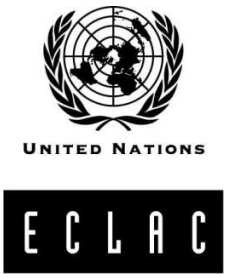
Project Document

Public policies for the information society: a shared vision?

Massiel Guerra
Valeria Jordán



Economic Commission for Latin America and the Caribbean

This document was prepared by Massiel Guerra and Valeria Jordan from ECLAC. The opinions expressed in this document, which has not been subjected to editorial revision, are those of the authors and do not necessarily reflect those of the organizations involved.

This document has been produced with financial assistance from the European Union. The views expressed therein do not necessarily reflect the official opinion of the European Union.

This report can be downloaded online at http://www.cepal.org/SocInfo.

United Nations Publication

LC/W.314

Printed in Santiago, Chile – United Nations

Contents

I. Abstract

The rapid development of information and communication technologies (ICTs), in terms of access to mobile telephony and Internet services, the incorporation of computers into everyday activities and the development of electronic services and applications, took Latin American societies and governments by surprise, as their sudden proliferation in the second half of the 1990s called for a new public policy focus when areas traditionally considered as development priorities had not yet been fully addressed. Although the countries of the region acknowledged ICTs as a means for economic and social development, their approach was mainly to ensure widespread access to these technologies, rather than to incorporate and assimilate them into society's various activities. This meant that an ICT development approach took precedence over an ICT-based approach to development.

For Latin American countries, the implementation of public ICT policies has been a learning process that is still ongoing and has not always been smooth. It calls for the maturing and reformulation of traditionally-designed policies, in order to tackle a very fast-evolving issue that poses challenges for public administration and institutions and is affected by a variety of factors both endogenous and exogenous to the process.

In order to ascertain how this development has occurred in the region, part one of this document starts by identifying the reasons why ICTs have been made a public policy objective, illustrating the situation in the region in terms of existing gaps not only between Latin America and the developed countries of Europe, but also among countries in the region. It goes on to identify the special characteristics that distinguish ICT policies from traditionally-designed ones, rounding off part one by defining the factors governing progress with digital agendas in the region. Part two describes the state of progress with ICT policy implementation in Latin American countries – as well as Spain and Portugal – identifying national and regional efforts in promoting ICT actions, that is to say the countries' individual digital agendas and the Plan of Action for the Information Society in Latin America and the Caribbean (eLAC). Next it identifies different elements for characterizing them, before making a comparative analysis of these elements.

II. Public policies and ICTs in Latin America

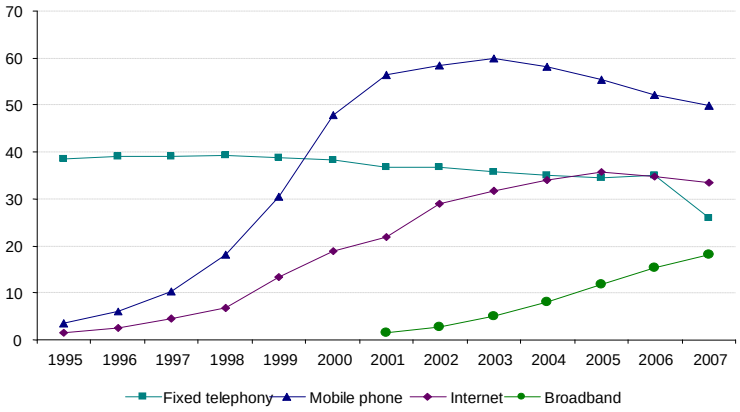
1. Need for ICT policies

In recent years most Latin American countries have defined digital strategies, plans, policies or programmes for implementing public ICT policies, considering them as means for developing society as a whole. In some countries, digital plans were implemented with an emphasis on specific spheres of operation, whereas in others the issue was shelved or simply fizzled out when new needs appeared on the public agenda.

Looking beyond the facts, ICT policy agendas are becoming a necessity in Latin American countries for a variety of reasons. One is to optimize production and organizational processes, adding economic and social value with positive effects on growth. In view of this opportunity and the lag in ICT access and use (referred to as the 'digital divide'), there was a need for public policies to narrow this divide and promote the creation of information societies.

Closing the digital divide in access is a major public policy challenge because of the fast-evolving nature of ICTs, calling for the constant adjustment of policy objectives as new technologies emerge. For instance, in the 1990s attention focused on ensuring widespread access first to fixed telephony, later to mobile telephony and more recently to the Internet. This is illustrated in figure 1, which shows how the gap between Latin American countries and Europe in the penetration of different telecommunication services is evolving. It is interesting to note how new challenges arise before existing challenges have been met. This means that even though the gap in access to mobile telephony has narrowed, it is still wide, as is the gap for Internet access, at a time when the broadband-access divide is expanding ever faster.

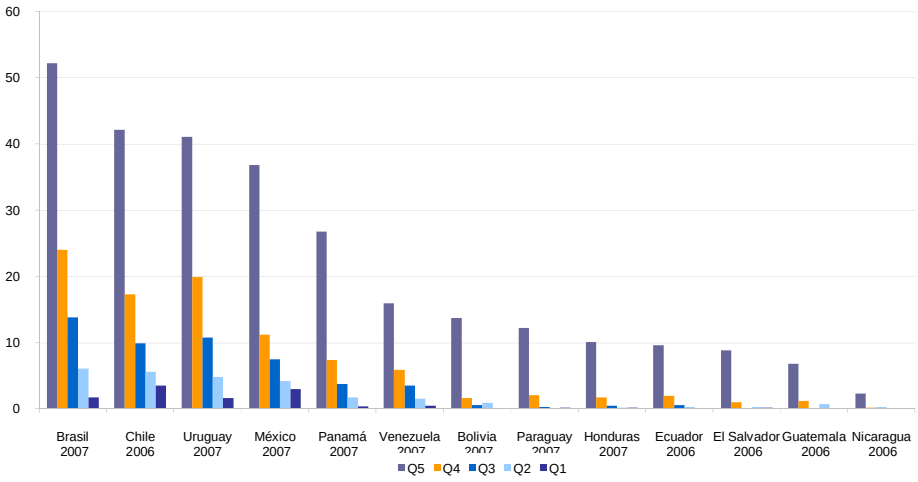
FIGURE 1
DIGITAL DIVIDE IN ACCESS BETWEEN LATIN AMERICA AND EUROPE
(percentage points)



Note: The digital divide in access is the difference between Latin American countries and Europe in the average penetration rate of various services in each region. The penetration rate for fixed telephony, mobile telephony and broadband is calculated on the basis of the number of subscribers to these services as a percentage of the total population. The Internet penetration rate is calculated on the basis of the number of users as a percentage of the total population.
Source: Economic Commission for Latin America and the Caribbean (ECLAC), Information Society Programme on the basis of International Telecommunication Union (ITU), "World Telecommunications Indicators Database", 2008.

