1] SEC(2007)47. Commission staff working document, A new approach to international scientific and technological co-operation in the 7th Research Framework Programme (2007-2013) and 7th Framework Programme of the European Atomic Energy Community (Euratom) (2007-2011).

2 PRIORITY AREAS FOR DEVELOPMENT OF THE INFORMATION SOCIETY IN LATIN AMERICA

ICT is a relatively recent topic in Latin America and governments have pursued various different paths to including technological issues within their political agendas. Investment in ICT accounted from 10% to 14% of regional economic growth between 1995 and 2004. In the beginning, it was understood as an IT issue with a primarily technological vision that required skills and capabilities on the part of programmers, systems analysts and technicians. Subsequently, given the potential of ICTs for globalization and economic development trends, a growing recognition arose in some countries of the need to approach this topic from a broad policy perspective as well[2].

Since 2000, the United Nations Economic Commission for Latin America and the Caribbean – ECLAC has included information society development in its work programme, as part of the theme "innovation and development" which is one of its main areas of endeavour http://www.eclac.org/socinfo/. As the latest step towards a common regional policy agenda, governments approved the eLAC Regional Action Plan for the Information Society in Latin America and the Caribbean that understands ICT as instruments for economic development and social inclusion. eLAC' long-term vision (until 2015) is in line with the Millennium Development Goals (MDGs) and those of the World Summit on the Information Society (WSIS).

2.1 ICT policy Agendas

In recent years Latin America countries have made enormous progress in terms of the use of ICTs on a mass scale in a broad range of areas of economic and social development. This includes the deployment of digital information infrastructure, modernization of the State, the digitization of economic processes as a means of boosting productivity, the upgrading of education and health care, and natural disaster management[3].

The inclusion of the various issues in ICT policy agendas depends on the degree of maturity the issue has reached within the countries of the region, which is reflected in the elaboration of digital initiatives. The document *Digital Review 2007*, published by ECLAC's Information Society Programme, reviews the digital agendas of 25 countries in the region. According to the latest update, the countries that are most advanced in the implementation of public policies in ICT are: **Chile**, Granada, Jamaica, Mexico and **Uruguay**. These countries even have second generation agendas.

Another group of countries includes those elaborating first-generation strategies (be it at the origin, formulation or implementation stages), which also exhibit a high intensity of ICT-related projects and activities; such as **Argentina**, Bahamas, Barbados, **Brazil**, Costa Rica, Colombia and Trinidad & Tobago. Other countries in the same group are: Cuba, Dominican Republic, Panama and Peru; however, their various projects only began within the past five years. Lastly, countries such as Bolivia, Ecuador, El Salvador, Guatemala, Honduras, Nicaragua, Paraguay and

[2] "The region's evolution in formulating national ICT policies and agendas". ECLAC Newsletter nº 7, March 2009.
[3] José Luis Machinea, Executive Secretary for UN-ECLAC, "The Information Society in Latin America and the Caribbean: Development of Technology and Technologies for Development", 2008.

Venezuela are still in the stage of elaborating a digital agenda for the first time, they engage in a low intensity of projects and have less than five years of experience in the matter.

Technical cooperation topics in Latin America research agendas not always follow the evolution of Information Society policy issues.

Policy topics	Traditional topics	New topics
Access and Infrastructure	Installation of public telephones Creation of telecommunications funds	Increase access to broadband Internet Public ICT access centres (telephone and Internet)
Capacity-building	ICT use (digital literacy)	Awareness of the potential of ICTs in different sectors Digital literacy and professional training Creation of new cognitive capacities according to the needs of the IS
e-Government	Presence of online information for governmental entities	Transactional services Citizens participation Interoperability of systems
e-Education	Connectivity in schools Distance education	ICTs in the learning process Development of electronic educational content Incorporation of ICTs in school administration
e-Business	Connectivity in businesses Web presence	Digitalization of internal and external processes Integration of productive processes via electronic media
e-Health	Tele-health	Health system management: electronic clinical history, information systems for managing patients, medication, etc.
Software and hardware industry	Hardware production Open-source software	Development of the software industry for local solutions Development of offshore technological businesses

Source: ECLAC, Digital Review 2007 of Latin America and the Caribbean: Progress and Challenges: Policies for Development with ICT. 2008.

Among the most important areas in digital agendas are access and infrastructure. The development of e-Government has given rise to new elements that strengthen the facilitating environment of the information society, such as legislation for digital transactions and validation, digital signatures, cyber-crime, and the confidentiality of data, among others. Despite the promise of e-Government, it is one of the most lagging or absent areas in the digital agendas of the region.

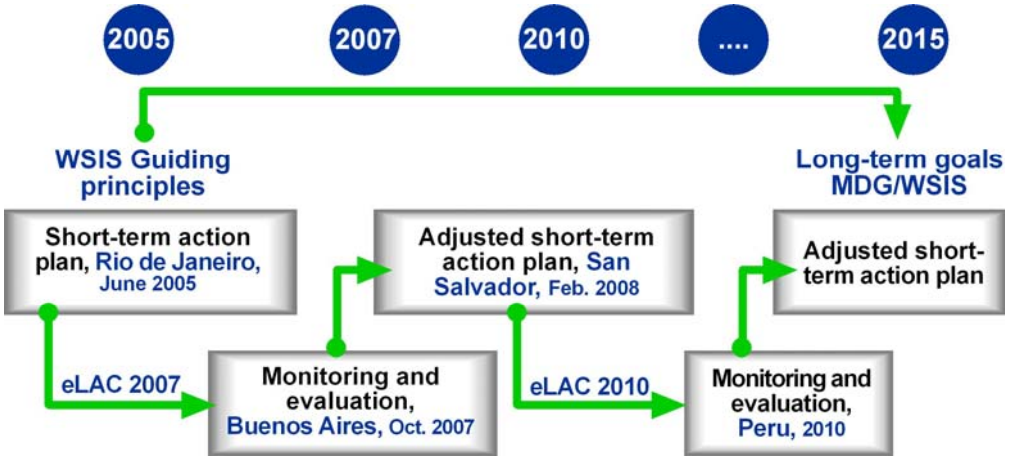
The development of capacities and contents, as well as e-Education and e-Business also are considered areas of high importance in national agendas or digital strategies; while the development of a computer and software industry seems to arise less frequently. Other areas such as e-Health, e-Democracy, disaster management and e- Justice have been given less importance.

2.2. eLAC 2010 ICT Priorities

According to ECLAC, Latin America and the Caribbean have followed a more industrial approach to the development of ICT, with regional experiences in creating national hardware and software industries, entering into the telecommunications operators market, telecom regulation, and the debate over intellectual property rights. However, the use of ICT in emerging areas such as digital education, e-government, ICT for health, natural disaster management and e-commerce reflect the current trend to pursue a more integral approach to social and economic development, using ICT for development.

The Regional Action Plan for the Information Society in Latin America and the Caribbean (eLAC2010) is being implemented by the Division of Production, Productivity and Management of ECLAC and it aims to move towards the incorporation of ICT for the benefit of all the inhabitants of Latin America and the Caribbean. eLAC 2010 counts with the support of the Political and Regulatory Dialogue of the @LIS project from the European Commission and by the Observatory for the Information Society in Latin America and the Caribbean (OSILAC) , in cooperation with the Institute for Connectivity in the Americas.

eLAC2010 seeks to unite efforts to formulate strategies that promote the use of ICT for development, in order to achieve growth with equity. This shows an important change in perspective, given that the plan strays from the tendency in Latin America and the Caribbean to pursue a more industrial approach to the development of ICT. Instead, it favours a more integral approach to social and human development, or development with ICT. This change of approach seeks to foster the use of ICT in emerging areas.



eLAC 2010 Vision

The eLAC Policy Priorities Delphi was carried out between April 2006 and September 2007. The natural starting was the existing 2005-2007 Regional Plan of Action for the Information Society in Latin America and the Caribbean (eLAC2007). The exercise aimed to identify public policy priorities and options regarding the use of information and communication technologies (ICT) for development in Latin America and the Caribbean. It was inspired by the European Union's policy priority foresight experiences and represents an innovative and more participatory approach to modernizing the way the United Nations assists its member countries

in developing public policy agendas. Overall, the project received 1,454 contributions from the public, private and academic sectors and the civil society.

The final results of the eLAC consultation for ICT policy priorities for 2010 are presented in Annex 1, including 83 goals to promote the use of ICT as they were reached by regional authorities during the II Ministerial Conference on the Information Society in Latin America and the Caribbean that took place in San Salvador on 6-8 February 2008, and a number of measures described in terms of capabilities in, access to, and use of ICT in six priorities areas. A summary of the ICT priorities by area is provided below:

1. Education and training
   - Broadband connection
   - Digital services and content for education
   - ICT applications (virtual reality tools, Web 2.0 applications)

2. Infrastructure and access
   - Wireless broadband ICT networks
   - Cable broadband ICT networks
   - Mobile technology for rural areas
   - Advanced ICT-based networks for research and education
   - Digital services
   - Broadband interconnection
   - Security
   - ICT convergence: VoIP and digital television
   - Electronic disaster management (international standards)

3. Health
   - Internet connection for health centres and hospitals
   - ICT-based health services
   - Management software for health centres
   - Telemedicine systems
   - Health networks
   - Standards and interoperability for health

4. Public management
   - e-government services
   - Interoperability and standards for e-government
   - electronic documents
   - electronic signature
   - electronic payment
   - electronic contract
   - Standardisation of geo-referenced information

5. Production sector
   - Hardware development
   - Software development
   - Content and services development
   - Telework and mobile work

6. Policy instruments and strategic tools.

   - Information Society policy coordination
   - Interlink ICT research and development centres
   - ICT financing
   - ICT statistics, indicators and monitoring
   - Gender and ICT

- E-commerce policy
- R&D in ICT resources allocation
- Disaster mitigation and relief operations
- Cybercrime
- Technological waste management
- Interactive and interoperable digital content

3 ICT IN EURO-LATIN AMERICA S&T COOPERATION

The Science and Technological Cooperation Agreements (S&T Agreements) between the EC and third countries provide the main framework for scientific and technological cooperation, in areas of mutual interest and benefit, including ICT. That is the case for Argentina, Brazil and Chile that together with Mexico are the only Latin America countries with such agreement on S&T. The experience of these countries with S&T Agreement is of major importance for a potential closer ICT cooperation between the EU and Latin America.

