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ECONOMIC COMMISSION FOR LATIN AMERICA AND THE CARIBBEAN

WSIS +10

The Latin American and Caribbean outlook

THE DEVELOPMENT OF INFORMATION SOCIETY IN LATIN AMERICA AND THE CARIBBEAN IN THE GLOBAL CONTEXT

In the late nineties, the development of Information Technologies and Communications (ICTs), especially the Internet, marked a worldwide radical transformation of the way of living. Communications became more expedited by using emails and through the development of ubiquitous mobile telephony. The spread of computers and computer systems revolutionized the functioning of companies and public administration. Access to information of all kinds was extended with the emergence of web sites, thus accelerating the development of the information society.

The most advanced countries showed a quick adoption of these new technologies, which showed great potential for economic growth and social inclusion. However, in less developed countries such as those in Latin America and the Caribbean, ICT was an expensive and scarce resource for most of the population, increasing the existing socio-economic inequalities and risks associated with digital exclusion.

Meanwhile, on the one hand, the importance of ICTs became more and more evident, being considered as tools for the achievement of the Millennium Development Goals of the United Nations (MDGs), and on the other, the development of Information Society posed a problem for less developed countries, which was addressed by the World Summit on the Information Society (WSIS). The Declaration of Principles and Plan of Action of the WSIS (WSIS, December 2003) made a call to eliminate the digital divide in access to and use of ICT through action plans and policies to reduce this inequality.[1]

At the time, for most countries of Latin America and the Caribbean the topic was incipient. However, after the participation of representatives of the region at the Summit, the political sensitivity around the issue grew in importance, to the point that for the second phase of the World Summit on the Information Society 2005, a Preparatory Regional Ministerial Conference of Latin America and the Caribbean was organized. Thus, based on the Declaration of Principles and Plan of Action of the WSIS, governments in the region suggested developing the Action Plan for Latin America and the Caribbean 2005-2007. In 2005, several years of dialogue on the relationship between ICT, growth and equity culminated in the Rio Commitment instituting the Plan of Action of the Information Society in Latin America and the Caribbean, known as eLAC2007. The countries of the region asked ECLAC to support them in the implementation of the conclusions and recommendations of the first summit. This call was received by ECLAC by performing actions to coordinate policy dialogue, technical secretariat and statistical measurement, which have supported the process in the last ten years.

From 2005 to the present, there have been significant advances in the different areas of the information society, promoted largely by the adoption of the Regional Action Plan eLAC2007. Following the goals of this plan, the countries of the region moved forward on the implementation of digital agendas, access to computers and the Internet, and the creation of websites, particularly in the context of portals for e-government, e-health and e-education. The focus was on the provision of connectivity at the level of individuals, households, businesses, government agencies, and educational and public health facilities, which resulted in higher penetration rates in terms of Internet users.

[1] http://www.itu.int/wsis/index.html

However, by 2008, the adoption of broadband as a new technology for faster Internet access has accelerated, while the access devices with Smartphone and tablets have diversified. These developments marked a new stage in the progress of the information society, characterized by higher speeds and connection means, proliferation of the use of more advanced electronic applications, among others. Thus materialized many promises of ICT-until then limited by low access speeds- technology related to the provision of online services in areas of social concern. Such applications require features such as real-time communications, computer systems to manage large volumes of data-intensive images and video. It became clear that a new era in digital development, claiming a new generation of ICT policy was emerging.

In this technological context, the most advanced countries faced one of the worst global crises of recent times, leaving out the need to readjust development policies in pursuit of greater productivity, competitiveness, social inclusion and sustainability. ICTs showed its potential to meet this challenge, both for its ability to generate efficiency gains and increase the coverage of social services such as education, health and government. Their incorporation in the production structure is a permanent source of skills that made possible structural changes with long-term vision.

Given this scenario, the most advanced countries increased investment in these technologies, particularly in the deployment of broadband networks and development of advanced electronic applications[2]. This situation posed a new and increased risk of digital exclusion and backwardness, with consequences in the long-term economic growth for Latin America and the Caribbean, who faced a new dynamic in the digital paradigm, when there were still many efforts done in terms of access and basic use of ICTs.

Due the urgency to increase their efforts in building modern societies and inclusive information, countries in the region reaffirmed their commitment to the eLAC process approving action plans eLAC2010 and eLAC2015, that emphasize the need for widespread access to broadband and the development of services based on this technology to achieve improvements in economic growth, equality and sustainable development applications. Additionally, in response to a local problem of dependence on international links to Internet traffic associated with high access costs, the countries of Latin America created the Regional Dialogue on Broadband to seek solutions for the universalization of this service.