The gap in access needs to be narrowed because of the impact of ICT adoption and use on economic growth and the fact that by remaining on the sidelines the lag increases still further. There is also a risk that existing socio-economic inequities between different population segments will deepen further if the incorporation of technology were to be left to market forces alone (social digital divide). Figure 2 shows differences in the rate of Internet access by income quintile in 13 countries in the region.

FIGURE 2
PERCENTAGE OF HOUSEHOLDS WITH INTERNET ACCESS IN ACCORDANCE WITH INCOME QUINTILE



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

Figure 2 shows a significant gap in access between the richest population segment and the lowest-income segment, which can be addressed using various types of policy wherein the State takes responsibility for promoting and facilitating not only access to ICTs but also their use, turning them into instruments for the inclusion of society's most disadvantaged sectors.

By helping to increase productivity and efficiency, ICTs also assist in increasing economic competitiveness and growth, making them a natural focus for public policies. This is all the more necessary as firms have been somewhat slow to adopt and use ICTs, and incentives have been required to speed up their incorporation into the various production activities, especially in small- and medium-sized enterprises (SMEs).

Digital policy agendas are also needed because they provide a platform for coordinating efforts, which tend to be dispersed at present. As economic and social sectors incorporate ICTs at different rates and in different ways, they can sometimes develop initiatives and projects with identical objectives in different sectors, creating sources of inefficiency that result in duplication of effort and waste of resources.

The formulation of information-society strategies is therefore based on the concepts of complementing and correcting market development and on increasing the efficiency of ICT-related activities. The aim is to exploit the synergies arising from the knowledge and skills of each actor in the digital sphere to multiply the benefits of ICTs in all sectors and ensure that they are extended to society as a whole.

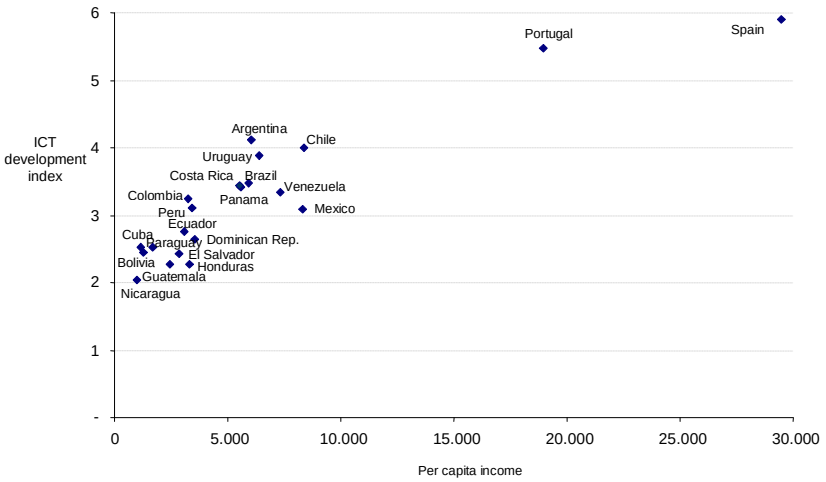
2. Factors governing progress with digital policies in the region

As with any public policy, in digital policies four phases can be discerned that are not necessarily consecutive: origin or identification of the problem; design or formulation of the policy; implementation; and evaluation or control. All these phases are complex to design as well as implement, and are affected by exogenous and endogenous factors that govern their rate of progress. The factors exogenous to policy formulation include the country's level of development, stability and policy stance, as well as the level of awareness of the importance of the information society. Endogenous factors, which are subject to policy decisions and government rulings, include the degree of participation and consensus expected to be achieved, the hierarchical level of policy decisions and of the responsible agency, the quality of administrative management and the availability of resources.

The national strategy environment relies heavily on the individual country's socio-economic and political situation, which sets the priorities for government activities. However, the environment is also determined by the rate of progress and awareness of the information society. This is illustrated in the figure 3 below, which relates the per capita income of the Ibero-American countries (Latin America, Spain and Portugal) with their level of digital development, based on the ICT Development Index of the International Telecommunication Union (ITU).[1]

[1] The ITU ICT Development Index (IDI) comprises three sub-indices: the IDI access sub-index, which includes fixed telephone lines, mobile cellular subscribers, bandwidth per user, percentage of households with computers and percentage of households with Internet; the IDI use sub-index, which includes the number of Internet users and fixed and mobile broadband subscriptions; and the IDI skills sub-index, which includes the adult literacy rate, the secondary gross enrolment ratio and the tertiary gross enrolment ratio.

FIGURE 3
PER CAPITA INCOME AND ICT DEVELOPMENT INDEX, 2007



Source: Economic Commission for Latin America and the Caribbean (ECLAC), on the basis of information provided by the International Telecommunication Union (ITU).

Figure 3 shows the correlation between levels of economic and digital development but it also reveals that, even where income levels are identical, some countries are making faster progress in the use of ICTs. This could be because they are more committed to and aware of the issue, giving it a place in the policy agenda and promoting actions geared towards digital development.