Uruguay has not yet signed a cooperation agreement in science and technology modelled on those with other countries in the region. In spite of the importance of scientific and technical cooperation and the interest of a possible agreement between the EC and Uruguay in these areas, Uruguay's participation in FP6 and FP7 so far is limited and still needs to maximise the possibilities of scientific cooperation[4].

Latin America Countries with EC International Agreements on S&T

	Argentina	Brazil	Chile	Mexico
Signature by Both Parties	20/09/1999	19/01/2004	23/09/2002	03/02/2004
Council or Commission Decision on conclusion	2/12/1999	06/06/2005	22/07/2003	13/06/2005
Official journal (OJ) Reference	L006/32	L 295/38	L199/20	L290/17
Date of OJ publication	11/01/2000	11/11/2005	07/08/2003	04/11/2005
Entry into force	28/05/2001	07/08/2007	10/01/2007	13/06/2005
Last renewal date	28/05/2006			
Next renewal date	28/05/2011	07/08/2012	10/01/2012	13/06/2010
date Applicable date / Duration	Initial period of 5 years, subsequent periods of 5 years			

Source: EC, International RTD Cooperation. RTD association and Cooperation Agreements, 29/01/2009.

The European Framework Programmes are a major instrument for implementation of S&T Agreements and national mechanisms and research support schemes are also being used in pursuit of the objectives of international scientific cooperation. In the context of the S&T Agreements, ICT are understood as a key issue to foster innovation, competitiveness and economic growth, and also have an important social dimension in improving social cohesion, increasing the quality of life and reducing poverty.

[4] European Commission, Uruguay Country Strategy Paper 2007-2013, (E/2007/613), 10.04.2007.

3.1 Argentina

Argentina signed the Agreement on scientific and technological cooperation with the European Union in September 1999[5], which came into force in 2001 and was renewed in 2005 for another 5 years. Since then, one of the Steering Committee functions is to identify among the potential sectors for RTD cooperation, those priority sectors or subsectors of mutual interest for cooperation within research and development activities in science and technology.

The joint projects approved within the first years of the implementation of the Agreement, cover mostly the areas of Quality of Life, IST and Energy in FP5 and Life Sciences, Genomics and Biotechnology for Health and Sustainable Development, Global Change and Ecosystems in FP6. Recently, Argentinean brokerage efforts have started to target Nanotechnologies and ICT, which have already shown good results with 6 ICT projects approved in FP7 so far (compared to a total of 4 projects in FP6). After the generalised mainstreaming of international cooperation throughout the FP7, it is expected that cooperation with Europe in ICT research increases. Also the Country Strategy Paper 2007-2013[6] emphasizes the relevance of ICT for the social and economic development as they impact on the whole economic fabric.

The third Steering Committee meeting held in Brussels in April 2008 set up a Roadmap[7] for S&T cooperation, which is a rolling agenda for the further cooperation between the EU and Argentina aiming at increasing Argentina's participation in FP7 (2007-2013), furthering the dialogue with the European Research Area as well as developing wider S&T&I cooperation between the two sides in bilateral and multilateral settings.

The Roadmap for cooperation in ICT focuses on:

- Software and services
- Mobile and wireless systems
- Networked services
- ICT for health
- Open source software
- Research infrastructures, including e-Infrastructure
- GRID technologies
- Support of international cooperation.

On May 11 2009, the Roadmap was updated during the IV S&T Steering Committee meeting EU-Argentina held at the MINCyT premises in Buenos Aires. The meeting was chaired by the Argentina's Minister of Science, Technology and Productive Innovation and the International Relations National Directorate. Ten key European Commission representatives participate, heading by the Research Director General.

[5] Official Journal of the European Communities, L 6/32, 11. 1. 2000. AGREEMENT for scientific and technological cooperation between the European Community and the Argentine Republic

[6] European Commission, Argentina Country Strategy Paper. 2007-2013, (E/2007/753), 23.04.2007

[7] Scientific and Technological Cooperation Between EC and Argentina Road Map 2008 April 2008 (Period: May 2008 to April 2009)

During the meeting, four R&D ICT areas were identified as priorities for Argentina:

- Components, systems, engineering: micro and nanoelectronics, Radio frequency identification RFID, Systems on-chip, Embedded systems: low cost sensors
- ICT for Independent Living and Inclusion
- Applications of ICT for improving the logistics of agricultural bulk exports
- Applications of ICT for greater social inclusion (including applications to education)

These subjects are based on the results of the Forum "2020: Prospectives and Strategies in Science, Technology and Innovation", organized by the MINCyT in 2008. This multisectorial and multistakeholder effort gathered more than 150 key actors to identify the technologies, application areas and business that should be primarily fostered in the ICT area in Argentina in the next years.[8]

In addition, in order to strengthen the EU-Argentina ICT cooperation, five European Technology Platforms (ETPs) were suggested due to their topics and current projects, which bring into line with Argentinean priorities and the work carried out in some Latin American countries:

- Networked European Software and Services Initiative (NESSI).
- Embedded Computing Systems (ARTEMIS).
- Networked and Electronic Media (NEM)
- European Technology Platform on Smart Systems Integration (EPoSS)
- Mobile and Wireless Communications – eMobility

This collaboration, together with the support of the Liaison EU-Argentina[9] office and the local PRO-IDEAL team will give some opportunities to overcome one of the main challenges for ICT international cooperation, meaning to promote and enhance effective cooperation among private enterprises in R&D ICT stakeholders.

[8] The results of this Forum will be published as "ICT Prospective White Paper: Project 2020" in June 2009 by the MINCyT.
[9] More information about the Liaison Office at http://www.abest.mincyt.gov.ar/

3.2 Brazil

The S&T Agreement EC-Brazil was signed in 2004 and entered into force in 2007. Cooperation under the this Agreement initially cover all the areas of mutual interest in which both Parties are implementing or supporting RTD activities, with emphasis on the following topics[10]:

- Biotechnology
- **Information and communication technologies**
- Bioinformatics
- Space
- Micro- and nanotechnologies
- Materials research
- Clean technologies
- Management and sustainable use of environmental resources
- Biosafety
- Health and medicine
- Aeronautics
- Metrology, standardisation and conformity assessment
- Human sciences

The first meeting of the Brazilian Committee for Scientific Cooperation Europe Brazil that took place in Brasilia on September 2007 identified the following **ICT priority areas**:

- Maintenance and expansion of Red CLARA
- Participation on GEANT
- Human resources for informatics
- Semiconductors
- Multilinguism
- e-inclusion
- Telemedicine
- Distance learning
- Wireless communication
- Internet
- Optical communications.

More recently, during the Second Brazil-European Union Summit held in Rio de Janeiro on 22 December 2008, Brazil and the EU are committed to the building of the people-centred, non-discriminatory and development-oriented Information Society envisaged by the World Summit on the Information Society (WSIS) outcomes[11]. Also the EU and Brazil share the understanding that ICT have a fundamental role in promoting digital inclusion and improving social cohesion, increasing the quality of life and reducing poverty. In this context, Brazil and the EU agreed to expand the bilateral dialogue and cooperation on ICT matters, encompassing policy, regulatory and research issues and to develop cooperation in relevant scientific and technological ICT areas of common interest in the context of

[10] COM (2003) 381 final, Proposal for a Council Decision on the signing of the Agreement for scientific and technological co-operation between the European Community and Federative Republic of Brazil, 27.06.2003.
[11] See the minutes of the meeting at
http://www.mre.gov.br/portugues/imprensa/nota_detalhe3.asp?ID_RELEASE=6156
http://www.mre.gov.br/portugues/imprensa/nota_detalhe3.asp?ID_RELEASE=6158

the implementation of the Brazil-EU S&T Agreement, in particular by enhancing collaboration within FP7.

ICT is among the priority areas for cooperation on science, technology and innovation and in that context Brazil and the EU agree to promote strategies for increasing participation by Brazilian researchers, universities, institutions and industries in FP7 RTD projects.

3.3 Chile

In 2002 the EC and Chile signed a Science and Technology Cooperation Agreement that entered into force in 2007. The S&T Agreement aims at intensify research cooperation in areas of mutual interest and ultimately to facilitate Chile's integration into the European Research Area[12]. Cooperation under this Agreement may cover all the activities of research, technological development and demonstration (RTD activities). Although research priority areas are not identified, the results of the firs years of the S&T Agreement show that ICT played a secondary role as the Chilean participation in European projects (during FP6) was focus on genomics, biodiversity, climate change, marine ecosystems, food, agriculture and health. In the field of ICT, Chile was involved in projects related to grid technologies and e-infrastructure[13].

The third meeting of the Joint EC-Chile Committee that took place in October 2007 in Santiago discussed about respective research, education and innovation policies and explore opportunities for further development of S&T cooperation arising out of FP7 and other mechanisms. As a result, the roadmap for scientific and technological cooperation between the EC and Chile[14] identified the following thematic areas for cooperation in FP7:

- Food, Agriculture, Fisheries and Biotechnology
- Environment (including climate change)
- Nanoscience and Nanomaterials, Material science, Industrial Technologies
- Energy
- Health
- Social Science and Humanities
- Mobility/Exchange of Researchers
- **Information and Communication Technologies (ICT applied to education, e-government and e-infrastructures)**

Therefore, the cooperation with Chile in ICT is expected to continue, notably as part of the activities under the ICT programme in FP7 and the @LIS programme. As mentioned above, development of the information society is an important horizontal objective for the EU and ICT can play a major role in fostering social cohesion, by improving public administration, education and health services, as well as strengthening democratic governance and consolidating democratic institutions[15].