[2] "Confronting the crisis. ICT stimulus plans for economic growth", International Telecommunication Unit, (ITU), 2009. (http://www.itu.int/osg/csd/emerging_trends/crisis/confronting_the_crisis_2.pd)

REGIONAL INITIATIVES TO EMBRACE THE WSIS PROCESS

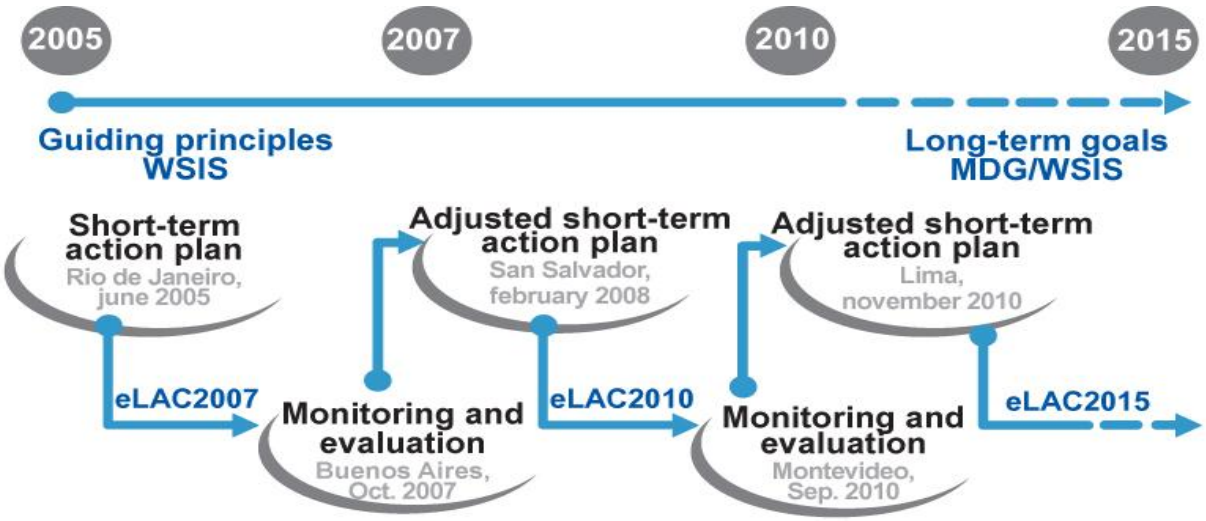
eLAC: PLAN OF ACTION INFORMATION SOCIETY AND KNOWLEDGE IN LATIN AMERICA AND THE CARIBBEAN

The dynamism inherent in the subjects of the information society requires constant updating and understanding of new technological, institutional and policy trends. Otherwise, the countries of the region compromise their inclusion and competitiveness in a global economy highly based on digitization. eLAC process plays a key role in this regard.

The Regional Action Plan for Latin America and the Caribbean for the Information Society (eLAC), is an agenda for economic development and social inclusion based on the adoption of ICTs as tools for innovation, competitiveness, sustainability, participation and social inclusion. It has become a guide for the design of national ICT policies and as a platform for political dialogue and cooperation among the countries of the region. In a region characterized by rapid changes, both from political authorities and public policy priorities, the eLAC process has remained in force for nearly ten years.

It is a strategy with a long-term vision (2015), which is linked to action plans that set short-term goals and priorities according to the needs of the moment. From 2005 to the present, the countries of the region have agreed three action plans a work plans: eLAC2007 (2005-2007), eLAC2010 (2008-2010), eLAC2015 (2011-2015) and a work plan for the period 2013- 2015[3].

FIGURE 1.- DYNAMIC OF THE ELAC PROCESS



[3] See bit.ly/1pNfmWQ

These plans have been adjusted according to the achievement of established goals and objectives and the technological progress and needs of the countries of the region. Approval is given in the context of the Ministerial Conference on Information Society in Latin America and the Caribbean which is organized biannually with decision makers in the political arena and regional and international players in the ICT community. It is a unique space for dialogue in the region to discuss ICTs related issues. The next ministerial conference will be held in Mexico in 2015, preceded by a preparatory meeting to be held in Costa Rica in 2014.

This dialogue has been consolidated with the support and active participation of relevant actors in the political, private, academy and civil society sphere, by generating knowledge and capacity building, exchange of experiences and the promotion of common spaces to foster new development paradigms that encourage growth with social inclusion.

Since its inception, this initiative was able to actively convene key stakeholders and policy makers of telecommunications and ICT industry, academy, representatives of international organizations and civil society, and institutions specialized in different topics of digital development. Based on his experience, each actor contributes to the process in a institutionalized instance as part of the process.

FIGURE 2.- ELAC IMPLEMENTATION MECHANISMS

eLAC2015 Action Plan is implemented through three levels of coordination and cooperation:

Ministerial Conference of follow up: Is the highest instance of decision and general management of eLAC2015. It is responsible for assessing compliance with guidelines, priorities and agreed targets, and to introduce the necessary adjustments and changes in the institutional structure of the plan. The next Ministerial Conference will be held in Mexico in 2015, preceded by a preparatory meeting to be held in Costa Rica in 2014.

Coordination committee: Is the executive body of the follow-up mechanism and is composed of two representatives from each of the following sub regions: Andean, Southern Cone, the Caribbean, Central America and Mexico. Today the countries of the Bureau of coordination are Uruguay (Chair), Argentina, Cuba, Colombia, Ecuador, El Salvador and Mexico.

Focal points: Are the government offices appointed by each country to be the link to the Coordination committee and the Technical Secretariat (ECLAC). Its main functions are: i) to articulate, coordinate and promote the country's participation in the process, ii) ensure the means for the country's representation in the preparatory meetings and follow-up ministerial conference and iii) identify institutions that act as chair and vice chair of the working groups.

