

COM/CITEL RES. 133 (X-01)¹

**AGENDA FOR CONNECTIVITY IN THE AMERICAS AND
PLAN OF ACTION OF QUITO**

The X meeting of the Permanent Executive Committee of CITEL, COM/CITEL,

RECOGNIZING:

- a) That the Leaders of the nations of the Americas have drawn attention to the vital importance of connectivity during the 2001 Summit of the Americas in Quebec, by approving the “Declaration on Connectivity;” and
- b) That the Quebec City Action Plan further instruct the pertinent telecommunications authorities and regulatory agencies to work with regional and sub-regional organizations and agencies in the development and execution of a cooperative and collaborative program to support the Agenda for Connectivity in the Americas,

CONSIDERING:

- a) That a Group of Experts met in Quito, Ecuador, to prepare a draft Agenda and Action Plan for Connectivity in the Americas;
- b) That it is important for all Member States to have opportunity to examine and comment upon the Agenda and Action Plan, and
- c) That the International Telecommunication Union (ITU) is preparing the World Summit on the Information Society that needs to be taken into account by CITEL,

RESOLVES:

- 1. To approve the draft Agenda for Connectivity in the Americas and Plan of Action of Quito; and recommend that Members States implement it.
- 2. To create an Ad Hoc Group under the co-ordination of Mr. José Pileggi-Véliz from Ecuador to gather comments from CITEL Members and Associate Members, and to complete a final version of the Agenda for Connectivity in the Americas to be considered and acted upon by the III Assembly of CITEL, to be held in 2002.
- 3. That the Ad Hoc Group propose effective methods of working within CITEL and with other interested bodies to implement the Agenda for Connectivity; and propose an implementation scheme to the CITEL Assembly for its approval taking into account the preparation of the World Summit on the Information Society of the ITU.
- 4. That the implementation scheme include a proposal for a workshop for the Administrations and regulatory agencies of the region to be informed about concepts relevant to the Action Plan, and to discuss their participation in the development of National Connectivity Action Plans.

¹ COM/CITEL/doc. 655 rev.1 /01

5. That the implementation scheme include also plan to involve other regional and sub-regional organizations and agencies in the Americas to join with CITEL to further develop and implement the Agenda for Connectivity.

INSTRUCTS THE EXECUTIVE SECRETARY OF CITEL:

To distribute the document “Agenda for Connectivity in the Americas and Plan of Action of Quito” along with the text of this resolution to all Member States and associate members so that they will be aware of this opportunity to comment.

URGES THE CHAIRMAN OF COM/CITEL:

To inform the Summit Implementation Review Group (SIRG) of the progress made by CITEL in implementation of the directive from the Summit of the Americas.

ANNEX 1

**TERMS OF REFERENCE FOR THE
AD HOC GROUP ON THE AGENDA FOR CONNECTIVITY IN THE AMERICAS AND
PLAN OF ACTION OF QUITO**

The work of the Ad Hoc Group on the Agenda for Connectivity in the Americas shall be conducted respecting the following deadlines:

1. Receive all comments from Member States and Associate Members of CITEL not later than 15 January, 2002. Comments are to be submitted to the Ad Hoc group via electronic mail to Mr. Bill Graham (graham.bill@ic.gc.ca)
2. Circulate to all Member States a second draft of the Agenda for Connectivity in the Americas, considering all comments received, not later than 1 February, 2002.
3. Circulate to all Member States the following three proposals not later than 15 February, 2002:
 - a. A proposal for effective methods of working within CITEL and with other interested bodies to implement the Agenda for Connectivity in the Americas and Plan of Action of Quito;
 - b. A proposal for an implementation scheme to be submitted to the CITEL Assembly for its consideration; and
 - c. A proposal for a workshop for the Administrations and regulatory agencies of the region to be informed about concepts relevant to the Action Plan, and to discuss their participation in the development of National Connectivity Action Plans.