[12] Official Journal of the European Communities, L 199/20, 7.8. 2003. AGREEMENT for scientific and technological cooperation between the European Community and the Republic of Chile

[13] CONICYT, Departamento de Relaciones internacionales, Programa Unión Europea. Estado del Arte sobre la Aplicación del Acuerdo de Cooperación Científica y Tecnológica Chile-Unión europea, 10.07.2007.

[14] Scientific and Technological Cooperation Between EC and Chile, Road Map 2008 December 2007

[15] European Commission, Chile Country Strategy Paper 2007-2013, (E/2007/615), 11.04.2007

Further discussions about ICT priority areas for Chile have continued. A recent meeting (April 2009) between the EC and the EC Delegation in Chile, with the participation of the Chilean ICT NCP suggested the following ICT priorities:

- Internet,
- Digital Libraries,
- eLearning,
- Information Management,
- Health Systems,
- e-Government

4 NATIONAL POLICIES RELATED TO R&D IN ICT

ICT is a crosscutting issue in constant evolution, and some times it has been difficult to categorize which portfolio it falls under and how it should be coordinated with the other sectors, agencies and ministries. In some countries, like Argentina and Brazil, ICT R&D policies are under the Ministries of Science and Technology. In other countries the leadership has fallen under specific Commissions or Agencies created specifically for leading a digital or e-government strategy. That the case of Chile where CONICYT, the National Commission for Scientific and Technological Research of the Ministry of Education is the institution responsible for implementing the R&D policy; and Uruguay where the national R&D policies are led by ANII, the National Agency for Research and Innovation.

The research conducted across the PRO-IDEAL countries emphasizes the relevance of ICT as a R&D policy priority. Our findings also identify common ICT R&D priorities, which consolidates the basis for future cooperation in ICT research between Europe and Latin America target countries. Following we provide an overview of the most important and recent national policies, strategies and programmes related to R&D in the field of ICT, identifying the priorities by country in view to a future cooperation in ICT research projects.

4.1 Argentina

In the last years, Argentina has officially support and launched certain key initiatives that show a deepen commitment to develop a long-term vision and strategy in R&D ICT areas. At the end of 2007, the National Secretary of Science and Technology (SECyT) was upgraded to a ministerial rank through the Act 26.338. The new institution, the Ministerio de Ciencia, Tecnología e Innovación Productiva – MINCyT is currently in charge of establishing policies and coordinates oriented actions to strengthen the country capacity in science, technology and innovation issues. MINCyT is the PRO-IDEAL partner in Argentina.

Argentina has just approved its first Digital Agenda at the national level on 8 May 2009 by Act 512/09. Although the country has counted with ICT projects and national plans since the nineties and many of those initiatives have been successful, the implementation of the national Digital Agenda consolidates a vision and a strategy that are indispensable to seize the “digital opportunity” and frame cooperation actions in a long-term[16].

MINCyT will officially present the R&D ICT priorities for Argentina in the “White Paper ICT Prospective. Project 2020” that will be published in June 2009. This report states that one of the main challenges of Argentina, in terms of science and technology, is to transform the ICT production from a linear paradigm to a non-linear one based on development and innovation. The main ICT priorities are components, systems, engineering, including micro and nanoelectronics, RFID, Systems on-chip and embedded systems; ICT for independent living and inclusion; ICT applications for logistics and social inclusion, including education. A summary of the main programmes and ICT related priorities are presented in Table 1.

[16] Find the presentation video at http://www.sggp.gob.ar/contenidos/uci/actividades_realizadas/paginas/2009/2009-Agenda_digital.html

International scientific and technological cooperation, coordinated by the MINCyT' International Relations National Directorate represents a strategic tool for the policy design. It aims to achieve joint research activities and to transfer the results to the productive sector, including cooperation with science and technology excellence networks in America, the European Union and Asia.

Other specific MINCyT's action for EU-Argentina cooperation was the creation the Argentine Bureau for Enhancing Cooperation with the European Community in Science, Technology and Innovation (ABEST)[17] in October 2005, through its International Relations National Directorate and with partial funding from FP6. The aim of the liaison office is to develop a platform to expand cooperative activities in S&T with the EU between local researchers, organizations and SMEs, coordinating this activity with other Latin-American countries which also have agreements with the EU (Brazil, Mexico and Chile).

The main ABEST's activities carried out are:

- Information dissemination about cooperation opportunities with the EU and exchange of human resources.
- Training of institutional representatives of R&D entities in order to strengthen ABEST- NET.
- Open calls for travelling financing for Argentinean researchers interested in setting up consortia with European partners.

Reinforcing its commitment to promote the FP7 cooperation opportunities and contribute to the dialogue between Latin America and the European on ICT priorities, Argentina has nominated seven National Contact Points in most important areas, being the MINCyT the ICT NCP. NCPs are in charge of spreading updated information and assisting researchers to submit proposals to FP7 upcoming calls.

Moreover, Argentina counts with different laws that organize the system of science, technology and innovation. The first one is the Law 25,467 of Science, Technology and Innovation (September 2001). In 2004, Argentina was the first country in the MERCOSUR to adopt a law related to software production at national level with the "Ley de Promoción de la Industria del Software (law 25.922), which established the creation of the FONSOFT (Argentina Trust Fund for the Promotion of Software Industry) and a special system for software promotion under the MINCyT umbrella. Another law related to the endorsement of software as an industry (law 25.856). Other laws that were ratified later on are e-government, digital signature, and digital invoice, among others.

Within this framework, the National Agency for Scientific and Technological Promotion (AGENCIA)[18], depending from the MINCyT, is dedicated to promote activities related to Science, Technology, and Innovative Production. The Agency promotes the financing for research and development projects oriented to improve social, economic and cultural conditions in Argentina. Through its four Funds – Funds for Scientific and Technological Research (FONCyT, which administrates funds for S&T Research), Argentine Technological Fund (FONTAR), which manages financial resources for R&D, technological developments, technological modernization, technological services for institutions and SMEs, technical assistance, and enterprises' incubators, technological parks and technological poles, among others, the FONSOFT that was described previously, and the Sectorial Fund

[17] More information about the Liaison Office at http://www.abest.mincyt.gov.ar/
[18] Find more information about the AGENCIA at http://www.agencia.gov.ar

(FONSEC), which includes a specific sectoral fund for ICT, recently launched in 2009.

Research support depends on the National Council on Scientific and Technical Research (CONICET)[19], which is the main organization oriented to S&T Research in Argentina. Among other activities, CONICET encourages and funds S&T research, it promotes S&T cooperation and exchanges within the country and with foreign research centres, and most important, it manages the careers of scientific researcher and support staff for R&D.

There are also a number of Universities with a key role in the implementation of ICT R&D, such as the University of Buenos Aires, La Plata, Córdoba, the National Technological University, the Southern National University, etc. Their main research programmes and ICT topics can be seen in Table 2 below.

[19] Find more information about CONICET at http://www.conicet.gov.ar/

Table 1. Argentina national policies and strategies related to R&D in the field of ICT:

Institution responsible	Programme Name	Programme Acronym	Programme description	R&D priorities	ICT priorities (Sub-themes)
Ministerio de Ciencia, Tecnología e Innovación Productiva (MINCyT)	ICT Prospective White Paper - Project 2020 (to be published in June 2009)	Project 2020	This is an ICT prospective analysis work that the MINCYT prepared in Argentina during 2008. More than 150 actors from the private and public sectors, universities and ICT community worked together in order to identify the technologies, the application and business ICT areas that should have to be fostered in Argentina in the next years.	Application areas: Industry, Agriculture, Government, Services, Contents, and Security. Cross-sectional areas: Education and Human Capital; Innovation and R+D	Technological areas: Software Engineering; Signals; Technologies of the Images; Embedded Software; Micro and Nanoelectronics. ICT Priorities: - Components, systems, engineering: micro and nanoelectronics, RFID, Systems on-chip, Embedded systems: low cost sensors - ICT for Independent Living and Inclusion - Applications of ICT for improving the logistics of agricultural bulk exports - Applications of ICT for greater social inclusion (including applications to education)
Oficina Nacional de Tecnologías de Información (ONTI), Subsecretaría de tecnologías de Gestión, Secretaría de Gabinete y Gestión Pública	Digital Agenda Argentina www.agendadigital.ar	Digital Agenda	The Digital Agenda, elaborated and approved for the first time in Argentina, is a public policy accorded by different social and political actors to establish a long-term strategy to foster the Information Society oriented to an integral human, political, economic and social	Support projects that foster competitiveness and production through efficient ICT services, improvement on infrastructure, telecommunications, technological	ICT in general

Institution responsible	Programme Name	Programme Acronym	Programme description	R&D priorities	ICT priorities (Sub-themes)
			development for all the Argentineans.	innovation, support to SME, etc.	
Secretaría de Comunicaciones, Ministerio de Planificación Federal, Inversión Pública y Servicios	National Program for the Information Society http://www.psi.gov.ar	PSI	PSI was launched in 1998 under the denomination "argentin@internet.todos". In 2000 and 2001, it was modified by decrees 252/00 and 243/01 and named under the current name. Its main activities are linked to the design and implementation of public policies related to the Internet universalisation and other digital data networks, the e-commerce development, the formation of specialized human resources, and the promotion of investment and development actions to foster telecommunications, computer science, electronics, software, and other technologies.		- Community Technological Centers (CTC Project): access, e-learning, e-inclusion - Technological Support to the Disable – AteDis Project: access, telemedicine, rights. - Civitas 2.0 Project: local e-gov, digital gap, infrastructure.
Oficina Nacional de Tecnologías de Información (ONTI), Subsecretaría de tecnologías de Gestión, Secretaría de Gabinete y Gestión Pública	eGovernment National Plan - Decree 378/2005	eGovernment National Plan	This plan structures all activities related to e-government of each pubic organism and the National State as a whole. Promote the intensive use ICT in all public dependencies to improve the relation between the government and citizens		e-Government
Subsecretaría de	Digital Signature -	Digital Signature	Establish the guidelines to		Digital signature