Working groups: Are a space for dialogue and cooperation between the governments, civil society, private sector and the technical community of the eLAC2015. The openness is the fundamental principle of participation and integration of the working groups, so that any organization that express and show interest in participating in a working group can do so. Each working group has a chair and vice chair, under the responsibility of the countries designated in each case. The main functions of the groups are: i) encourage networking and collaboration mechanisms, ii) support the exchange of experiences and good practices, iii) promote capacity building, iv) promote dialogue and scientific exchange and v) contribute to institutional links with other forums and organizations.

Indicators Commission: With the support of the Observatory for the Information Society in Latin America and the Caribbean (OSILAC) and) in collaboration with the Working Group on Information and Communications Technologies of the Statistical Conference of the Americas of ECLAC, this Commission has the function to identify and develop the indicators that allows monitoring the eLAC2015 advances.

Technical secretariat: ECLAC acts as technical secretariat of the regional process assisting the follow-up mechanism and the working groups through studies, statistics and relevant information on the information society and associated public policy, the maintenance and expansion of virtual collaborative space, and the technical cooperation for the implementation of the 2013-2015 work plan, the organization of meetings and the ministerial conference of follow-up.

Under this scheme, it has led to maturity and strengthening of this process, making eLAC a guide for building the information society in the region, as well as a meeting space and multi-stakeholder dialogue, which has kept for almost ten years the relevance of the issue of the information society in the regional development agenda.

Since its inception eLAC had the support of European cooperation through the @LIS Programme - Alliance for the Information Society between Europe and Latin America Alliance for the Information Society. However, given its impact in terms of awareness on the issues associated with digital paradigm, its position in the political arena of high level and its contribution to the regional development agenda, ECLAC, at the request of the countries of the region, institutionalized the process with the creation of the Conference of science, innovation and information technologies and communications, a new subsidiary body of this Commission, with which sustainability is given to this initiative beyond international cooperation.

OBSERVATORY FOR THE INFORMATION SOCIETY IN LATIN AMERICA AND THE CARIBBEAN (OSILAC)

In 2003, the lack of information on information technology and communications (ICT) that existed in most of the countries of Latin America and the Caribbean, has led to ECLAC and the Institute for Connectivity in the Americas (ICA), jointly with the International Center for Development Research (IDRC), to create the Observatory for the Information Society in Latin America and the Caribbean (OSILAC). The aim was to have an observatory that will take care of promoting the creation of harmonized statistics on ICT in the region.

The main objectives were:

- Promoting statistical harmonization in order to strengthen the design and monitoring of policies and ICT projects in Latin America and the Caribbean.

- Monitor and review progress of the countries of the region in the development of the information society.

- Support countries in the collection and analysis of statistical data through capacity building and other technical assistance to national statistical offices and other official institutions.

OSILAC has played an important role in the process of harmonized ICT measurement at the regional level in the following areas:

- The identification and characterization of the state of collecting statistical data on access and use of ICT at the regional level and the needs of existing information in the region.

- In joint work with National Statistical Offices and the Partnership on Measuring ICT for Development, in the definition and consolidation of the key indicators for measuring ICT and promoting methodological and data collection strategies access and use of ICT.

- In the collection of data, statistics and indicators collected by the National Statistical Offices, as input to the analysis and research aimed at the development of regional and subregional overviews on the state of advancement of the information society in Latin America and the Caribbean.

The generation of access and use indicators based on surveys of households and businesses conducted by INE of the countries in the region, not only allows the production of indicators of access to and use of ICT among comparable countries in the region, but also allows the socioeconomic analysis of the digital divide for defining appropriate policies. These harmonized indicators, allow to OSILAC Statistical System to cross variables characterizing ICT connectivity (access site, type, online activities, etc.) with socioeconomic variables such as income level, education level, gender, age, and geographic location (urban-rural) of the users, so to identify the different dimensions of the gap.

Given the relevance of this information for policy definition, the Commission supports OSILAC Indicators eLAC2015, as a unique collaborative space of its kind, where the countries of the region, through experts and

national statistics offices of government agencies responsible for promoting usage policies and use of ICT, meet to analyze and discuss the development and generation of ICT statistics[4].

OSILAC also cooperates with the Working Group on Information Technology and Communication of the Statistical Conference of the Americas (CEA) of ECLAC. Jointly and regularly they publish a Compendium of Practices for Implementing ICT Questions in Surveys and Business, and methodological guidelines for measuring ICT by households and individuals, companies, government and other sectors. These publications allow not only monitor the major advances in the design and implementation of questions about access and use of ICT in business and household surveys of the countries of the region, but also are useful as support material and training for managers design and implementation of surveys on ICT to the extent that it document the methodological agreements reached and facilitate experience sharing between agencies and institutions that produce statistical data on ICT in the countries of the region.

REGIONAL DIALOGUE ON BROADBAND

In June 2010, on the initiative of the Government of Chile, ECLAC arranged a first meeting between telecommunication from authorities Argentina, Brazil, Chile, Peru and Uruguay to address a common problem: the high cost of international links for Internet traffic that it turns into high rates of broadband service. Thus, the Regional Dialogue on Broadband was conceived as a space for discussion and exchange of experiences, approaches and proposals for widespread access to such service.