It is essential for politicians to be aware of this, not only when defining a strategy but throughout the process, as its implementation relies on this awareness. Leadership is also needed to turn actions into a national ICT policy. In fact where there is political awareness of the issue, a single high-ranking political leader who can mobilize and encourage decision-making on the matter is sometimes more effective in meeting objectives than a bottom-up, grassroots process and can be more enriching, inclusive and legitimate. That said, a grassroots movement can ensure that the issue is made a more lasting feature of the development agenda, although this does not guarantee that it will actually be implemented. In any case, the country's style of government will dictate which direction this will take.

Other exogenous factors, such a country's growth trends, macroeconomic situation, stability and policy stance will also have an impact on the continuity of the digital agenda process, as they will determine government priorities and the relative importance of the issue.

One of the endogenous factors is the level of participation of the actors involved, which strengthens the legitimacy of the consensus achieved during the definition phase and has a direct impact on the continuity of the process. The hierarchical level and degree of institutional development of the agency appointed to lead, coordinate or implement the national strategy determine the outcome because they influence the agency's ability to perform the appointed task. The nature of the policy document (legal or administrative) is also important, and defining it in a legal instrument will give it more binding force, although this does not guarantee that the policy will actually be implemented. Similarly, progress in each phase of a strategy will be determined by the availability and management of the resources earmarked for implementing the national strategy, working methods and the establishment of clear procedures for coordinating the participants.

III. Progress with the implementation of digital agendas in Latin America

1. Evolution of ICT policies in the region

Public ICT-related policies in Latin American countries began in around the mid-1990s. As with any public policy, their formulation and implementation relies on each country's political and economic context. At first the advent of globalization focused governments' attention sharply on the ICT issue, as ICTs are a key means for entering the globalization process.

Despite their potential, especially in terms of their economic impact, Latin American countries chose to integrate ICTs into their public policies in three target areas, gearing their approach more to social inclusion, in stark contrast with European countries, whose approach focused on the use of ICTs in the production and business spheres. The first target area was the development of telecommunication infrastructure to close the divide in access to these technologies, as this determines both the development of other sectors and the ability of individuals to exploit their potential by using electronic applications. The other two target areas were education and public administration, where the incorporation of ICTs increases efficiency and improves the coverage and quality of these services. In fact, these sectors had started addressing the ICT issue even before it was envisaged to develop national agendas for the information society.

In the case of education, the need to build skills for the effective use of ICTs put pressure on educational institutions, first in higher education and later in primary and secondary education, to incorporate ICTs by training specialists in the field and by using ICTs in schools. As one of the main suppliers and sustainers of education systems, the State therefore chose to include this topic in its education policies with a marked technological bias, which would later present it with a different set of problems, arising from the lack of integration of ICTs into teaching processes.

In the case of the government sector, the obvious benefits of incorporating ICTs, mainly as a means of communication and for improving administrative processes, turned them into a highly attractive instrument for modernizing the workings of the State. Policies were developed to endow government offices with these technologies, at the same time expanding the online presence of the different State agencies. Indeed, unlike what happened in more advanced countries, where online electronic commerce (e-commerce) applications had already accustomed people to using ICTs, the

nascent development of such applications in the Latin American region meant that the momentum came instead from the provision of electronic government (e-government) services, turning them into the main drivers of electronic applications utilization in Latin American countries.

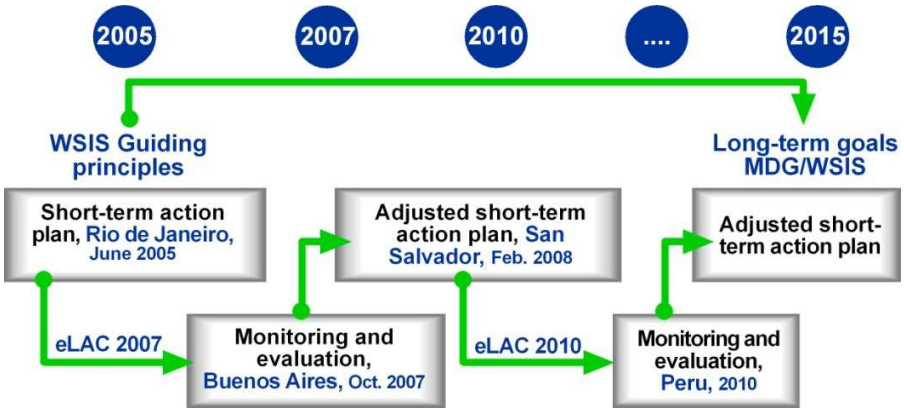
Independently of sectoral efforts, in early 2000 some Latin American countries started to make their first attempts at designing a comprehensive public policy for the information society that would include not only the three areas mentioned above but would encompass the entire economy and society. Later these attempts were reinforced by the two phases of the World Summit on the Information Society (WSIS) in 2003 and 2005 respectively and the inclusion of ICTs within the United Nations Millennium Development Goals, which incorporated this same vision.

As the preliminary outlines of an integrated ICT policy were developed in the region, there was gradual recognition of the cross-sectoral nature of the issue, just as countries were facing a number of challenges arising from the impact of technological progress on policy design. It was realized that short-term horizons for action were needed because what would have been desirable for another type of policy —a long-term horizon— was not feasible for an ICT policy. As these technologies are advancing at vertiginous speed, any policy actions in this area appear to become obsolete in just two or three years.

This led to the Plan of Action for the Information Society in Latin America and the Caribbean[2] in 2005, as a technical and policy mechanism for the development of ICTs throughout the region. This is a policy agenda agreed by governments of the region which, recognizing the importance of ICTs for the economic and social development of Latin American countries, seeks to facilitate ICT adoption processes by means of region-wide cooperation and exchanges of best practice.

ELAC is designed as a process with a long-term vision and short-term actions, in line with international long-term goals, including those of the World Summit on the Information Society and the Millennium Development Goals. The eLAc process takes the form of plans with goals to be met within around two years, after which it is evaluated in order to readjust the objectives in line with the progress being achieved and any priorities that may emerge. Figure 4 illustrates the eLAC process.