Institution responsible	Programme Name	Programme Acronym	Programme description	R&D priorities	ICT priorities (Sub-themes)
Tecnologías de Gestión, Secretaría de Gabinete y Gestión Pública	Law 25.506		obtain a license, technological standards and other issues related to license grants, accreditation and regulation.		
Ministerio de Ciencia, Tecnología e Innovación Productiva (MINCyT)	Software Industry Promotion Law – Law 25.922	Software Industry	In 2004, Argentina was the first country in the MERCOSUR to adopt a law related to software production and promotion at national level.		Software applications
Ministerio de Economía y Finanzas Públicas	Programa Mi PC http://www.programamipc.gov.ar/	Mi PC	Joint initiative between private and public sectors, which had its re-launched on March 4, 2009. Its strategic objective is to reduce to the digital divide		- e-inclusion - Equipment, infrastructure, connectivity - ICT capacity building

Table 2. Argentina - Universities leading ICT research

University Name		ICT R&D Areas	Project Name/Programme	Description
Universidad de Buenos Aires	ENGINEERING SCHOOL	- Complex systems - Internet protocols, etc.	Complex Networks and data communication Group	http://cnet.fi.uba.ar/
		- Signal processing	Signal processing and Communications Group	http://www.fi.uba.ar/investigacion/index.php?n=1&m=196&idl=793
		- Image processing - Independent Intelligent agents, etc	Distributed Heterogenous Systems Group	http://www.fi.uba.ar/investigacion/index.php?n=1&m=196&idl=841
		- Electroaerodynamics - Two phase flow control, etc	Hidrodynamic Laboratory	http://laboratorios.fi.uba.ar/lfd/english%20(c)_archivos/frame.htm
		- Automatización, Simulation, etc.	Robotic Laboratory	http://laboratorios.fi.uba.ar/laborob/robotica.htm
		- Nonlinear Dynamics - System Control in Engineering	Mathematical in Nonlinear Dynamics Group	http://www.fi.uba.ar/investigacion/index.php?n=1&m=196&idl=924
		- Signal Processing Problems, - Wavelets theories and associated frames, etc.	Mathematical Aspects of Signal Processing Group	http://www.fi.uba.ar/investigacion/index.php?n=1&m=196&idl=829
		- Partial Derived Differentials - Biomedical Signals, Modelling, etc.	Modelling and Biomedical Signal processing Group	http://www.fi.uba.ar/investigacion/index.php?n=1&m=196&idl=833
		- Hydrodynamics, Sediments, and Pollutants	Mathematical Modeling Laboratory - LaMM	http://laboratorios.fi.uba.ar/lmm/
	EXACT AND NATURAL	- Knowdledge & innovation principles, and Patent granting	INCUBACEN - Technological Companies Incubators	http://www.incubacen.fcen.uba.ar
		- Computing applications	High Computer performance Center	http://pme84.dc.uba.ar/
		- Selection of Technical Topics - Model Based Testing, etc.	Tools and Foundations for Software Engineering Lab	http://www.dependex.dc.uba.ar/
		- Image processing - Computing Vision	Computing Image and Vision Processing Group	http://www-2.dc.uba.ar/grupinv/imagenes/
		- Computational Logic - Natural Language Processing, etc.	Logic and Computability Research Group - GLyC	http://www.glyc.dc.uba.ar/
		- Exact Methods for programming problems; Graphs classes study, etc	Operations research, Combinatory Optimization and Graphs Group	http://www-2.dc.uba.ar/grupinv/invop/

University Name		ICT R&D Areas	Project Name/Programme	Description
		- Electrochemical Treatment of Tumours; High Performance Computing / Grid Computing, etc.	Complex Systems Laboratory	http://www.lsc.dc.uba.ar/
		- Multispectral lossless image compression; CBIR; Pattern recognition, etc.	Compression and Neuronal Networks Research Group	http://www.dc.uba.ar/inv/grupos/crn/
		- Formal language design and analysis; Software verification & validation, etc	Relational Formal Methods Research Group	http://www.dc.uba.ar/inv/grupos/rfm/
		- Graph Theory - Optimization	Graphs and Optimization Research Group	http://www.dc.uba.ar/inv/grupos/grafos/
		- Robotic Learning - Robot Design and development	ICAR – Computing Intelligence applied to Robotics	http://www-2.dc.uba.ar/grupinv/robotica/
		- Problems with words (strings) - Algorithms on identifying patterns inside strings	KAPOW - Knowledgeable Algorithms for Problems On Words	http://kapow.dc.uba.ar/
	Others	- Social inclusión - Gender & ICT	Infópolis – Information Society Research Group	http://www.iigg.fsoc.uba.ar/secciones/programas/programa_infopolis.htm
	Others	- Materials for Electromagnetic Aplications - New Magnetic Materials for Tools	INTECIN – Technology and Engineering Science Institute "Hilario Fernàndez Long"	http://www.uba.ar/secyt/institutos/insuc-intecin.php
Universidad de La Plata		- Software Engineering; MDD; Collaborative atmospheres and groupware; Web Engineering; etc	- LIFIA - Computing Research and Formation Laboratory	http://www.linti.unlp.edu.ar/
			- Informatic Research Institute	http://www.lidi.info.unlp.edu.ar
		- Open Source; Data Network, etc.	LINTI – ICT Research Laboratory	http://www.linti.unlp.edu.ar/linti
UNICEN		- Intellugent Agents - Software Architecture, etc.	ISISTAN Tandil Systems Institute	www.exa.unicen.edu.ar/investigacion/isistan.htm
Universidad de Córdoba	ENGIN	- Computer Architecture Simulators - Digital Video Processing, etc	Advanced Computing Architecture Group	http://www.uco.es/investiga/grupos/gaac/
	ENGIN	- Computing Science - Artificial Intelligence, etc	Software Engineering, Knowledge and Databases	http://www.uco.es/investiga/grupos/iscbd/

University Name		ICT R&D Areas	Project Name/Programme	Description
		- Software Design for tutorials, etc.	Virtual Laboratories on Science and Technology	http://rabfis15.uco.es/lvct/
	FAMAF	- Automatic learning - Data Mining; Robotics; etc	Natural Lenguage Processing Group	http://www.cs.famaf.unc.edu.ar/~pln/
		- Security; Verification, etc	Depending Systems Group	http://www.cs.famaf.unc.edu.ar/gsd/
Universidad Tecnológica Nacional	SANTA FE		G.E.S.T.I.C. Project (ICT Secuty Management)	http://www.frsf.utn.edu.ar/area/departamento.php?id=40&mostrar=436
		- Ontological Engineering - Analysing supply chain - Distributed Simulation, etc.	CIDISI – Engineering Research and Development in Information System Center	http://www.frsf.utn.edu.ar/area/departamento.php?id=22&mostrar=0
		- Digital Images Intelligent Processing; Robotics; etc.	Computing Sciences and Engineering Institute	http://www.uns.edu.ar/departamentos/investigacion/investigacion.asp?dependen=14
Universidad Nacional del Sur		- Communications; Digital Systems; Dynamics System; Control; etc.	Electric Enginering Research Institute "Alfredo Desages"	http://www.iiie.uns.edu.ar/
Universidad Nacional de Luján		- Data collection - Information system	Project: information systems for the analysis of the social transformations in Lujan	http://www.ciaclu.com.are
Universidad Nacional de Entre Ríos (UNER)	BIOENGINEERING SCHOOL	- Stimulation and Configuration - Nonlinear dynamics	Bioelectricity Laboratory	http://www.bioingenieria.edu.ar/grupos/labioelec/index.html
		- Human Joint Models - Arterial Blood Flow & Lung Models	Computing Biomechanics Group - GBC	http://www.bioingenieria.edu.ar/grupos/biomecompu/index.html
		- Oseointegración - Regeneración ósea guiada, etc.	Bioprosthesis Laboratory	http://www.bioimplantes.com.ar/
		- Intelligent Image Processing	Cybernetics Laboratory	http://www.bioingenieria.edu.ar/grupos/cibernetica/index.htm
		- Medical Technology management - Security and biosecurity, etc.	Clinical Engineering Research Group	http://www.bioingenieria.edu.ar/grupos/geic/index.htm
			Applied Microscopy to Molecular and Cellular Studies Laboratory	http://www.bioingenieria.edu.ar/grupos/microscopia/MicroInicio.html
			Signal and Nonlinear Dynamics	http://www.bioingenieria.edu.ar/grupos/ldnlys/index.htm

University Name		ICT R&D Areas	Project Name/Programme	Description
			Laboratory	
		- Medical Informatics; Telemedicine - Continuing Medical eLearning	CETIFAC Group: Medical Teleinformatic Center	http://www.fac.org.ar/cetifac
Universidad Nacional del Litoral	ENGINEE	- Machine Learning - Signal Processing - Applications	Laboratory for Signals and Computational Intelligence	http://fich.unl.edu.ar/sinc/
	ENGINEE	- Languages for Enterprise Modeling - Product Modeling; etc.	INTEC – Technological Development for Chemical Industry Institute	http://www.intec.ceride.gov.ar/
	F	Software Development	Virtual Enterprises Incubator	http://www.sceu.frba.utn.edu.ar/UVT/info_UVT.php?pag=iev_in
Universidad Nacional de Rosario	ENGIN		Rosario Physics Institute - IFIR	http://www.fceia.unr.edu.ar/labinfo/info_academica/institutos/fisica_rosario.html
	ENGIN	- Software quality and development - Computer and Information Security	R + D Group in Software Engineering	http://www.fceia.unr.edu.ar/gidis/
Universidad Nacional de San Juan	ENg	- Robótics and Manufacture System - Artificial Intelligent in Control, etc.	INAUT – Autmatics Institute	http://www.inaut.unsj.edu.ar/home.asp
Universidad Nacional de San Luis	FICES	- Robotics Control Theory - Robótica; Modelling; etc.	Mecanotronics Laboratory	http://www2.fices.unsl.edu.ar/~labme/
	FICES	- Digital Electronics - Applied Control	Automatic Control Laboratory	http://www2.fices.unsl.edu.ar/~lcafices/
Universidad Nacional de La Pampa	ENG		GIDIS – Research and Development Software Engineering Group	www.ing.unlpam.edu.ar/cupiweb04/cursos.html

4.2 Brazil

ICT are a priority at the National Projects and Studies Financing Agency (FINEP), at state level agencies (such as the State of São Paulo Research Funding Agency – FAPESP) and have been targeted as a priority in industrial and technological policies over the last 10 years.