Participating countries asked ECLAC acting as Technical Secretariat of the dialogue process with supporting studies that account for regional issues. This gave rise to Regional Broadband Observatory (ORBA), responsible for developing indicators on the service, collect, organize and disseminate information on policies to its massification, and develop and disseminate periodic reports on the state of development of broadband in the region. Thus, the ORBA is a source of relevant and timely information that supports the definition and monitoring of public policies for universal broadband implementing countries in the region. The results of the studies and statistics of rates and quality of broadband service have been disseminated by the media and social networks in the countries of the region, thus increasing the sensitivity of the issue of access to the service by the public and decision makers review.

Currently this space has 11 member countries of the region: Argentina, Brazil, Bolivia, Chile, Colombia, Costa Rica, Ecuador, Mexico, Paraguay, Peru and Uruguay. It has become in a place that promotes the exchange of experiences in the framework of South-South cooperation, and fed with specific technical studies and statistical indicators, fosters the technical and political dialogue, and facilitate the meeting of stakeholders in the public and private sectors. Each Dialogue meeting is preceded by a meeting with representatives of industry and governments, in which current issues are discussed, as well as emerging topics that will have greater relevance to

[4] The Partnership report presented at the 43rd session of the Statistical Commission of the United Nations (February 2012 highlights the Commission Indicator eLAC2015 as international good practice in collaboration between national statistical institutes and ICT policy makers).

the countries of the region. Following, is carried out a closed meeting between government representatives, where are agreed policy guidelines.

These recommendations have been recognized by the Union of South American Nations (UNASUR). In 2012, the telecommunications ministers of UNASUR members, pledged to consider public policy recommendations of the "Declaration of the Fourth Meeting of the Regional Dialogue on Broadband." With this, and the signing of the agreement to build a South American fiber optical ring and implement initiatives that promote digital development and bring the great content servers to the region, allow to the Regional Dialogue on Broadband to consolidate itself not only as a stage for south-South cooperation and bilateral dialogue, but also as a space for concrete initiatives that promote regional integration.

REGIONAL ACHIEVEMENTS

Through the implementation of the regional initiatives described above, it has helped the countries of Latin America and the Caribbean to achieve significant progress in the different areas of the information society, including the following accomplishments.

INCORPORATION OF ICTS ITEMS ON AGENDAS FOR DEVELOPMENT OF LATIN AMERICA AND THE CARIBBEAN, AND GOVERNANCE MATURITY OF THE INFORMATION SOCIETY

- **Adoption of national policies on ICT and information society for more than 80% of countries in the region.**

eLAC has successfully brought together all the governments of the region in a political commitment to prioritize access and use of ICTs, promoting exchange of experiences, providing capacity-building, raising awareness and developing substantive information and data for the formulation of evidenced–based policies.

It is important to note that eLAC has kept alive for over 10 years the digital topic on the agenda of regional development, in a region characterized by its political instability and social changes. In this sense, eLAC has allowed that technical nature topics be an element of integration in the region.

Under the eLAC process, it has carried out several actions, with the aim of supporting the development of digital agendas in countries of the region. These activities range from organizing events of technical and political dialogue, to the generation of statistical indicators on ICT, through studies, workshops, capacity building and publications, among others.

From 2005 to date, have organized four Ministerial Conference on Information Society in Latin America and the Caribbean, with their preparatory meetings, which have called for an average of 200 participants from the political, private sector, academia, agencies international and civil society representatives. ECLAC has conducted over 120 seminars and workshops on diverse topics related to the development of the information society, particularly in the areas of e-education, e-health, e-government, infrastructure for digital inclusion and ICT industry productive, plus ICT and Gender and environment. Have also been developed over 30 publications together studies in the above areas, and 14 newsletters on the subjects contained in the eLAC5.