FIGURE 4
THE ELAC PROCESS: A LONG-TERM VISION WITH SHORT-TERM PLANS



Source: W. Peres and M. Hilbert (eds.), *The Information Society in Latin America and the Caribbean: Development of Technologies and Technologies for Development*, Libros de la CEPAL, No. 98 (LC/G. 2363-P), Santiago, Chile, Economic Commission for Latin America and the Caribbean (ECLAC), 2009, forthcoming.

[2] See http://www.cepal.org/SocInfo/eLAC.

The Plan of Action for the Information Society in Latin America and the Caribbean is currently in its second implementation phase, with eLAC2010 for the period 2008–2010. Its six chapters contain 83 goals drawn up following a public consultation on policy priorities[3] held at the end of the first eLAC implementation phase (2005–2007), and after monitoring the progress achieved up to 2007.[4] Many of the goals set for this second phase stemmed from new priorities, while others were reformulated goals from phase one of the eLAC process and only a minority remained in their original form.

ELAC2010 reflects a wide-ranging development of digital policies. It takes the approach that ICTs should be assimilated by each sector in the economy and society. It has been structured to serve this integration rationale, with the aim of promoting simultaneously: access to ICTs, capacity-building for ICT use, and the development of electronic applications and content in the education, health, public administration and production sectors, based on the deployment of telecommunication infrastructure and national policies to promote this multidimensional development.

While the countries jointly define regional priorities in terms of ICT policies via the eLAC process, it is through its respective national agenda for the information society that each country addresses its own special requirements and contingencies, which in turn are determined by that country's level of development. As a result, priorities vary from one national agenda to another, with some countries continuing to place heavy emphasis on access to ICTs, while others focus more on the development of electronic applications for different sectors of the economy. The following section makes a more detailed analysis of the status of national digital agendas in the region.

1.1 Status of national strategies from an Ibero-American perspective

Latin American countries have been implementing information society policies[5] for more than five years with varying rates and degrees of progress, reflecting the differing levels of maturity in this area. As they have shared the same vision of the benefits of ICTs for economic and social development for a number of years now, most countries have already completed the initial phase of identifying ICTs as a public policy objective and are now engaged in the subsequent phases of formulation, implementation or evaluation. Some countries are even implementing second-generation ICT policies, after completing and evaluating first-generation ICT policies.

Table 1 shows the status of public policies for the creation of information societies in the Ibero-American countries as at June 2009, detailing each country's degree of progress, the characteristics of their current policy agenda, prior documents and the institutional framework for implementing the digital policy.

Of the 21 Ibero-American countries for which information is available, 16 are currently developing first-generation digital policies and five are developing second-generation policies. In spite of the broad consensus in the region on the importance of ICTs, there were still some countries without a policy document in mid-2009. Indeed, eight countries have been engaged in the initial phases of

[3] The eLAC Policy Priorities Delphi Survey, conducted by the United Nations Economic Commission for Latin America and the Caribbean (ECLAC), has been held up as a model in the region for multisector participation and as an innovative tool for formulating public policies. See http://www.cepal.org/cgi-bin/getProd.asp?xml=/socinfo/noticias/noticias/4/29954/P29954.xml&xsl=/socinfo/tpl/p1f.xsl&base=/socinfo/tpl/top-bottom.xsl

[4] See http://www.cepal.org/cgibin/getProd.asp?xml=/publicaciones/xml/5/29945/P29945.xml&xsl=/ddpe/tpl/p9f.xsl&base=/ socinfo/tpl/top-bottom.xsl

[5] Information society policies are understood to mean initiatives that take an integrated approach to the concept, that is to say they are geared towards widespread access to ICTs, human resource training and the creation of electronic content and applications in the different sectors of society. Even where a country has e-government strategies, ICT policies for education or software development initiatives, if these strategies and policies are implemented in isolation and are not designed as part of an integrated policy, the country is not considered to have information society policies. Conversely, a country is deemed to have a digital agenda when this is explicitly formulated and is reflected in a specific document, or where it is implicit in a higher-ranking document of wider scope, such as a national development plan.

designing and formulating first-generation policies for a number of years. In such cases, it may well be that a policy has been agreed but that for one reason or another it has not been implemented, stalling the process in its formulation phase. A further eight countries are in the process of implementing first-generation digital agendas: Argentina, Bolivarian Republic of Venezuela, Colombia, Cuba, Dominican Republic, El Salvador, Guatemala and Peru. Finally, five countries (Chile, Mexico, Portugal, Spain and Uruguay) are currently implementing second-generation ICT policies.[6]

The disparity in rates of progress is explained by the exogenous and endogenous factors mentioned earlier, which have had repercussions on the different phases of policy formulation and implementation. Paraguay is a case in point, where several attempts have been made to define a digital strategy. However, the strategy has remained stalled in its commencement (origin) phase because it was not approved by the authorities responsible for decision-making in the various sectors involved. This demonstrates that sufficient awareness was still not there and therefore the political backing for its implementation was lacking. Argentina and Brazil's attempts to equip themselves with a national ICT policy have been delayed by other factors, including the countries' administrative structure. The presence of a large number of entities competing for partial leadership and federal government intervention are additional factors that have stood in the way of reaching consensus on the adoption of a national programme. In other countries, such as Ecuador and the Plurinational State of Bolivia, exogenous factors like changes of government have interrupted the continuity of the implementation process. Although the two countries defined their first strategies in 2005, they are still in the formulation phase owing to successive revisions and reformulations of the initial concepts by previous governments

[6] Among the countries in the region with digitization programmes, all are explicit policies with the sole exception of Mexico. This analysis considers the 'e-Mexico' system as an implicit digitization strategy within a State policy defined in Mexico's National Development Plan 2001–2006.