ANNEX 2

CITEL

AGENDA FOR CONNECTIVITY IN THE AMERICAS

PLAN OF ACTION OF QUITO

Meeting held in Quito, December 3-7, 2001
DRAFT

Executive Summary

The Heads of State and Government of the Americas, gathered at the Summit of the Americas held in Quebec City, in April 2001, recognized that an extraordinary technological revolution is now under way, one of profound social, cultural, political, and economic consequence, and that the region is entering a new economy and society defined by its vastly enhanced capacity to access knowledge and to improve the dissemination of information.

The Heads of State and Government expressed their firm conviction that promotion of an Agenda for Connectivity in the Americas, in the form of national agendas or strategies, would facilitate the integration of the Hemisphere into an increasingly knowledge-based society, which will provide the citizens of the Americas with an opportunity to develop and obtain knowledge so that they may profit fully from opportunities to strengthen democracy, generate prosperity, and fulfill their human potential.

In fulfillment of the Plan of Action of the Quebec Summit, signed by the Heads of State and Government, telecommunications authorities and the pertinent regulatory agencies were instructed to work with regional and subregional organizations and agencies to develop and execute, prior to the next Summit of the Americas, a cooperative and collaboration program to support an Agenda for Connectivity in the Americas.

To carry out the task mandated by the Heads of State and Government, the Inter-American Telecommunication Commission (CITEL) has coordinated the preparation of the document attached hereto, and invites other regional organizations to join forces with it in establishing an Agenda for Connectivity in the Americas.

The objectives of the attached document are:

- As part of a conceptual reference framework, to provide general guidelines facilitating the respective processes of assessment, design, implementation, evaluation, and integration of national Agendas for Connectivity.
- To indicate how important it is for connectivity agendas to be understood, conceived, and executed as broadly-conceived state policy.
- To suggest mechanisms that may contribute to ensuring the continuity of the Agendas, and to underscore the need for active and ongoing participation by representatives of civil society, the private and public sectors, and regional and international organizations in the life cycles of such agendas, that is, the assessment, design, implementation, evaluation, and integration phases.
- To underscore the urgency of constituting working teams at the highest possible level, under the guidance and direction of the respective governments, and with active participation by civil society and the private sector. To maintain the autonomy necessary for the successful design and execution of the respective agendas, such teams must be established as secretariats or national coordination offices.
- Given connectivity's "horizontal" nature and multisectoral application, it is suggested that such secretariats or national coordinating offices not be assigned or subordinate to any particular ministry, department, or agency. It is unnecessary to create new bureaucratic entities; these secretariats or national coordination offices should report directly to the head of state.

The process should be designed to see that all countries of the Americas develop statements setting out their vision of their own connectivity agendas and that they begin to implement them prior to the next Summit of the Americas.

In defining such a national vision, each country should establish dates, and objectives and goals that may realistically be achieved within that timeframe.

The first premise for the success of connectivity agendas is that they must be conceived and executed with the active and ongoing participation of society's fundamental players -- civil society, the private sector, and the respective governments -- and must be developed around three fundamental components: infrastructure or access, utilization of that infrastructure, and the quantity and quality of the information superhighway's content.

The second premise is that the design and implementation of a connectivity agenda must be guided by principles of equity and universality, that is, access for everyone everywhere, at a cost truly within the reach of most of the public.

The third premise is promotion of the use of infrastructure, and development of national and regional content to promote the countries' respective cultural identities, and encourage the use of all languages within each country, including indigenous languages, without excluding or restricting access to international content.

In developing the Agenda for Connectivity in the Americas, an assessment must be carried out that enables strategies, policies, and procedures to be defined, both those applying exclusively to each country and those for application in all, and whose results it is suggested are valid for all countries of the region in achieving an information and knowledge-based society.

It is proposed that this initiative be directed by an entity designated within each country to lead and coordinate the Agenda for Connectivity. The urgency is underscored of constituting working teams at the highest possible level, under the guidance and direction of the respective governments and with active participation by civil society and the private sector.