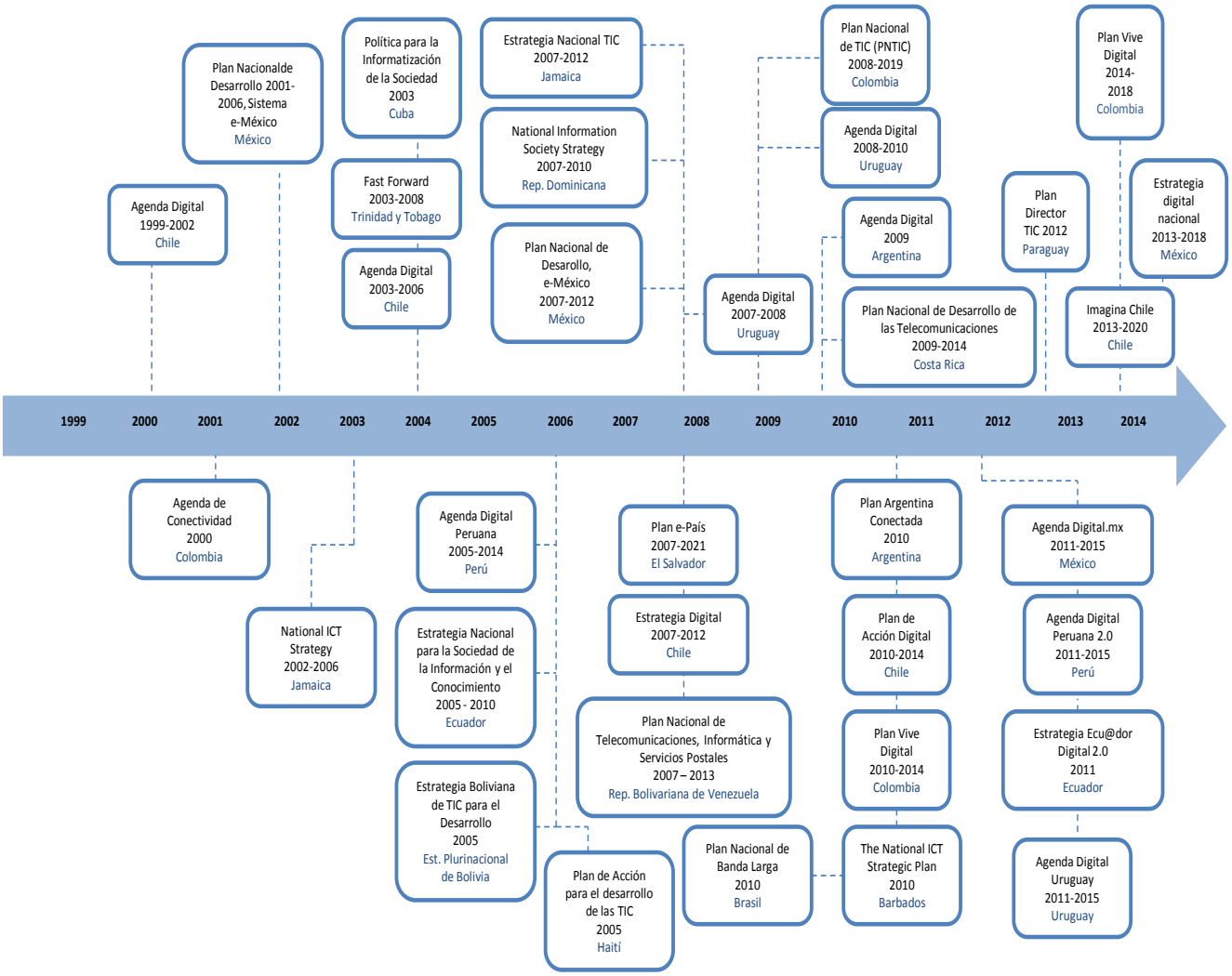
These actions helped to generate a propitious environment for the development of public policies and strategies for the information society in Latin America, contributing to the generation of regional agendas as eLAC plans, which in turn have sensitized the need to define and implement national strategies to promote digital development in line with the global technological progress. For many countries participation in the above events and the studies, was an input for the preparation of agendas and sectoral policies including ICT, that under a national vision of reality have considered not only the guidelines of eLAC but also sectoral policy recommendations.

Thus, under the eLAC process, we have supported the countries of the region in developing or updating their

[5] See http://www.cepal.org/socinfo/publicaciones/

digital strategies. Since 2005, the beginning of eLAC process, from a sample of 23 countries in the region, 83% have launched digital agendas. Currently, 65% of these countries have digital agendas in force (see Figure 3).

FIGURE 3.- ADOPTION OF AGENDAS ON INFORMATION SOCIETY IN LATIN AMERICA



Source: ECLAC.

- **Regional perspective on internet governance**

Today is undisputed the growing importance of Internet as a primary means to bridge the digital divide, which has led to a transformation in the way people communicate to each other today, as well as an engine for economic development. In this context, there arises an issue of the highest importance: the Internet Governance, which means in other words who is responsible for the management of critical Internet resources, like IP addresses and domain names.

This issue has been addressed in a multi-stakeholder model through the Internet Governance Forum (IGF) since 2006. However, last year some events changed the tone of the discussion, turning this issue into a critical area. Spy allegations made by former employee of United Security Agency (NSA) Edward Snowden, exposed the lack of security and control of the networks from most countries subject to United States intelligence, as it was the case of Germany and Brazil.

Given this fact, Brazil reacted organizing the NetMundial Conference that was held in April of this year with the support of the international community, with the purpose to discuss the principles that should direct Internet Governance worldwide. However, the result was a non-binding statement, but for the first time it was an issue of discussion the role of Governments in the Internet Governance.

This important debate also finds space for discussion at the regional level through the Working Group on Internet Governance under eLAC process, which is led by Brazil and Argentina, where the countries of the region are actively involved to align positions on these issues. This debate at international level will continue, especially in the next Plenipotentiary Conference of the ITU next October 2014.

Also, under the eLAC process, it is important to note the significance of Montevideo Declaration signed at the Fourth Ministerial Conference on the Information Society in Latin America and the Caribbean, where the region's countries resolved to "reject any attempt to appropriate, without the due consent of the region's countries, the names Amazonia and Patagonia in any language, as well as any other top level domains (gTLD) referring to geographical, historical, cultural or natural names, which must be preserved as part of their cultural identity and heritage" (action line C8 and C10). This was a very important precedent in the case of "Patagonia" defended by Chile and Argentina before the Governmental Advisory Committee of ICANN (GAC), where the company finally desisted from their application for the new top level domain name ".patagonia".