TABLE 1
NATIONAL ICT STRATEGIES IN IBERO-AMERICAN COUNTRIES, JUNE 2009

Country	Characteristics of the current document			Background and status		Institutional framework of the current strategy		
	Document name	Period of validity	Document type	Prior document and year of issue	ICT policy generation and phase	Chief coordinator	Strategic management	Operational management
Argentina	Argentina Digital Agenda Strategy	ND	Final	National Programme for the Information Society 2000	First generation – Implementa-tion	Cabinet and Public Administration Secretariat	Technical Secretariat to the Presidency	Office of the Under-Secretary for Information Technology and National Information Technology Office (ONTI)
Bolivia (Plurina-tional State of)	National Plan for Digital Inclusion 2007–2010	2007–2010	Draft for the next phase	Bolivian ICT Strategy for Development (ETIC) 2005	First generation – Formulation	Agency for the Development of the Information Society in Bolivia (ADSIB) and Office of the Deputy Minister for Science and Technology in the Ministry of Development Planning	Inter-agency Committee	Technical (inter-agency) Committee
Brazil	No document	NA	NA	Green Paper on the Information Society 2001	First generation – Formulation	NA	NA	NA
Chile	Digital strategy 2007–2012	2007–2012	Final	Digital agenda 2004–2006	Second generation – Implementation	Ministerial Committee for Digital Development	Inter-agency Committee	Office of the Executive Secretary in the Ministry of the Economy (inter agency)
Colombia	Connectivity Agenda	2000 – Indefinite	Final	No prior document	First generation – Implementation	Institution entitled 'Agenda for Connectivity'	Office of the President	Executive Board chaired by the Ministry of Communications

Costa Rica	No document	NA	NA	National Plan for Science and Technology 2002–2006	First generation – Origin	NA	NA	NA
Cuba	National Programme for the Compute-rization of Cuban Society	ND	Final	Policy for the Computerization of Society	First generation – Implementation	Office for the Computerization of the Ministry of Information Technology and Communications	Council of Ministers	Office for the Computerization of the Ministry of Information Technology and Communications
Ecuador	National Connectivity Agenda (2005–2010 Action Plan)	2005–2010	Final	No prior document	First generation – Formulation	National Committee for Connectivity	National Committee for Connectivity (inter-agency)	National Committee for Connectivity through Special Technical Committees
El Salvador	'e-Pais' Programme	2007–2021	Final	No prior document	First generation – Implementation	National Committee for the Information Society	Office of the President of the Republic	'ePais' Organization
Spain	'Avanza2' Plan	2009–2012	Final	'Avanza' Plan 2006–2008	Second generation – Implementation	Ministry of Industry, Tourism and Trade		State Secretariat for Telecommunications and the Information Society
Guatemala	National Agenda for the Information and Knowledge-Based Society	2007–2015	Final	No prior document	First generation – Implementation	Not established	Not established	Not established
Honduras	No document	NA	NA	NA	First generation – Origin	NA	NA	NA
Mexico	National 'e-Mexico' Development Plan 2007–2012	2007–2012	Final	National Development Plan 2001–2006	Second generation – Implementation	National e-Mexico System	Communicatio ns and Transport Secretariat	Communications and Transport Secretariat
Nicaragua	No document	NA	NA	National ICT Development Strategy 2005	First generation – Origin	NA	NA	NA

Panama	No document	NA	NA	National Agenda for Innovation and Connectivity 2005	First generation – Origin	NA	NA	NA
Paraguay	No document	NA	NA	National Development Plan for the Information Society 2002–2005	First generation – Origin	NA	NA	NA
Peru	Peruvian Digital Agenda	2005–2014	Final	No prior document	First generation – Implementation	Multisectoral (inter-agency) Monitoring and Evaluation Committee	Office of the President of the Council of Ministers	National Office for E-Government and Information Technology (ONGEI) in the Office of the President of the Council of Ministers
Portugal	Technology Plan	2005–2009	Final	Green Paper for the Information Society (1996). White Paper for Scientific and Technological Development in Portugal (1999–2006). National Broadband Initiative (2003).	Second generation – Implementation	Council of Ministers	Inter-agency Committee	Agency for the Knowledge-based Society (UMIC)
Dominican Republic	National Strategy for the Information Society, Strategic Plan 2007–2010	2007–2010	Final	No prior document	First generation – Implementation	National Committee for the Information and Knowledge-Based Society	Technical Secretariat to the Presidency	Technical Support Unit (UTEA) based at the Dominican Telecommunications Institute (INDOTEL)

Uruguay	Uruguay Digital Agenda	2008–2010	Final	Uruguay Digital Agenda – 2007–2008	Second generation – Implementation	Agency for the Development of Electronic Government and the Knowledge-based Society (AGESIC)	Office of the President of the Republic	Agency for the Development of Electronic Government and the Information and Knowledge-based Society (AGESIC)
Venezuela (Bolivarian Republic of)	National Plan for Telecommunications, Information Technology and Postal Services 2007–2013	2007–2013	Final	National Information Technology Plan 2001	First generation – Implementation	National Information Technology Centre	Ministry of Science and Technology	Ministry of Science and Technology

Source: Economic Commission for Latin America and the Caribbean (ECLAC), Information Society Programme.

2. Comparative analysis of agendas in Ibero-America

2.1 Approaches and emphasis in agendas for developing information societies

In spite of the wide disparities between Latin American countries, they tend to share the same vision of ICTs, in the sense that most of the national agendas consider ICTs as tools for social development. In the main, policy formulation demonstrates an understanding of the meaning and scope of ICTs for the development of an information society, where ICTs are seen not as an end in themselves but rather as a means for facilitating sectoral development. Also in evidence is a social and human-development approach that seeks ways to rectify certain situations of poverty and inequality and to promote social rights and inclusion. For instance, Argentina's recent digital strategy, approved in May 2009,[7] is described as *"a national plan for inclusion and appropriation by the government, institutions and individuals of the benefits of the knowledge-based society through the intensive and strategic use of ICTs"*. This vision is shared by countries such as Chile, El Salvador, Mexico, Peru, Portugal and the Plurinational State of Bolivia.