To that end, each country must develop its own measurement plan, adapted to national realities and ensuring, insofar as possible, a process of ongoing and regular analysis that enables it adequately to monitor the development of its plans of action for the Agenda for Connectivity.

The document attached hereto sets out general guidelines to be used in designing an assessment of the status of information and communication technologies, their application, utilization, and national impact. To that end, appropriate research must be developed to measure the coverage, access, and utilization of such technologies.

Said general assessment guidelines are grouped as follows:

- Information and communication technology (ICT) infrastructure available to civil society, the private sector, and government
- Utilization of ICT by civil society in education, health, employment, and in recreational and cultural activities; utilization of ICT by the private sector, in particular, for electronic commerce; and utilization of ICT by government for purposes such as its role as model user and driving force for initiatives, on-line government services and transactions, and electronic hiring

- Internet content for civil society, the private sector, and government

To implement the Agenda for Connectivity, the document proposes planning schemes, coordination mechanisms, and a plan of action for the execution of a series of coordinated strategies based on plans and programs designed to develop infrastructure, utilize ICT for community socioeconomic development, and make available important pertinent content for connectivity's three players: civil society, the private sector, and government.

Presented below are certain vital elements to be taken into account in addressing the challenge faced by all governments of the region in creating a modern regulatory framework that supports and sustains the development of the Agenda for Connectivity:

- Equitable, universal access to information
- Transparency
- A competitive ICT industry
- Effective civil society participation in the development of the regulatory framework
- Information protection mechanisms
- Training in the use of ICT services
- Protection the new information society's intellectual property
- Coordination of legislation governing the information and communications sectors

Also considered to be of the highest importance is how the Agenda for Connectivity will be financed. That connectivity is a national priority, and that the respective Agendas are state policy, must therefore be acknowledged in the development plans of the region's governments. It is essential that the importance assigned to connectivity is reflected in the design of the countries' respective macroeconomic policies and, in particular, in allocating public expenditure.

Creative project financing alternatives that benefit principally the Hemisphere's smallest economies must therefore be developed with the active participation of international financial institutions and the region's private sector.

Lastly, a proposal is presented for CITELE commitments to support effective implementation of the Agenda for Connectivity in the Americas in keeping with the mandate received from the Heads of State and Government of the Americas gathered in Quebec City at the Summit of the Americas of April 2001.

CITEL

AGENDA FOR CONNECTIVITY IN THE AMERICAS

AND

PLAN OF ACTION OF QUITO

Meeting held in Quito, December 3-7, 2001

DRAFT

CONTENTS

- 1. Background and justification**
 - 1.1 Objectives of this document**
- 2. Definition of an Agenda for Connectivity**
 - 2.1. Definition of connectivity**
 - 2.2. Definition of Agenda for Connectivity**
 - 2.3. Vision**
 - 2.4 Players**
 - 2.4. Components**
 - 2.5. Principles**
 - 2.6. Strategies**
- 3. Assessment**
 - 3.1. Inventory of national initiatives and assessment of country status**
 - 3.2. Infrastructure**
 - 3.2.1.Civil society**
 - 3.2.2.Private sector**
 - 3.2.3.Government**
 - 3.3. Utilization**
 - 3.3.1.Civil society**
 - 3.3.1.1. Education**
 - 3.3.1.2. Health**
 - 3.3.1.3. Employment**
 - 3.3.1.4. Recreation**
 - 3.3.1.5. Culture**
 - 3.3.2.Private sector**
 - 3.3.2.1. Electronic commerce**
 - 3.3.3.Government**
 - 3.4. Content**
 - 3.4.1.Civil society**
 - 3.4.2.Private sector**
 - 3.4.3.Government**
- 4. Plan of Action**
 - 4.1. Planning schemes and coordination mechanisms**
 - 4.2. Infrastructure**
 - 4.2.1.Civil society**
 - 4.2.2.Private sector**
 - 4.2.3.Government**
 - 4.3. Utilization**
 - 4.3.1.Civil society**
 - 4.3.1.1. Education**
 - 4.3.1.2. Health**
 - 4.3.1.3. Employment**
 - 4.3.1.4. Recreation**