ECONOMIC AND SOCIAL IMPACT OF BROADBAND AND DIGITAL ECONOMY DIMENSION

Latin America and the Caribbean is progressing at two very different technological speeds: in some countries, ICTs are having a positive impact on economic growth, technological investment, production structure and business/consumer behavior, while in other countries progress is slower (hence the need to strengthen institutions and public policies with a long-term strategic vision). For example, there is an asymmetrical development of critical infrastructure with mobile broadband penetration in the region: the three best performing countries represent a rate equivalent to 75% of ICT Development Index of the OECD countries, while the three worst performers, only reach 38%. Furthermore, the digital divide between Latin America and countries of the Organization for Economic Co-operation and Development (OECD) in terms of mobile broadband is getting wider, in 2013, in the region mobile broadband penetration reached 17% of the population and 8% in the case of fixed broadband versus 71% and 28% respectively in OECD countries.

Economic impact of ICTs:

- ***Quantification of the contribution of ICTs to economic growth.*** The digital economy represents 3% of Latin America's GDP (by contrast, EU 27 is 5%, U.S. Is 6%, Japan is 7%).
- ***10% increase in broadband penetration can boost GDP by up to 2.5%***, while the impact may only be 0.16% in Latin American countries.
- ***Broadband and digital technologies use is concentrated in applications for personal use and basic ICTs for business.*** The impact on productivity is, therefore, low.
- ***Other factors for the low level of adoption*** are lack of interest in the content , applications and skills.

E-Agriculture

In Latin America, social inclusion and environmental sustainability in agriculture are especially relevant issues, in light of the great structural heterogeneity within the sector and, more recently, the stepped-up pressures on natural resources resulting from the boom in international commodity markets. Yet, the adoption of ICTs in agriculture cannot be expected by itself to reduce production asymmetries and enhance social inclusion. On the contrary, the dissemination of ICTs could indeed produce new gaps by replicating the sector's historic disparities.

Additionally, awareness was raised among decision makers in the sector to take advantage of ICTs to reverse the uneven development of regional agriculture. They identified as a useful mechanism, to transfer best practices among countries in the region, which share similar realities regarding the inclusion of agriculture in the economy and the origin of sectoral asymmetries.

E-Education

ECLAC has focused, the work in this area in the Identification of critical factors for its development in LAC: teacher training in ICTs, digital educational contents, integration of ICTs in the curriculum, and use of ICTs for teaching and school management.

Thanks to the work in this area, which emphasized the key role played by digital training of teachers in the adoption of ICTs in the education system, there was a refocusing of ICT policy in education to teacher training. Currently, 71% of countries in the region explicitly consider the professional development of teachers in their policy objectives.

REDUCING THE DIGITAL DIVIDE AND GREATER INCLUSION WITH REMAINING CHALLENGES

Reduction of digital divide

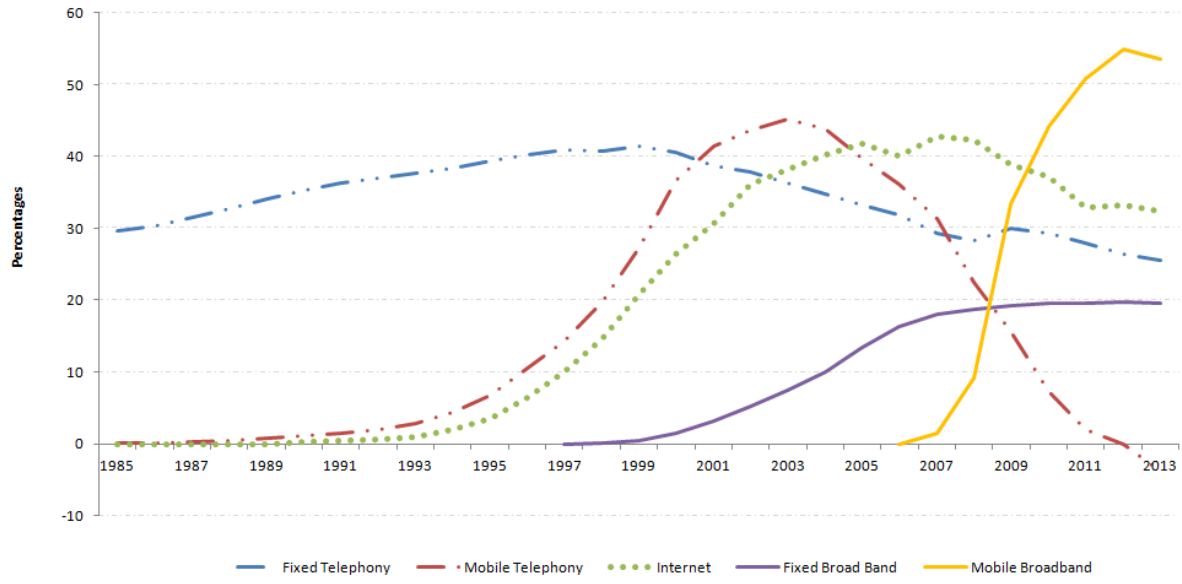
The potential of ICTs is only fully realized when they are accessed and used intensively by most part of the population and by a majority of firms, government agencies and civil society organizations. The **digital divide**, due to the evolving characteristics of ICTs, poses a major challenge for developing countries, both internationally and nationally. For example, in Latin America and the Caribbean, while the gap on access to mobile telephony has been closing, the gap is widening in broadband access. At a national level, Internet access in poorer households is twelve times less than in richer households.