In Brazil, most of the ICT R&D policies and strategies are formulated by the Ministry of Science and Technology that is the institution responsible for sectoral funds such as IT and Audiovisual. Other ICT policy-makers are the Ministry of Communications that set up the Fund for Telecommunications Development, and the National education and Research Network – RNP, the Brazilian infrastructure of advanced network for collaboration and communication in the fields of teaching and research.

The most important programmes related to R&D in the field of ICT are presented in the Table 3 below. These programmes include the following ICT priorities:

- Open Source Software (OSS)
- Grid computing
- Digital cinema
- Digital TV
- Digital content distribution platforms
- Software development
- ICT applications and testbeds
- Videogame industry
- Health and medical applications
- Environmental and climate change

Also a number of universities are leading ICT research through various programmes and projects (see Table 4). That the case of the University of São Paulo, University of Campinas, Universidade Federal do Rio de Janeiro, Universidade Federal de Pernambuco and Catholic University of Rio de Janeiro. Current research in ICT field is focused on:

- IPTV
- Advanced integrated electronic systems
- Software,
- Applications for health
- Computer Science
- Start-up incubator
- Digital TV
- Distance education
- Mobile telecommunications
- Environmental and climate change

In addition, in Brazil there is a large network of technological incubators associated to the National Association of Technological Parks (ANPROTEC), with hundreds of entities actively engaged in the promotion of ICT innovations. Software and ICT have been defined as national priorities in numerous funding calls in regional and local funding schemes that aim at these incubators and small companies.

Digital content production has been closely associated to technological innovation (for instance, content and services for digital TV, mobile transactions and contents as well as large repositories of digital assets and libraries, as seen for instance in the participation of Brazil in the World Library project. The RNP currently supports a

working group on museums and digital libraries. The Sao Paulo Public Radio and Television Broadcast (Fundação Padre Anchieta) is leading inroads into new media and is implementing a large scale digitalization program, while federal laws and sectoral funds perform a key role in subsidizing and supporting innovation in cinema, TV, distance education and online publishing via specific programs funded by the ministries of Culture, Education, Development and Industry. Moreover, the same priorities show up in State financing agencies, such as the National Social and Economic Development Bank (BNDES), which has during the last 5 years acted more prominently in the areas of innovation, with a special emphasis on audiovisual production, informatics and other ICT-related innovations and applications.

Table 3. Brazil national policies and strategies related to R&D in the field of ICT:

Institution responsible	Programme Name	Programme Acronym	Programme description	Funding Scheme	R&D priorities	ICT priorities (Sub-themes)
Ministry of Science and Technology	Fundo Setorial para Tecnologia da Informação	CT-INFO	Promoting private investments in information technology.	Public subsidies up to 0,5% of companies net revenues	Informatics and automation	Open Source Software (OSS), grid computing
Ministry of Science and Technology	Fundo Setorial para o Audiovisual	CT-FSA	Cinema and audiovisual Technologies and Products	Public funds collected from the movie and TV industries	Property rights, new products, new formats	Digital cinema and TV
Ministry of Communications	Fundo para o Desenvolvimento das Telecomunicações	FUNTTEL	Promoting technological innovation, human resources and investments in SMEs	Public funds collected from 0,5% of telecom companies´ net revenues and 1% of telecom participatory events	Digital TV	Digital TV, digital content distribution platforms
Ministry of Science and Technology	Programa de Subvenção Econômica	Subvenção Econômica	Promoting innovation in Brazilian companies	Public funds	Software and other ICT	Software and other ICT
Ministry of Science and Technology	National Research Council	CNPq	Various	Sectoral funds	Direct transferences to university and excellence research labs	Software development
National Education and Research Network – RNP	Inter-Ministries Program MEC/MCT	Inter-Ministries Program MEC/MCT	Investments and support for advanced internet backbone	Public funds from ministries of Education and Science and Technology	Advanced academic research backbone	Various applications and testbeds

Table 4. Brazil - Universities leading ICT research

University Name	ICT R&D Areas	Project Name/Programme	Description
University of São Paulo	IPTV	Electronic Computing Center (CCE)	Development of academic IPTV
University of São Paulo	Advanced integrated electronic systems	Laboratory for Integrated Systems (LSI)	Digital TV research center, health systems, 3D rendering
University of Campinas	Software, health, other applications	Various programs and projects	Distance education, health care, bio-engineering, open source software
Universidade Federal do Rio de Janeiro	Computer Science	Various programs and projects	Distance education, open source software, Telecom
Universidade Federal de Pernambuco	Start-up incubator	CESAR	Various areas and start-ups
Catholic University of Rio de Janeiro	Digital TV, distance education	Various programs and projects	Digital TV, distance education and other areas

4.3 Chile

The Government of Chile, following the recommendations of the Programme for Development and Technological Innovation (PDIT) in 2001, placed ICT as one of the priority areas needed to strengthen the competitiveness of the country. Currently, ICT policy in Chile is being adopted under the National Innovation Strategy for Competitiveness. In this framework, CONICYT, the National Commission for Scientific and Technological Research of the Ministry of Education is the institution responsible of implementing programmes to promote and strengthen scientific and technological research, the training of human resources, the development of new areas of knowledge and productive innovation.

CONICYT has two main research funds: FONDEF and FONDECYT. The Fund for Promoting Scientific and Technological Development (FONDEF) was launched in 1991 in order to link the scientific and technological sector with the business world through the development of applied research, pre-competitive development and technology transfer projects. FONDECYT, the National Fund for Scientific and Technological Development was created in 1981 and its mission is to promote and develop research across all disciplines by financing high level research projects through different programmes of competitive public tenders. From its very beginning, FONDECYT has contributed significantly to basic science and technological research.

In the last few years, FONDEF has launched a number of programmes to boost priority areas such as health, aquaculture and genomics, among others. FONDEF has been also very active in funding projects in the ICT field, 133 projects since 1991 until 2005, submitted to its R&D bidding, including the following topics[20]:

- Magnetic resonance imaging (MRI)
- Semantics
- ICT for traceability and monitoring cattle
- ICT for language learning
- Information systems management
- Mathematical modelling for biological networks control
- Robotics
- Embedded systems
- Biomechanical modelling and simulation for e-Health
- Medical diagnosis software system
- Security systems
- Interactive georeferenced systems
- e-Learning/Distance education
- etc.

The educational sector is one of the critical areas with the highest priority and potential to the development of ICT in Chile. In 2002 FONDEF launched the Program of Effective Information and Communication Technologies for Education (TIC EDU) with the aim of helping to improve education and develop ICT applications for the education industry in the country. Today, the program focuses its efforts on improving the learning processes through solutions that include the use of ICT, encouraging applied research, contributing to the development of technical and scientific capacities and favouring the transfer of results to the

[20] See CONICY project repository at http://ri.conicyt.cl/575/channel.html

educational sector[21]. Main R&D programmes related to ICT are presented in the Table 5.

Apart from the CONICYT, seven Universities are recognised as being leading ICT research in Chile: the University of Chile, the Federico Santa María Technical University, the University of Concepción, the Pontifical Catholic University of Valparaiso, the Southern University of Chile, University of La Frontera and University of Talca. Current research topics focus on the following priority areas: ICT for energy efficiency, e-Work, health, biomedicine, microelectronics, nanotechnologies, photonics and biotechnology (See Table 6 below).

Other initiatives to encourage the use of ICT in Chile focus on education. First efforts to introduce ICT on education took place in 1992 when the Ministry of Education creates the Enlaces programme, aimed at the creation of a network connecting state-financed elementary and secondary schools and at the incorporation of ICT on education. In 2005 the Enlaces program becomes the Education and Technology Centre of Chile, which seeks to coordinate public policies linked to educational computing.

In addition, the Digital Agenda (2004-2006) in the area of education stresses the integration of ICT in the educational system's curricular practices and on generating world-quality contents that may give rise to an export industry. Later on, the Education Digital Route, launched by the government in 2007, seeks to place Chile at the level of developed nations with respect to access to digital technology from schools; its goal is to increase the student to computer ratio to one computer per 10 students by 2010 (national average has improved from 70 to 26 students per computer between 2000 and 2007).

Other policies promoting ICT in the private sector are supported by CORFO, the Chilean Economic Development Agency. CORFO lends support to Chilean firms to help them improve their competitiveness in international markets. The Agency also promotes the implementation of ICT in those firms to access global markets. Its scope of action ranges from individual companies and networked firms to full production chains, including clusters or geographic groups of companies working in a particular industry.

[21] CONICYT, TICs para Educación en Chile. Resultados del Programa TIC EDU de FONDEF, Nov. 2008.