- 4.3.1.5. Culture
- 4.3.2. Private sector
- 4.3.2.1. Electronic commerce
- 4.3.3. Government

- 4.4. Contents
 - 4.4.1. Civil society
 - 4.4.2. Private sector
 - 4.4.3. Government
- 4.5. Regulatory framework
- 4.6. Financing schemes

5. CITEI commitments

6. APPENDICES

- 6.1. Glossary
- 6.2. International initiatives
- 6.3. Checklists

AGENDA FOR CONNECTIVITY IN THE AMERICAS AND PLAN OF ACTION OF QUITO

1. Background and justification

The Heads of State and Government of the Americas, gathered at the Summit of the Americas held in Quebec City, in April 2001, recognized that an extraordinary technological revolution is now under way, one of profound social, cultural, political, and economic consequence, and that the region is entering a new economy and society defined by its vastly enhanced capacity to access knowledge and to improve the dissemination of information.

The Heads of State and Government expressed their firm conviction that promotion of an Agenda for Connectivity in the Americas, in the form of national agendas or strategies, would facilitate the integration of the Hemisphere into an increasingly knowledge-based society, which will provide the citizens of the Americas with an opportunity to develop and obtain knowledge so that they may profit fully from opportunities to strengthen democracy, generate prosperity, and fulfill their human potential.

In fulfillment of the Plan of Action of the Quebec Summit, signed by the Heads of State and Government, telecommunications authorities and the pertinent regulatory agencies were instructed to work with regional and subregional organizations and agencies to develop and execute, prior to the next Summit of the Americas, a cooperative and collaborative program to support an Agenda for Connectivity in the Americas.

To carry out the task mandated by the Heads of State and Government, the Inter-American Telecommunication Commission (CITEL) has coordinated the preparation of the document attached hereto, and invites other regional organizations to join forces with it in establishing an Agenda for Connectivity in the Americas.

1.1. Objectives of this document

In fulfillment of the general objectives set out at the Summit of the Americas held in Quebec City, in April 2001, and, in particular, in the document “Connecting the Americas,” signed by the Heads of State and Government of the 34 nations of the Hemisphere present at the Summit, this document’s objectives are:

- As part of a conceptual frame of reference, to provide general guidelines to facilitate the corresponding processes of assessment, design, implementation, evaluation, and integration of national connectivity agendas.
- To indicate how important it is for connectivity agendas to be understood, conceived, and executed as broadly-conceived national state policy.
- To suggest some mechanisms to contribute to ensuring the continuity of agendas, and to underscore the need for active ongoing participation by representatives of civil society, the private and public sectors, and regional and international organizations in the life cycles of such agendas, that is, the assessment, design, implementation, evaluation, and integration phases.

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www.americascanada.org/eventsummit/declarations/connect-e.asp

- To underscore the urgency of establishing working teams at the highest possible level, under the guidance and direction of the respective governments, and with active participation by civil society and the private sector. To maintain the autonomy necessary for the successful design and execution of the respective agendas, such teams must be established as secretariats or national coordination offices.
- Given connectivity's "horizontal" nature and multisectoral application, it is suggested that such secretariats or national coordinating offices not be assigned or subordinate to any particular ministry, department, or agency. It is unnecessary to create new bureaucratic entities; these secretariats or national coordination offices should report directly to the head of state.

2. Definition of an Agenda for Connectivity

2.1. Definition of connectivity

Connectivity is a society's internal capacity for communication and with its global environment through the use of telecommunications, information technologies, and what is produced by content industries, whose purpose is to evolve towards the information and knowledge-based society. Connectivity is the solution to the digital divide – or gap.

2.2. Definition of Agenda for Connectivity.

A series of interrelated strategies to enable full advantage to be taken of communications, information technologies, and content in the economic, social, cultural, and political development of a national community, with the ultimate aim of preparing it to evolve towards the information and knowledge-based society.