While connectivity continues to be a major challenge, particularly due to the high cost of the services and low quality levels, the effective use is also restricted by many other socioeconomic determinants: income, education level, gender, rural localization, among others.

In this context, the followings are the achievements of the last years:

- **Advances in the development of ICTs by 35% between 2008 and 2013.** The Latin American countries have improved their position in the Index of ICT Development, showing the most progress in the sub-indexes of infrastructure (41%) and use (116%).
- **Reduction in the Internet user gap from 43 to 32 percentage points between 2007 and 2013 among Latin American countries and the OECD**. In Latin America, the percentage of individuals using the Internet rose from 24% in 2007 to 47% in 2013.
- **Access to fixed broadband by the citizens in Latin America** rose from 4% to 9% between 2007 and 2013.
- **Access to mobile broadband** increased from 0.69% of the population in 2008 to 24% in 2013.
- **Decrease of the internal digital divide** up to 85%, measured as the ratio of Internet access in households between the richest quintile and the poorest.

Evolution of the digital divide



Source: ECLAC with data from ITU, The World Telecommunication ICT Indicators database 2014.

Improvement on broadband services

- ***Significant*** in terms of affordability and service quality.
- Between December 2010 and July 2013, fixed broadband service tariffs for 1Mbps ***fell by 68%:*** from 18% of monthly GDP per capita to 6%.
- However, ***50% of the population does not subscribe to the service because of its high cost*** (in Nicaragua, Bolivia, Honduras and Ecuador, the cost of a mobile broadband subscription exceeds an average of 10% of GDP per capita monthly, while in England and Japan the same cost amounts to 0.6% and 0.7%).

Regional connectivity

ECLAC conceives broadband as the cornerstone of a system for economic, organizational and social innovation which in conjunction with complementary assets (infrastructure, skills, production structure), is driving a positive dynamic across all economic and social sectors. Achieving such a synergy calls for a new policy approach with a comprehensive, flexible, long-term view which combines the objectives of greater productivity, innovation, security, social inclusion and sustainability. This approach requires the State to play an active role, building

capacities that would enable it to design instruments and coordinate actions with the private sector for addressing the challenges of the digital economy.

In this sense, the region's public and private sectors have boosted investment in the infrastructure needed to deploy new networks and in programs which encourage broadband use by individuals and businesses. The region realizes that it is not a sectoral issue to be treated solely at the national level. Its implications are for the economy as a whole and the costs of international connectivity is a regional issue; an estimated of 85% of Internet traffic passes through the United States, which raises the final price of the service by around 20%-40%.

It is necessary to address the factors directly impacting costs by expanding traffic exchange points (IXPs), promoting web caching and hosting content on servers located within the region. At the national level, it is necessary to facilitate the expansion of mobile broadband: **one year of delay in the deployment of new networks has a cost of 66 billion dollars, or 1% of regional GDP**. Digital policies currently in place do not attach due importance to making infrastructure-building and mass uptake of broadband part of national industrial policy strategies.

These conditions gave rise to the **Regional Dialogue on Broadband**, a forum with the overarching goal of making the economic and social benefits of broadband available on a mass scale. It provides a platform for discussing and sharing experiences to formulate public policies and concrete initiatives aimed at lowering the cost and improving the quality of broadband in Latin America. The Dialogue also includes a forum for public-private debate on emergent issues and its members represent 11 governments in the region[6], the main telecommunications firms, academic experts and international organizations working in this field.

Since its creation in 2010, its main contributions are: strengthening the political dialogue with technical support, fostering integration through the development of regional infrastructure (submarine cables and IXPs), highlighting the need for a regulatory framework update, and the generation of indicators on access, affordability and quality of broadband to support public policy decisions. These indicators show a **significant progress in the broadband services offered in the region in terms of affordability and service quality.**

CONTENT AND APPLICATIONS

Regarding content and applications, it is necessary to improve their quality and prices, promoting web caching and hosting content on servers located within the region. For this purpose regulatory authorities should protect and promote competition in all markets relating to the Internet. This is essential for the purpose of achieving economic and operational efficiency in the Internet market.

A policy of attraction of hosting content in a country should include the following aspects, according to the studies

[6] Argentina, Brazil, Bolivia, Chile, Colombia, Costa Rica, Ecuador, México, Paraguay, Perú and Uruguay.

made by **Regional Dialogue on Broadband**. These aspects take into consideration the economic and technological fundaments and successful practices in advanced countries:

i) Promoting competition and growth of the entire Internet ecosystem.
ii) Analyzing and promote market competitiveness of IXPs in each country, comparing metrics IXPs with those of other continents with more experience in this area.
iii) Developing plans to address the situation in countries that do not have IXP, or where the market is dominated by few.
iv) Stimulating interconnection not only domestically, but also regionally, helping to reduce the cost of broadband in the region.
v) Generating clear rules limiting the liability of Internet intermediaries in relation to user-generated content, such as the provisions for "safe harbor".
vi) Respecting diverse rights as copyright, patents, privacy, freedom of expression, and the protection of user information.