Nevertheless, the emphasis varies depending on the socio-economic divide between countries and on the maturity being acquired in a number of specific areas. This comes into sharp focus when comparing the agendas of Latin American countries with countries such as Spain, where the social rationale has given way to a more production-oriented approach. For instance, even though Spain's current public policy agenda, the 'Avanza' Plan,[8] initially considered inclusion as a means for integrating marginalized groups such as women and older or disabled people, in its second phase from 2009 to 2012 strong emphasis has been placed on production aspects under a marked business-development rationale. Two of the 'Avanza' Plan's five core areas are devoted to the incorporation and/or development of ICTs in small- and medium-sized enterprises and a third to improving the business environment by boosting information security policies ('eConfianza' Plan), which to some extent also impact on business activity. In addition, the Plan includes strategic aspects for the future development of the information society, such as faster broadband Internet access and coverage of rural areas, as well ensuring the transition to digital terrestrial television (DTT). Such approaches are still in their infancy in Latin America, where policies usually continue to incorporate issues that technological change is leaving behind in other regions of the world, without awaiting future ICT trends and a real opportunity to make 'forward' adjustments, which would avoid efforts with poor returns. Portugal stands mid-way between Latin America and Spain, in the sense that it incorporates strategic and key information society issues without abandoning the social and inclusion rationale, for instance in the case of its broadband development policy. Broadband is one of the technologies where the divide between Latin America and the most developed countries is widest. Portugal is resolute in its goal to ensure affordable broadband access for its entire people under equitable conditions.

The approach to ICT issues also differs depending on how they are perceived, the country's internal organization in each sector and the existence of key projects capable of boosting a particular area on their own. For example, the way in which policy agendas envisage the incorporation of ICTs into education – one of the topics that feature prominently in the digital strategies of Latin American countries – is largely dependent on the country's education system. Countries like Argentina view education from a perspective of human capital development and include strategic guidelines not only for incorporating ICTs into curriculum material and training specialist human resources in these technologies, but also for forging research, development and innovation (RDI) partnerships among production sectors. Countries such as Uruguay include in their guidelines labour market-oriented public education in innovative subjects, such as bioinformatics, as well as the promotion of research and education projects, the development of a national system of innovation and scientific publications, and other measures. Uruguay has also implemented 'the 'CEIBAL' (Basic Computer

[7] See https://www.agendadigital.ar/.
[8] See http://www.planavanza.es/.

Educational Connectivity for Online Learning) Plan as part of the 'One Laptop per Child' (OLPC) scheme. The 'CEIBAL' Plan covers areas of educational infrastructure, curriculum redesign and digital inclusion, which has turned it into a policy in its own right, complementary to the actions in Uruguay's digital policy. Chile has a fragmented education system, where the digital strategy for the education sector focuses more on developing course content, ensuring optimum infrastructure, building digital skills (teachers and pupils) and improving educational management, meaning that it takes a narrower approach to ICTs in education than in the cases mentioned earlier.

Another factor that has also influenced the approach to ICTs is the global economic and financial crisis, prompting the international community to commit itself firmly to these tools in the belief that they can be used to make innovations in business and management models to reduce operating costs. As a result, ICT investment by the developed countries is far from waning, whereas in Latin America not enough information is available to ascertain whether this intention has come to anything more than political rhetoric.

2.2 Hierarchical rank of the policy, responsible agency and institutional dynamic

In some countries in the region, digital policies are not specific but are included in the national development plan guidelines, which increases their ranking. The digitization policies of the Bolivarian Republic of Venezuela, Chile, Colombia, Mexico, the Plurinational State of Bolivia and Portugal are included in national plans, whereas those of the Dominican Republic, Ecuador, El Salvador, Peru, Spain and Uruguay are specific.

The hierarchical ranking of the conceptual design document is also important for successful implementation of the policy. It is difficult to implement policies that have no legal backing to support the agreed strategies and action plans, as can be observed in most countries in the region, where only Argentina, Colombia, Ecuador and El Salvador have documents that confer legal status on a strategy contained in an administrative document. However, those documents are not enough in themselves to guarantee the continuity of the process from the definition phase through to implementation. In Ecuador, a centralized, top-down decision led to the formulation of a National Connectivity Agenda in November 2002. However, the lack of sufficiently broad-based participation during this phase stripped it of the necessary legitimacy to encourage the actions of parties that had not been included in the Agenda's formulation. This demonstrates that the existence of a legal instrument is important only if it serves to validate a consensus reflecting the interests of a broad sector of citizens.

The degree of commitment depends on the political rank of the party making the commitment. The nature of responsible agencies differs widely from country to country, although in most cases a strategic entity and a more operational type of entity can be clearly distinguished. Strategic entities include ministerial committees – as in the case of Chile, Peru and Portugal; secretariats to the Presidency (as in the case of Argentina); ministries (as in Spain); agencies created specifically to lead the process of building information societies (as in Uruguay); national committees (as in the Dominican Republic, Ecuador and El Salvador) and Cuba's Office for the Computerization of the Ministry of Information Technology and Communications. This shows that, despite the differences, most of the strategies have an adequate hierarchical ranking in the political organization chart, which in all cases assigns operational tasks to an operational management agency that also varies widely in nature from country to country. The key consideration for the various actors involved in the policy is the dynamic that exists between the aforementioned institutions and any sectoral agencies that might any direct involvement in the implementation of certain specific and cross-cutting initiatives for achieving policy objectives. This is a tricky process that entails building ties, trust and commitment, which to an extent determines the success or failure of the efforts undertaken. Indeed implementation problems have been observed as a result of institutional weaknesses and a lack of the political backing needed to carry out cross-cutting actions.

2.3 Action plan, cost estimation and financing alternatives

The objectives of most Latin American agendas have an operational component and a degree of specificity, which are reflected in action plans.[9] Programmes of this type do, of course, include a strategic phase, that is to say, general approaches more in line with a public policy vision and expectations. It can be risky to rely on a strategic policy that does not result in concrete action plans, as in practice it is nothing more than the expression of a desire that does not lead to real actions.

In terms of whether they contain a clearly defined sequence of measures to be adopted as part of an action plan, making it possible to identify the events determining future actions, most of the aforesaid instruments do not achieve that level of depth. In most cases, the guidelines focus on assigning responsibilities and identifying coordinating agencies, rather than on defining specific actions and ways to implement them. This does not necessarily mean that more detailed plans do not exist, merely that they are not part of explicit public policy, nor are they publicly available. For example, the Dominican Republic has expressed the need to create coordination mechanisms and has defined the role that the key players are supposed to play, without investing this with the degree of specificity that would catalyze and guarantee future actions.