2.3. Vision

For all countries of the Americas to formulate a statement of their vision of their own Agendas for Connectivity, and for them to implement them prior to the next Summit of the Americas.

In formulating that national vision, each country must establish a target date and realistic goals to be attained within that timeframe.

2.4. Players

The Agendas for Connectivity must be conceived and executed with ongoing active participation by society's fundamental elements: civil society, private sector, and the respective governments. Participation by these players must be reflected in the entire life cycle of the connectivity process, that is, assessment, design, implementation, evaluation, and integration of the respective agendas.

2.5. Components

Infrastructure or access, utilization of that infrastructure, and the quantity and quality of the information superhighway's content are three components or areas inherent in connectivity. They may be defined as follows:

- Infrastructure: a combination of hardware, software, human resources, and telecommunications networks that facilitate access to digital information and services.
- Utilization: the added value of the use and application of digital information and services for the purpose of generating knowledge to enhance the population's quality of life.
- Content: the availability of pertinent quality digital information and services for the region's people and communities.

It should be noted that these three elements must be addressed both from a comprehensive point of view and by taking account of the needs and aspirations of connectivity's players.

2.6. Principles

The design and implementation of an Agenda for Connectivity must be guided by principles of equity and universality, that is, access for everyone everywhere, at a cost truly within the reach of most of the public.

In turn, utilization of infrastructure must be promoted and national and regional content must be developed to promote cultural identities, encourage the use of all languages within each country, including indigenous languages, without excluding or restricting access to international content.

2.7. Strategies

Linking the interests of the players, elements, and guiding principles must lead to the design and implementation of specific strategies that eventually produce on-line communities (e-communities), on-line companies (e-business), and on-line government (e-government) each of which, from its own perspective, addresses a wide range of national topics and priorities related to, *inter alia*, education, health, generation of employment, economic opportunities, democratic participation and protection of human rights, industrial development, particularly small and medium-size industry, commerce and services, tourism, the agricultural and export sectors, and recreation.

3. Assessment

In developing the Agenda for Connectivity in the Americas, an assessment must be carried out that enables strategies, policies, and procedures to be defined, both those applying exclusively to each country and those for application in all, and whose results it is suggested are valid for all countries of the region in achieving an information and knowledge-based society.

3.1. Inventory of national initiatives and assessment of country status

As has been established, there is agreement among governments regarding the need to develop national initiatives to facilitate the entry of countries into the information society for the principal purpose of stimulating socioeconomic development in general and, in particular, enhancing the quality of life of citizens. It has also been agreed to call these initiatives the Agenda for Connectivity in each country, which will be consolidated within the Agenda for Connectivity in the Americas.

Moreover, there are various initiatives within each country, at both the private and the public level, and at both central level and within the lower tiers which, in some cases, have not operated in coordination and of which the community is not even aware.

Considering, on the one hand, the sense of urgency felt about closing the digital gap by taking advantage of the opportunity provided by information and communications technologies and, on the other, the possibility of enhancing results by achieving coordinated and focused work by all those concerned, an inventory of national initiatives at the planning stage and at different levels of development must be made, to include their objectives, the institutions designing and supporting them, goals, strategies, and financing plans.

It is suggested that this initiative is implemented by an entity designated in each country to lead and coordinate the Agenda for Connectivity.

As detailed an assessment as possible must also be made showing each country's readiness for the information society. This study must be conducted at local level and with full autonomy, both in determining the model itself and in the information-gathering procedure.

There are various methods of reference for establishing the readiness of a country to build the information society, and the status of its effective Internet connection. Such methods may be consulted in Appendix 6.2.

What is important here is, once the importance is acknowledged of the development of an Agenda for Connectivity to promote the use of information technologies as support for the national growth and development, it becomes necessary to ascertain the status of development and use of information and communications technologies in the three key sectors of this new model of society: civil society, the private sector, and government.

To that end, each country must develop its own measurement plan, adapted to its national realities and ensuring, insofar as possible, a process of ongoing and regular analysis enabling it adequately to monitor the development of its plans of action related to the Agenda for Connectivity.