Table 5. Chile national policies and strategies related to R&D in the field of ICT:

Institution responsible	Programme Name	Programme Acronym	Programme description	Funding Scheme	R&D priorities	ICT priorities (Sub-themes)
CONICYT	FONDEF - Fund for the Promotion of Scientific and Technological Development	FONDEF	The FONDEF Programme was created in 1991 to provide a means of enhancing R&D related to national needs and to increase the participation of companies in research. It co-finances universities and non-profit research and development institutions with the private sector.	There are annual public bidding for projects oriented towards the creation of relevant technological businesses and with a high socio-economical impact.	Agricultural, Fisheries, Forestry, Aquaculture, Mining, Water Energy, Infrastructure, Manufacturing, Health, Education, ICT	ICT in general
CONICYT	Program of Effective Information and Communication Technologies for Education	TIC EDU	The TIC EDU Programme was created in 2002 to help improving education by developing ICT applications for education industry in the country. Focus on improving the learning processes through solutions that include the use of ICT.	FONDEF - Fund for the Promotion of Scientific and Technological Development	Education applied research	e-Education
CONICYT	System for Information in Science, Technology and Technological Innovation	SICTI	SICTI is a platform for managing project information, institutions and curricula. It was launched by FONDEF Programme in 2002	Programme of Technological Development and Innovation (PDIT), of the Ministry of Economics, financed by the Inter-American Development Bank and	Standardisation of information, e-government	Standardisation of information, e-government

Institution responsible	Programme Name	Programme Acronym	Programme description	Funding Scheme	R&D priorities	ICT priorities (Sub-themes)
				contributions from private business.		
CONICYT	FONDECYT - National Fund for Scientific and Technological Development	FONDECYT	The FONDECYT Programme was created in 1981. Its mission is to promote and develop research across all disciplines by financing high level research projects through different programmes of competitive public tenders.	FONDECYT	Basic science and technological research	Not specific ICT priorities
CONICYT	FONDAP - Fund for Advanced Research in Priority Areas	FONDAP	The FONDAP programme aims to promote the development of Centres of Excellence to encourage the work of researchers in teams on subject areas where the national scientific community has reached a high level of development	FONDAP	Materials science, Biomedicine, Mathematical modelling, Ecology and biodiversity, Astrophysics, Oceanography, Molecular research	Not specific ICT priorities

Table 6. Chile - Universities leading ICT research

University Name	ICT R&D Areas	Project Name/Programme	Description
Universidad Tecnica Federico Santa Maria	ICT for energy efficiency	Various programmes and projects	Multilevel converter interfaces for photovoltaic and wind power conversion systems
Universidad de Chile	e-Work, Biomedicine	Various programmes and projects	Evaluating mobile shared workspaces Highly functionalized natural pentacyclic triterpenoids: structural modification and medicinal chemistry
Universidad de Concepción	Nanoelectronics technology	Various programmes and projects	Dielectric, ferroelectric and piezoelectric characterization of perovskite-tungsten bronze structured nano ceramic composites by mechanical activation process for electromechanical applications
Universidad de La Frontera	Photonics	Various programmes and projects	Physical implementations of multi-photon sources and distant entanglement protocols for quantum information processing
Pontificia Universidad Católica de Valparaiso	Biotechnology	Various programmes and projects	Effect of diffusion restrictions on the reactions of hydrolysis and synthesis of beta-lactam antibiotics with immobilized penicillin acylase
Universidad Austral de Chile	Biotechnology	Various programmes and projects	Wildlife and mycobacterium avium subsp paratuberculosis (map): a reservoir of infection for livestock
Universidad de Talca	Health	Various programmes and projects	Molecular study of the compression wood formation and the gravitropic response in young seedlings of radiata pine

4.4 Uruguay

According to Solar-ICT survey[22], in recent years international cooperation in ICT research in Uruguay has been focused on a variety of topics: software development, security and reliability of distributed software components, computational models, trustworthy systems, energetic optimization, modelling, and education.

Currently, the National Agency for Research and Innovation – ANII is leading the national R&D policies and programmes, also open to ICT research. The four ANII R&D programmes (see Table 7) cover a number of ICT priorities, such as:

- Biomedical computation
- Quantic computation
- Data integration
- Distributed and robust control
- Robotics
- Networks
- Image processing
- Signal processing
- Biomedical engineering
- Computer vision
- Numeric Methods
- Computational Electromagnetism
- Health applications
- Cryptography

Three universities are leading ICT research in Uruguay: ORT University, the Computer Science Institute of Universidad de la República and Universidad Católica. Their programmes description is presented in Table 8 below. Following there is a summary of their ICT R&D topics:

- Data networks
- Signal processing
- Computing theory
- Software engineering
- Object-oriented education
- Internet of Services
- Software & virtualization of resources

- Network of the Future
- Security of ICT infrastructures & services
- Cognitive Systems
- Robotics
- Language Based Interaction
- Embedded Systems Design
- Technology-Enhanced Learning
- ICT for Mobility of the Future
- ICT for Energy Efficiency
- ICT for Environmental Simulation & Monitoring
- Microelectronics
- Embedded systems
- Control systems
- Signal processing and image processing

[22] Solar-ICT, D3.1.6 Country Survey and Mapping Report – *URUGUAY, August 2007.*

- Applied Optics

Other organisations with an active role in promoting the development of the ICT sector in Uruguay are AGESIC – Agency for the Development of e-government and Information Society; INGENIO – Incubator for technology-based business start-ups; CES – Software Testing Centre and RAU2 –the Uruguayan Academic Network member of CLARA. In addition, the Uruguay Government has implemented the Plan Ceibal – On-line learning computer program in Uruguay – provides one laptop and connectivity to the Internet to each student in the public school system, which is having an important impact in the implementation of ICT at school.

The above initiatives are in line with the EC country strategy paper for 2007-2013 that focus future EC cooperation efforts into two focal sectors: (i) social and territorial cohesion and (ii) economic development, innovation and research. That includes policies for research and development and promoting the information society. Cooperation in the area of the information society focuses on fighting the digital divide and promoting social cohesion through IT and communications technology.

Table 7. Uruguay national policies and strategies related to R&D in the field of ICT:

Institution responsible	Programme Name	Programme Acronym	Programme description	Funding Scheme	R&D priorities	ICT priorities (Sub-themes)
Agencia Nacional de Investigación e Innovación (ANII)	Clemente Estable Fund for Scientific and Technology Research	Clemente Estable	Scientific research fund not specific for ICT		All active research areas, not specific for ICT	Biomedical computation. Quantic computation, Data integration
Agencia Nacional de Investigación e Innovación (ANII)	Applied Research Fund María Viñas	María Viñas	In design phase as of 5/2009. First CFP scheduled for June 2009		All active research areas, not specific for ICT	ICT applied research
Agencia Nacional de Investigación e Innovación (ANII)	SNI (National Researchers System)	SNI	National Researcher's System (SNI), where all Uruguayan researchers are ranked and receive monetary benefits for their work.	Each researcher's carrier and scientific production is subject to peer evaluation and ranked in 4 categories.	All active research areas, not specific for ICT	Distributed and robust control. Robotics. Networks. Image processing. Signal processing. Biomedical engineering. Computer vision. Numeric Methods. Computational Electromagnetism. Human health applications. Cryptography
Agencia Nacional de Investigación e Innovación (ANII)	Broad coverage innovation support	ACM/ACP	Innovation projects for companies.	ANII funds 50% to 80% of the project subject to evaluation. 40,000 USD ACP, 250,000 ACM High impact product and process innovations in industry and services	All active research areas, not specific for ICT	

Table 8. Uruguay - Universities leading ICT research

University Name	ICT R&D Areas	Project Name/Programme	Description
ORT University Uruguay	Data networks	Data network control and optimization	Routing control and optimization, multilayer optimization
ORT University Uruguay	Signal processing	Adaptive filtering	Signal processing and reconstruction
ORT University Uruguay	Computing theory	UML model extension for real-time systems	UML model extension for specification of systems and system families; development of tools for system production.
ORT University Uruguay	Software engineering	Software engineering	Estimating project effort and duration from indicators available early in the design process
ORT University Uruguay	Object-oriented education	Teaching of object-oriented programming	Development and evaluation of teaching methods for object-oriented programming
Universidad de la Republica – Instituto de Computacion – (UDELAR/INCO)	Internet of Services, Software & virtualisation of resources	Group LINS (Systems Integration Lab)	The Computer Science Institute (InCo) and the Electrical Engineering Institute (IIE), roughly includes about 70 full time researchers, covering different areas and projects, in close relationship with universities in Europe, Latin America, and North America. The present detailed description covers most groups from InCo.
Universidad de la Republica – Instituto de Computacion – (UDELAR/INCO)	Network of the Future	Group MINA (Network Management and Artificial Intelligence) ; Group ARTES from IIE.	
Universidad de la Republica – Instituto de Computacion – (UDELAR/INCO)	Security of ICT infrastructures & services	Group on Systems Security	
Universidad de la Republica – Instituto de Computacion – (UDELAR/INCO)	Cognitive Systems and Robotic Systems	Group MINA (Network Management and Artificial Intelligence); also groups from IIE	
Universidad de la Republica –	Language Based Interaction	Group PLN (Natural Language Processing)	

University Name	ICT R&D Areas	Project Name/Programme	Description
Instituto de Computacion – (UDELAR/INCO)			
Universidad de la Republica – Instituto de Computacion – (UDELAR/INCO)	Embedded Systems Design	Group LAB (Computer Science Laboratory); Group GRIS (Systems Engineering); also groups from IIE	
Universidad de la Republica – Instituto de Computacion – (UDELAR/INCO)	Technology-Enhanced Learning	Group CSI (Information Systems Design); IIE;	
Universidad de la Republica – Instituto de Computacion – (UDELAR/INCO)	ICT for Mobility of the Future ICT for Energy Efficiency	Group InvOp (Operations Research); also groups from IIE	
Universidad de la Republica – Instituto de Computacion – (UDELAR/INCO)	ICT for Environmental Simulation & Monitoring	Group CeCal (Computing Centre)	
Universidad Catolica (UCUDAL)	Microelectronics, embedded systems, control systems, signal processing and image processing. Applied Optics.	Electrical Engineering Department (DIE) and Computer Science and Informatics Department (DICC).	Uruguay's Catholic University, started with focus in social sciences and humanities, later developed some solid research groups in Engineering also. Private university without public funding except some research grants from ANII or international ONGs.

5. ICT PRIORITY AREAS FOR INTERNATIONAL COOPERATION

Based on national information about ICT policies and priority areas and discussions with ICT stakeholders, such as NCP for ICT in Argentina and Chile, and leading researchers in Brazil and Uruguay, the local partners have identified a number of priorities for research cooperation with the EU, as shown in the table below. These priorities seem to be in line with the EC FP7-ICT programme, although there are a number of focus areas.