Even greater weaknesses are apparent in the areas of costing and budget estimation for implementing the actions set out in the agendas, as well as in sources of financing; in fact these are practically non-existent in the policies of Latin American countries. Added to this are problems in coordinating the necessary resources, which usually depend on the meagre budgets of the competent authorities. For this reason, in some countries, such as Colombia and Ecuador, the ICT projects implemented by the various authorities have produced inventories containing a range of expenditures, such as providing schools with computers, investment in databases for the health sector and payroll costs for information technology staff in government offices, although it would have been desirable for them to include expenditure on major social projects and private initiatives as well. In cases that do mention financing, the concepts are ill-defined and centre chiefly on the financing source. For instance, the Plurinational State of Bolivia's financing sources are cited as a combination of *"international credits, Technology Development Bank funds, the National Fund for Regional Development and Geneva Digital Solidarity Funds"*. Peru and the Dominican Republic are just as allusive, whereas Chile is slightly more specific when it states that *"each agency in charge of public ICT policy areas is accountable for the part for which it is responsible"*. Chile's Ministry of Finance is the only agency in the region to have included ICT expenditures in the government budget, forcing the authorities to specify them in their annual budgets (DIPRES, 2005).[10]

It is very important for there to be budgetary accounting because it enables ICT policies to be positioned and ranked within government development policies. Spain is the country that has made the greatest strides in terms of budgetary accounting. In Spain the headings in the budget earmarked for actions to develop the information society are subdivided into strategic guidelines, as well as into each action therein. Records are also subdivided by source of financing and by Spain's administrative regions.

---

[9] The policies of Chile, Colombia, the Dominican Republic, Ecuador, El Salvador, Peru and Uruguay include both strategic and operational objectives, whereas those of Argentina, the Bolivarian Republic of Venezuela, Mexico and the Plurinational State of Bolivia centre solely on strategic objectives.

[10] Chile earmarks around 2.3% of public expenditure for ICTs. Government spending on ICTs was US$ 205 million in 2004, not including regional and local governments.

IV. Thoughts and recommendations for furthering Latin America's digital development

ICTs are general-purpose technologies that can be incorporated into any sector of activity. They help to optimize the processes underpinning the daily activities of contemporary society. The creation of information societies therefore calls for widespread access to ICTs and their adoption in all sectors of economic and social organization, in order to create intrasectoral complementarities to exploit the potential of an information- and knowledge-based society. This results in a complex process that must be State-led.

Most Latin American countries are aware of this and have defined digital policies to channel their efforts. However, owing to a variety of factors including the countries' level of economic development, political and social stability and understanding of the issue, many of these policies have not progressed beyond rhetoric, having failed to find either the vehicle or the manner in which to implement them.

If the region really wishes to progress with digital development it must channel its efforts into public policies combining two levels, strategic and operational, which consider the special characteristics of ICTs as development agenda objectives.

1. Strategic vision, legitimacy and institutional status

As the benefits of ICTs derive from their capacity to optimize transactional processes between various agents, it is not enough for each sector of the economy and society to adopt them independently. Instead ICTs must be developed in parallel in order to create cross-sector complementarities that will facilitate the effective integration of the processes associated with society's production and organizational activities. It is futile to develop e-government services if citizens have no Internet access to use those services or, conversely, to provide Internet access if no content or applications are available of interest to users. If there is no cross-sector use of technology, the benefits arising from its incorporation are diluted, or else their potential is not exploited to the full. This means that not only are cross-cutting, multisectoral policies needed, specific sectoral policies reflecting a strategic long-term vision of the country's development must also be promoted simultaneously.

In Latin America, the inclusion of ICTs in public agendas has usually been limited, geared to the aspects considered most pressing and important for each country, to a certain extent neglecting the long-term strategic vision and complementarity that ought to guide the introduction of these technologies. Even though it would not, of course, be feasible for such policies to address all aspects required for the full development of a digital society, it is essential to retain the complementarity approach in the priority guidelines in order to derive optimum benefits from any efforts undertaken, in a kind of virtuous circle.

An ICT policy strategy must be given political backing to guarantee its place within the public development agenda and to ensure its sustainability and continuity. Political backing springs from the legitimacy of ICTs in the country's social and political context, recognizing the real need to incorporate these technologies into everyday activities and the advantages that this will bring. Therefore it is not enough for an individual leader to promote an ICT policy, but rather there needs to be a system of shared responsibility combining the decentralized intelligence of a social group under a bottom-up approach with the backing of higher-level authorities conducting top-down actions. This ensures that society's understanding and internalization of the issue are consistent with high-level decision-making.

Other complementary elements can shore up an ICT strategy, such as legal instruments to guarantee it, but even though they raise the strategy's public-policy status they are not enough in themselves. Another key element is the hierarchical level and institutional status of the entity in charge of the ICT policy, as this will determine the real possibilities for practical implementation. The majority of Latin American countries have implemented digital strategies based to a greater or lesser degree on coordinating the public and private sectors and civil society. The organization and coordination models for the different countries' strategies vary, ranging from decentralized models involving authorities from several sectors at the same hierarchical level coordinated by an umbrella organization, to centralized models where a specific authority is in charge of each sector. Even though no one model is superior to another for conducting this type of policy, clearly the most important prerequisite for all these models is the existence of both strategic planning and operational implementation bodies. It is also essential for there to be close coordination in the definition of guidelines to ensure that their actions complement one another on the basis of a shared understanding of and belief in the matter.

As strategic planning must take a long-term view, it is important to have a flexible digital strategy containing short-term actions that can be monitored and/or measured with a view to achieving significant impacts on society. This undoubtedly poses new challenges for public institutions in terms of the required dynamism and management capability.