MEASURING AND MONITORING

With the purpose to support the eLAC process, it was necessary to create mechanisms to allow monitoring and measuring the information from the countries regarding ICTs, and also to foster the harmonization of statistical indicators among the region.

- OSILAC has continued to support the ICT measurement in the region. The data on ICT access and use represent an important input for formulating, monitoring and evaluating public policies which guarantee a more inclusive access and usage of ICT in the region.[7] OSILAC maintains updated an online Statistical Information System on ICT which gathers available 121 databases of household surveys from the 18 countries of the region, allowing the calculation and analysis of ICT and socioeconomic indicators over time, among the countries, within the countries of the region, and in relation to other countries and regions of the world.

- ORBA continues to produce indicators on diffusion and access to broadband, tariffs and service speed. The specific data is an important input for defining and formulating broadband national plans. Data shows

[7] For example, data generated for the 12th session of the Regional Conference on Women in Latin America and the Caribbean shows that the gap widened in several countries. The difference between men and women is almost 5% (39.3% versus 44%) in Chile - which has one of the highest Internet usage rates overall. In Peru, 26% of women and 34.1% of men report using the Internet. This digital gender gap is more common in urban than rural areas, and mainly affects older women of all levels of education. The prevalence of Internet usage increases in proportion with the household level of income, although the gender gap is narrower in those groups where the technology is less accessible. For instance, Uruguay is the most unequal country in this regard, and 34.5% of women in the first quintile report using the Internet compared with 63% from the fifth quintile.

a significant progress in the broadband services offered in the region: a reduction in the fixed broadband service tariffs by 67% between 2010 and 2012, and the improvement in the quality of broadband connections. Between March 2010 and December 2013, download speeds ***increased by 319%*** (7.6 Mbps), while upload speeds ***increased 364%*** (2.5 Mbps).

NEW TRENDS

In Latin American region, the low penetration of service associated with its poor quality in terms of speed and latency associated with insufficient regional connectivity hold back the appropriation of more advanced technologies such as **cloud computing or big data**, with a corresponding impact on the economy. The expansion of cloud computing could create more than 200,000 SMEs in an economy the size of Brazil, generating about 900,000 new jobs in the next five years.

In contrast, in developed countries, recent progresses in virtualization, storage, broadband connectivity and processing have come together to enable a new model of IT provision services: **cloud computing**. The result is a new paradigm, extremely attractive from an economic perspective due to its capacity to combine cost-saving with increased flexibility in the management of the ICT needs of firms and governments.

The expansion of cloud computing faces several constraints in the Latin American region:

- Inadequate broadband infrastructure to support online services and applications which demand high bandwidth and limited connectivity.
- Weak legal and regulatory frameworks. This generates uncertainties about the competences for regulating the cloud market and the applicable law due the no boundaries features of this model.
- Limited privacy and security due to external data storage, dependency upon public internet and multi-tenancy.
- Lack of human resources with IT skills.

In order to seize the opportunities offered by cloud computing, governments and industry must face two key challenges involving political, legal and regulatory issues: protection of users' interests and the provision of sufficient network access and capacity. The main challenge is doing so with a regional or global approach.

Another challenge for the region is **big data**. Currently Brazil and Mexico, are the two principal markets in this area with the majority of revenues. However, it is expected that Latin America's big data and analytics market will triple in the next five years.

The main factors for the investment in these technologies are operational, with motives including cost reduction, process efficiency and optimization of time and resources, including long term business strategies.

Latin America continues to account for a relatively small portion of the global big data and analytics investment. Worldwide, investment in business analytics solutions reached US$104bn in 2013, while that figure reached US$12.6bn for big data, according to IDC.

POST 2015

The region has made progress towards an information society, but at vastly different speeds. While some countries in the region are closing the digital gap with the more advanced economies, others show significantly poorer performance. In these countries the use of digital technologies is just basic, and their economic and social impact is low. This deepens regional heterogeneity, hinders the development of the least developed countries and undermines the possibility of sustainable development of the region as a whole. See bit.ly/1uKqtiR

Closing the digital gap, particularly the use of big data, implies increasing access and appropriation of digital technologies and accelerating their diffusion across all economic sectors, through the definition and implementation of policies that, according to the post-2015 agenda, transform economies for quality jobs and inclusive growth.

In line with this objective, ECLAC has proposed to undertake policies of structural change for equitable and sustainable development. In this framework, through innovations and new technologies, the digital economy can foster investment, diversification of the production structure and productivity growth. See bit.ly/1pTYXL2

During the Fourth Ministerial Conference on the Information Society in Latin America and the Caribbean held in 2013, countries of the region emphasized the importance of the digital economy as the key to changing production patterns, generating quality employment, creating local value added and enhancing the region's competitiveness and integration into global markets, and the need for further policies on structural change that foster more knowledge- and innovation-intensive production and promote sustainable growth with social equality in line to SDGs. See bit.ly/1whz79J

The structural change needed for the development of the region and the future economy depends on a close link between digital and innovation strategies, broadband development, and sectoral industrial policy design. Only then will it be possible to make significant strides toward a new, more knowledge-intensive production structure that can generate the high-quality jobs needed for making steady progress towards greater equality and more sustainable economic and social development.