	Argentina	Brazil	Chile	Uruguay
Challenge 1: Pervasive and trusted network and service infrastructures				
· The Network of the Future		X	X	X
· Internet of Services, Software and Virtualisation	X	X	X	X
· Internet of Things and Enterprise environments	X	X	X	
· Trustworthy ICT	X	X		X
· Networked Media and 3D Internet	X	X		X
· Future Internet experimental facility and experimentally-driven research		X		X
Challenge 2: Cognitive Systems, Interaction, Robotics				
· Cognitive Systems and Robotics		X		X
· Language-Based Interaction		X		X
Challenge 3: Components, systems, engineering				
· Nanoelectronics Technology	X	X	X	X
· Design of Semiconductor Components and Electronic Based Miniaturised Systems	X	X		X
· Flexible, Organic and Large Area Electronics	X	X		
· Embedded Systems Design	X	X		X
· Engineering of Networked Monitoring and Control systems	X	X		X
· Computing Systems		X		X
· Photonics				X
· Organic Photonics and Other Disruptive Photonics Technologies			X	
· Microsystems and Smart Miniaturised Systems	X	X		X
Challenge 4: Digital Libraries and Content				
· Digital Libraries and Digital Preservation		X	X	X
· Technology-Enhanced Learning	X	X	X	X
· Intelligent Information Management		X	X	X
Challenge 5: Towards sustainable and personalised healthcare				
· Personal Health Systems		X	X	X
· ICT for Patient Safety	X	X	X	X
· Virtual Physiological Human		X		
· International Cooperation on Virtual Physiological Human		X		X
Challenge 6: ICT for Mobility, Environmental Sustainability and Energy Efficiency				
· ICT for Safety and Energy Efficiency in Mobility			X	X
· ICT for Mobility of the Future		X		X
· ICT for Energy Efficiency		X	X	X
· ICT for Environmental Services and Climate Change Adaptation		X		X
· Novel ICT Solutions for Smart Electricity Distribution Networks		X		X
Challenge 7: ICT for Independent Living, Inclusion and Governance				
· ICT & Ageing	X	X		
· Accessible and Assistive ICT	X	X		X
· ICT for Governance and Policy Modelling	X	X	X	X

While Brazil has a great potential for ICT research cooperation practically across the seven ICT Work Programme Challenges[23], Argentina priorities fit mostly within Challenge 1, 3 and 7, with special interest in the following topics:

- Components, systems, engineering: micro y nanoelectronics, Radio frequency identification RFID, Systems on-chip, Embedded systems: low cost sensors
- ICT for Independent Living and Inclusion
- Applications of ICT for greater social inclusion (including applications to education)
- Applications of ICT for improving the logistics of agricultural bulk exports

Uruguay is also exploring ICT areas for cooperation in line with the EC priorities, with great expectations for future cooperation in ICT projects. As for Chile, it is focus on topics from Challenge 1, 4 and 5, particularly Internet of services, Internet of things, e-learning technologies, ICT for health and e-Government.

Overall, there are five ICT priority areas for potential cooperation on which the four PRO-IDEAL countries have been focused:

- Internet of Services, Software and Virtualisation
- Nanoelectronics Technology
- Technology-Enhanced Learning
- ICT for Patient Safety
- ICT for Governance and Policy Modelling

[23] EC, ICT Work Programme 2009-10 Agreed by ICT Programme Committee http://cordis.europa.eu/fp7/ict/

6 ANNEX 1. ELAC 2010 ACTION PLAN – ICT PRIORITIES

eLAC 2010 ACTION PLAN – ICT priorities

Chapter I: Education, our first priority

Description of measure
Framework
1** Develop school curricula that cover data, information and knowledge management and that strengthen teamwork, learning capacity, and problem-solving ability.
2** Conduct annual studies on the impact of ICT use in the educational system, which, inter alia, address the following: the impact of technologies on teaching-learning processes in public and private educational centres, the level of use of ICTs by teachers as a complement in their classes and the state of development of educational software.
Access
3* Connect **70%** of public educational institutions to the Internet, preferably via broadband connections, or **triple** the current number.
Capacities
4* Ensure that, by the time they complete school, **90%** of students have used computers for educational purposes for at least 100 hours, or **double** the current number. Such use requires appropriate training according to the type and level of education and should contribute to students' job skills.
5* Train **70%** of teachers in the use of ICTs or **triple** the current number.
6* Train **70%** of teachers and civil servants in the education sector in the use of ICTs for the development of school curricula, or **triple** the current number.
Applications and content
7* Ensure that **all** national education portals meet the eligibility requirements for full membership in such portals' regional networks.
8** Seek to establish a regional market for digital services and content, to include the implementation of forums, through a public-private partnership with commercial providers.
9** Increase the exchange of experiences and high-quality content in regional networks of education portals, including Web 2.0 applications and other distribution channels such as television and radio.
10** Disseminate experiences with the use of virtual reality tools as ICT applications in educational curricula designed to foster cultural diversity and tolerance and to combat discrimination on the basis of, inter alia, race, gender, religion, ethnic origin, illness and/or dissability.

Chapter II: Infrastructure and access, our second priority

Description of measure
Framework
11** Promote and foster ICT quality while ensuring ICT sustainability and access for persons with disabilities with a view to the genuine social, educational, cultural and economic inclusion of all social sectors, especially vulnerable groups.
12** Strengthen and support the development of community-based network initiatives such as, for example, communication centres, training centres, telecentres, and community-based radio and television stations, to include the use of traditional and new technologies while respecting prevailing legal frameworks.
13** Support the implementation of regional and subregional initiatives which take advantage of the economies of scale and scope of the relevant countries, particularly in order to serve those sectors that have been marginalized from technological progress, such as @LIS, RedCLARA, C@ribNET, Puebla-Panama Plan Meso-American Information Highway.
14** Promote the development of infrastructure in each country and in the region, fostering the deployment of traffic nodes, the installation of copies of root servers and local content hosting, with the object of improving the network's quality and stability and reducing access costs.
15** Carry out actions geared towards promoting the adoption of the IPv6 protocol at the public and private levels with a view to making all public services offered via the IP protocol, as appropriate, available on IPv6 and ensuring that the main State infrastructure and applications are IPv6-compatible. Actions to be implemented will, to the extent possible, include the early implementation of requirements to ensure that government procure equipment and applications that are IPv6-compatible.
Access
16* Provide coverage for **70%** of the population in urban areas with a reliable, preferably high capacity, network, or **double** existing coverage.
17* Provide coverage for **60%** of the population in rural areas with a reliable, preferably highcapacity, network, or **double** existing coverage.
18* Increase the number of ICT access centres serving the community, including libraries and other facilities, in order to **halve** the average ratio of potential users per centre, or achieve a ratio of **1,750** people per centre, regardless of whether it is public or private.
19* Connect **80%** of research and educational centres, particularly centres of higher education, to advanced data communications networks for research and education, such as RedCLARA and C@ribNET, or **triple** the current number.
20** Develop advanced networks in the Caribbean for education and research within the framework of C@ribNET, in coordination with RedCLARA, with consideration for their sustainability and scalability in all cases.
21** Conduct biennial studies on the price structure of fixed telephony, mobile telephony and Internet telecommunications services in relation to an international average, to be estimated by common accord, in order to share experiences and develop public policies aimed at achieving universal coverage and affordable prices for all and at improving service quality.
22** Promote the creation of specially-priced baskets of appropriate-content digital services for socially vulnerable sectors, including, but not limited to, older adults, children, rural communities, indigenous peoples, persons with disabilities, the unemployed, displaced persons and migrants.

Description of measure
Access
23* Review the functionality, design and purpose of universal ICT access funds, and execute at least **80%** of those funds.
24** Maintain the working group on infrastructure, which will support the preparation of studies at the national and regional levels to define the best options for the development of infrastructure to meet the requirements of local or regional traffic flow more efficiently, ensure the continuity of interconnection services and exchange experiences regarding the impact of ICT convergence.
Capacities
25** Identify and support projects that have produced good results, index existing regional portals and exchange experiences regarding community Internet access centres with a view to increasing their effectiveness and improving their sustainability, while also considering exchanges with other regions of the world.
26** Strengthen and interconnect regional platforms for electronic disaster management in areas such as prevention, identification, management and mitigation, including training in their use in cases of emergency, and promote collaboration among these systems through the adoption of international agreements and standards.
27** Promote agreements involving, in particular, geographically and demographically small and medium-sized countries, under which neighbouring countries provide infrastructure to underpin emergency disaster-management systems.
Applications and content
28** Offer response systems such as, inter alia, victim databases and emergency-response resource management systems, that are developed with public funds, and promote their use in countries of the region at national and local levels.

Chapter III: Health, the third priority

Description of measure
Framework
29** Promote the proper integration of information and communications technologies into the health sector, fostering the adoption of public policies that provide for people-centred content production and consumption attitudes and practices that focus on service continuity.
Access
30* Establish electronic health services, including Internet-based services, in **70%** of public health centres and **80%** of public hospitals or **double** the current number.
Capacities
31* Train **80%** of public health professionals in the use of ICTs or **double** the current number.
32** Promote the inclusion in the training of health professionals, particularly decision-makers, of issues relating to the planning and operation of ICT-based health services.
33** Establish, among other follow-up mechanisms in the area of health, a working group to undertake a situational baseline study, identify regional challenges and best practices, as well as issue recommendations that facilitate the transfer of knowledge and the adoption of standards in this area in order to support processes related to health services in the region.
Applications and content
34* Ensure that **70%** of health centres and hospitals work with process-planning and management software or applications, ensuring their interoperability, or **double** the current number.
35** Link up national health portals with a view to establishing a regional network that can be used to share experiences, exchange content and promote their development, adaptation and relevance, taking into account the need for appropriate data protection.
36** Promote improvements in regional health networks through the adoption of standards that will permit digital systems' interoperability, software exchange, interactive applications, the interconnection of applications, and the interconnection of virtual health-related libraries and portals.