1.1 Action plan and implementation mechanisms

To ensure that the ICT policy agenda results in concrete actions it is crucial for there to be an action plan for conducting the agreed strategy that defines and plans how to implement the strategic guidelines. The identification of sectoral objectives and formulation of action guides will improve coherence between the actions of all stakeholders, including public authorities, private firms and members of civil society, promoting strategic partnerships without which it would be difficult to make fast and steady progress. This makes is possible to exploit economies of scale, synergies and visibility and so improve resource allocation.

As with any planning process, it is necessary to define those responsible for conducting each specific task, with the agencies specialized in each sector of application being the prime candidates for the task. This is very important for technology appropriation, in that the agencies competent in each field are precisely those best placed to work out the most effective way of incorporating and implementing ICTs in the different sectors. All this calls for major coordination, as concerted efforts are bound to achieve better outcomes than isolated initiatives, especially in such a cross-cutting issue as this.

When defining the tasks to comply with the action plan it is important to determine the time horizons for implementing them, as well as to define monitoring indicators to measure quantitative and qualitative progress in each area wherever possible. This means that action plans must consider a horizon commensurate with the pace of technological progress.

It is therefore desirable for a digital action plan to be given its own financial resources and management personnel. This tends to be one of the most neglected aspects of existing strategies, as it is rare for a digital action plan to have its own budget. Instead it is common practice to obtain funding by redistributing the budget of the agency responsible for a particular task. The same applies to human resources. This is an obstacle to the implementation of related projects and makes ICTs tangential to the development of sectoral activities, with the result that they lose relative importance.

Full coherence is needed between the strategy and the action plan, in the sense that the strategic guidelines should be matched by a definition of tasks, responsible agencies, completion deadlines, indicators and an associated budget, and vice versa. Failing this, national strategies will remain a mere formality and fail to reach sectors that would benefit from the incorporation of such technologies.

Moreover, fast technological change is also highlighting a range of new demands that need to be met, such as legislation for Internet-based activities (including transactions, formalities and computer crime) or the treatment of electronic waste. These instruments need to be made flexible enough to accommodate adjustments.

While all these aspects are common to all public policies, in the case of ICTs their cross-sector nature and the vertiginous speed of technological change make it even more necessary to adopt a long-term strategy vision that considers structural complementarities, to be realized by means of a short-term action plan.

V. Bibliography

Archibugi, Daniele and Simona Iammarino (2001), "The globalization of technology and national policies", *The Globalizing Learning Economy*, New York, Oxford University Press.

Campero, José Carlos (2000), "Participación, políticas públicas y democracia", document presented at the fourteenth "Concurso de ensayos y monografías sobre reforma del Estado y modernización de la administración pública", Latin American Centre for Development Administration (CLAD), unpublished.

Capasso, Marco and Nelson Correa (2007), "ICT and knowledge complementarities: a factor analysis on growth", document prepared for the Information Society Programme, Santiago, Chile, Economic Commission for Latin America and the Caribbean (ECLAC), unpublished.

DIPRES (Budgetary Affairs Bureau) (2005), "Sistema de control de gestión y presupuestos por resultados. La experiencia chilena", Santiago, Chile, Ministry of Finance, [online] http://www.dipres.cl/control _gestion/publicaciones/control_gestion_presupuestos_exp_chilena_sept_2005.html.

ECLAC (Economic Commission for Latin America and the Caribbean) (2007), "Reflexiones finales sobre eLAC2007. Un plan de acción para América Latina y el Caribe", *Newsletter*, No. 3, Santiago, Chile [online] http://www.cepal.org/socinfo/noticias/noticias/2/29952/NEWS3versionESP.pdf.

_____ (2005), "Public policies for the development of information societies in Latin America and the Caribbean", *Project documents*, No. 19 (LC/W.19), Santiago, Chile, June.

_____ (2003), "Estrategias nacionales para la sociedad de la información en América Latina y el Caribe" (LC/R.2109) [online] http://www.eclac.org/publicaciones/xml/5/13815/Estrategias.pdf.

_____ (2000), "Latin America and the Caribbean in the transition to a knowledge-based society. An agenda for public policy" (LC/L.1383), document prepared for the Regional Meeting on Information Technology for Development, Florianópolis, 20-21 June [online] http://www.eclac.org/ publicaciones/xml/2/4312/lcl1383i.pdf.

Guerra, Massiel and others (2008), *Digital Review 2007 of Latin America and the Caribbean: Progress and Challenges. Policies for Development with ICT* (LC/W.202), Santiago, Chile, Economic Commission for Latin America and the Caribbean (ECLAC)/United Nations Development Programme (UNDP)/Regional Dialogue on the Information Society (DIRSI)/International Development Research Centre (IDRC).

Hilbert, Martin and Jorge Katz (2003), *Building an Information Society: a Latin American and Caribbean Perspective* (LC/L.1845), Santiago, Chile, Economic Commission for Latin America and the Caribbean (ECLAC), January.

Lahera, Eugenio (2002), *Introducción a las políticas públicas*, Buenos Aires, Fondo de Cultura Económica.

Maurás, Marta and Mariano Ferrero (2007), "El Plan de Acción Regional eLAC2007: una "nueva" concertación regional para una sociedad de la información inclusiva", *Project documents*, No. 116 (LC/W.116), Santiago, Chile, Economic Commission for Latin America and the Caribbean (ECLAC).

OSILAC (Observatory for the Information Society in Latin America and the Caribbean) (2007), "Monitoring eLAC2007: progress and current state of development of Latin American and Caribbean information societies", *Project documents*, No. 151 (LC/W.151), Santiago, Chile, Economic Commission for Latin America and the Caribbean (ECLAC).

_____ (2005), "¿En qué situación se encuentra América Latina y el Caribe en relación con el Plan de Acción eLAC2007? Información disponible", *Project documents*, No. 32 (LC/W.32), Santiago, Chile, Economic Commission for Latin America and the Caribbean (ECLAC).

Tamayo Sáez, Manuel (1997), "El análisis de las políticas públicas", *La nueva administración pública*, Rafael Bañón y Ernesto Carrillo (comps.), Madrid, Alianza Editorial.

United Nations (2005), "United Nations Millennium Development Goals" [online] http://www.un.org/millennniumgoals/goals.html