Chapter IV: Public management

Description of measures
Framework
37** Strengthen means of exchange on e-government services, developing regional cooperation for the exchange or transfer of technologies, platforms, applications and software and the corresponding knowledge, skills and best practices. Use these networks to implement interoperability standards for e-government services.
38** Promote the interoperability of standards-based e-government systems in Latin America and the Caribbean and continue with the development of a regional interoperability platform and standards for e-government services in order to ensure that the option of interconnecting services within a single jurisdiction or across different jurisdictions remains open, taking into account recommendations relating to work in this area such as the white book on e-government interoperability.[5]
Access
39* Ensure that **80%** of local governments interact with citizens and other branches of the public administration via the Internet, or **double** the current number.
40* Ensure that **70%** of national and local public entities are connected using the "one-stop window" approach for citizen transactions, or **double** the current number, as appropriate.
Capacities
41* Train **80%** of civil servants, particularly decision-makers, in national, regional and local governments in the use of ICTs, in line with their levels, in such a way as to have a positive impact on their performance of their functions, or **triple** the current number.
42** Promote and/or facilitate training in the use and application of ICTs for the purpose of generating new capacities and skills on the part of members of civil society organizations, socially based organizations, other stakeholders and final users in general.
43** Contribute to the use of electronic documents and electronic and/or digital signatures having evidential weight in government procedures by both civil servants and citizens.
44** Promote the adoption or development of electronic means of payment in order to encourage the use of electronic transactions with the State.
Applications and content
45* Ensure that **50%** of the entities making up the public administration post relevant, useful and timely information on their portals, including information about decision making processes, in order to facilitate the government's relationship with citizens and other stakeholders, or **double** the current number.
46** Establish accessibility mechanisms for government portals that guarantee transactions and ensure access for the majority of citizens, eliminating communicational and other barriers.
47** Promote electronic contracting mechanisms in the public sector.
48** Promote the creation of mechanisms for the standardization and consolidation of georeferenced information in order to provide government, the private sector and all other stakeholders with decision-making tools.

Chapter V: Production sector

Description of measure and level of priority
Framework
49** Facilitate access to the necessary resources and capacities for the introduction of ICTs into the production processes of micro-, small and medium-sized enterprises in order to improve their competitiveness in order to generate decent employment.
50** Facilitate access to the necessary resources and capacities for the development of technology enterprises (hardware, software, content and services) and stimulate innovation in existing enterprises, with particular priority being placed on micro-, small and medium-sized enterprises.
51** Promote cooperative networks and links among scientific and technological institutions in order to strengthen the adaptation of ICTs and their innovative capacities.
Access
52** Identify, develop and promote initiatives to provide access to information and communications technologies (including the Internet, fixed and cellular telephony, and media such as radio and television) and permit their use in the production sector in general and in micro-, small and medium-sized enterprises in particular with a view to strategic and operational management, increased value added, competitiveness and improved working conditions. In addition, promote or further develop existing initiatives that facilitate individuals' access to ICT devices and the Internet at affordable prices.
53** Encourage a regional dialogue with the aim of fostering the development of complementary equipment and services for use with products or equipment of extraregional origin so that new technologies will be accessible to small and medium sized radio broadcasters and new reception equipment will be accessible to the most disadvantaged classes.
Capacities
54** Maintain the working group on creative and content industries, take up its proposal for the establishment of an observatory for content industries in the region and promote the search for means of financing its operation. Devise other regional cooperation mechanisms for addressing common challenges, such as those posed by the need to protect cultural heritage, strengthen national identities, finance intangible goods and increase the production capacity for local content that respects cultural diversity and identity.
55** Promote the development of nationally accredited instructional curricula, as appropriate, for employment-oriented ICT training and promote their adoption by vocational training institutions through the press, radio, television, the Internet and other media within a framework of regional cooperation.
56** Promote cooperation among universities, vocational training institutions and the private sector in order to deepen scientific knowledge and strengthen the ICT industry in the region.
Applications and content
57** Promote the creation of telework, mobile work and other forms of employment via electronic networks, particularly for the most vulnerable groups, including persons with disabilities, by means of appropriate equipment (software and digital services), certified training and the validation of experience. Maintain the working group on telework so that suggestions may be made regarding ways of attaining a normative and administrative framework which includes dispute settlement mechanisms.

Description of measure and level of priority
Applications and content
58** Promote the development of a regional portal to provide information on practices in ICT use in micro-, small and medium-sized enterprises and seek resources for its financing.
59** Create regional networks using various types of public-private partnerships to promote the development of internationally competitive software, taking into special consideration the local requirements of local productive and social organizational processes, and foster digital inclusion.

Chapter VI: Policy instruments and strategies

Description of measure and level of priority
Framework
60** Strengthen national policies for the information society from a regional perspective, including coordination and participation by public agencies, civil society and the private and academic sectors, within their respective roles and areas of responsibility, in the design and dissemination of ICT programmes.
61** Nominate or confirm and maintain an entity or mechanism to coordinate national strategies for the information society in all the countries of the region and to act as a national focal point.
62** Prepare comparative studies on the economic and social impacts of ICTs in terms of agendas and policies.
63** Actively seek out formulas for horizontal and triangular cooperation for the benefit of the countries of the region.
64** Create links among centres engaging in ICT research and development in order to increase investment in this field.
65** Continue with the tasks of the working group on financing in order to contribute to the attainment of more and better financial resources for the development of information societies, taking into account the findings of the study entitled “Alternatives for ICT Financing” and the particular defining characteristics of each country in the region.
66** Continue to carry out work and hold annual technical seminars on ICT statistics, with the participation of national and regional statistical agencies, in order to improve the measurement of information societies in the region in close connection with international advances in the field.
67** Develop indicators, in consultations with the Governments, on progress made in terms of the multi-participatory approach in national policy processes aimed at the development of the information society.
68** Request OSILAC to continue the monitoring of activities as a means of identifying best practices, and facilitate the exchange of experiences among public-sector authorities in the region.
69** Promote concrete actions aimed at affording solidarity and assistance in order to facilitate access to the benefits of the information society for the region’s less developed countries, small island developing States and others faced with special obstacles in their attempts to implement their national strategies for the development of the information society.
70** Formulate concrete regional initiatives and proposals to overcome obstacles to the effective execution of national strategies for the development of the information society stemming from the current international economic, trade and financial order by exploring formulas such as debt relief for the promotion of investments to enhance infrastructure development and training in ICT use and development.
71** Request the eLAC Follow-up Mechanism to consult with ITU and relevant regional organizations on a periodic basis regarding activities geared towards the appropriate use of the radioelectric spectrum in the interest of the public and of diversity in accordance with the principle of legality and in full compliance with the relevant international laws and agreements, as well as national and international regulations.

Description of measure and level of priority
Framework
72** Assist the region's various stakeholders to make progress towards fulfilling the principles adopted at the World Summit on the Information Society, particularly those relating to multilateralism, transparency and democracy in e-governance, and maintain the regional working group on e-governance with a view to playing a more active role in international processes and debates and achieving the following objectives: • Promote dialogues for regional cooperation regarding experiences and best practices in e-governance at the national and regional levels. Strengthen spheres of collaboration and cooperation between existing governmental, intergovernmental and non-governmental organizations to enhance capacity-building and information exchange among national and regional stakeholders. • Promote the participation of governments, the private sector, civil society and regional organizations in existing international forums on e-governance with a view to gaining influence and playing an active role in the decision-making processes of those forums. • Strengthen the regional dialogue on aspects of public policy related to egovernance for the benefit of the region based on a people-centred, development oriented and inclusive vision of the Internet.
73** Set up a regional working group for the purpose of facilitating an exchange of different social actors' experiences and visions with respect to the relationship between gender and ICTs so as to encourage the formulation of proposals for the development of national and regional ICT initiatives based on a gender perspective that will serve to guide the mainstreaming of the gender perspective in the implementation of eLAC2010.
74** Renew the mandate of the regional working group on software and maintain the same objectives as those for which it was created.
75** Design and execute policies to foster the proper development of e-commerce, including policies designed to inform providers and consumers about their rights and obligations.
76** Promote the progressive allocation of resources for ICT development and for research and development in this area in the region.
77** Promote the greatest possible access for citizens to public information on a timely basis while respecting cultural, linguistic, disability and other differences in accordance with international standards.
78** Renew the mandate of the working group on the information society's legal framework to facilitate dialogue and the coordination of various regulatory initiatives at the regional and local levels that may contribute to the region's regulatory harmonization.
79** Update and expand the PROTIC database in order to facilitate synergies and the sharing of experiences.
80* Invite countries that have **not yet** ratified or acceded to the Tampere Convention on the Provision of Telecommunication Resources for Disaster Mitigation and Relief Operations to consider the possibility of ratifying or acceding to that convention.
81** Invite countries to consider the possibility of ratifying or acceding to the Council of Europe Cybercrime Convention and its Additional Protocol as an instrument to facilitate our integration and regulatory adaptation in this area within the framework of principles of protection of the right to privacy.

Description of measure and level of priority
Framework
82** Promote the design of national strategies and regulation of technological waste management to deal with the environmental impact of such waste and take advantage of their potential in, inter alia, recycling and rehabilitation programmes, as well as to create a working group to address this subject.
83** Stimulate the production of interactive and interoperable digital content based on existing initiatives or the creation of new instruments, such as national centres of excellence, attempting to ensure that such initiatives are interoperable in the region, use high-speed networks and generate information available through various channels (cellular telephony, fixed telephony, television, radio, computers, film and others). These initiatives and instruments will seek regional coordination, offering environments in the countries of Latin America and the Caribbean for the development of and experimentation with interactive digital content, studies, analyses and evaluations of the programmes pursued, arrangements, programme linkages, and technology exchange for the production of digital content. Content production includes exchanges with universities, research and development institutes, and other public or private institutions for the development of educational content, e-health services, ejustice, e-government, e-trade, entertainment and others. It is also proposed that training be provided for stakeholders involved in the formation of new centres of excellence.

(*) Quantitative measures. The values indicated therein represent average values for the region rather than for each country. These averages are calculated on the basis of the baseline situation and the opinions of experts gathered by the eLAC Policy Priorities Delphi Survey and those expressed in the course of negotiations held in Buenos Aires (4-5 October 2007) and San Salvador (6-8 February 2008).
(**) Qualitative measures, non-measurable activities.

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