This chapter sets out general guidelines to be used in designing an assessment of the status of information and communication technologies, their application, utilization, and national impact. To that end, appropriate research must be developed to measure the coverage, access, and utilization of such technologies.

It is acknowledged that the scope and scale of the proposed elements to be included in the assessment might discourage undertaking work on the Agenda for Connectivity. However, it must be evident that in an ideal world, governments would have all necessary information, which is not usually the case. It must therefore be clear that the recommendations in this chapter relate to assessment with ideal coverage, but not the coverage strictly necessary at the outset.

Finally, it should be noted that the countries have taken the road towards connectivity and learned the lesson of the importance of a large-scale approach and of taking the first step.

3.2. Infrastructure

The objective is to assess the installed and available resources needed to implement national Agendas for Connectivity.

The infrastructure assessment will focus on civil society, the private sector, and government.

3.2.1.Civil society

To assess the technological infrastructure needed by civil society in the framework of the Agenda for Connectivity, it is suggested that the following aspects be taken into account:

- Assessment of human resources for connectivity.

Under this item, an attempt will be made to gather, insofar as possible, information on the number of experts in telecommunications, information technologies, computer science, multimedia, and content in a given country, and data on the national student population, and curricula and programs of study in these areas, and those for user training. This may possibly be expanded to include more specific and detailed points, as required. This part of the assessment will enable the quantification of the capacity of response of specialized human resources and of the institutions to which they belong to implement the content of the Agenda for Connectivity.

- Assessment of telecommunications

As telecommunications is one of the main vehicles for connectivity, various parameters must be studied in connection with its current status at the national level. Among the most important aspects to be assessed in this section are:

- Teledensity in lines per 100 inhabitants
- Average number of telephone lines per household
- Geographic distribution of telephone lines
- Number of Internet service providers
- Study of national wireless capacity, installed or available, that may be used to bring connectivity to rural or remote areas to satisfy the requirements of civil society
- Existing wide band networks or, where none yet exist, narrow band networks, which may serve to support the development of civil society connectivity
- Universal service and universal access programs or funds that may support the initiation of the connectivity development within the country
- Alternative low-cost terminal equipment and features such as microcomputers to reduce connectivity costs for civil society
- Any other items considered necessary to ensure fulfillment of the objectives of the Agenda for Connectivity

This part of the assessment will provide elements to evaluate the extent to which current telecommunications infrastructure is able to meet the requirements of the Agenda for Connectivity, and how it must evolve to improve its capacity to do so.

- Assessment of information technologies and computer science

In this case, owing to the difficulty likely to be encountered in obtaining this information, assessment efforts may be limited to four types of establishment: educational institutions, health centers, libraries, and, where they exist, community Internet access centers. Some of the most pertinent points to be assessed are given below:

- Estimation of the number of PCs available in the country, in accordance with the information available
- Estimation of the number of PCs with Internet connection nationwide
- Number of PCs with Internet connection available to civil society in the community Internet access centers (telecenters), educational and health centers, libraries, and other establishments
- Number of PCs without Internet connection in the establishments listed in the preceding paragraph, but that might be connected to the Internet, to be made available to civil society
- Any other items considered necessary to ensure fulfillment of the objectives of the Agenda for Connectivity

- Assessment of available access

One of the priority aspects of infrastructure for civil society connectivity is the availability of access on a universal, equitable, and affordable basis, without negatively affecting the quality of services for the general public nationwide. This need is addressed basically through community access points, which provide essential telecommunications, applications, and content services to the public. Access points provide a viable solution for all sorts of communities. The current status of this civil society connectivity alternative must therefore be assessed.

Several points to be carried out to cover this portion of the assessment are suggested below:

- Inventory of community access point available capacity in the country
- Number, type, capacity, and geographic location of available access points
- Determination of the number of access points by type of entity operating and maintaining them (government, company, or educational or social institution)
- Any other points deemed advisable to assess in this connection

3.2.2.Private sector

This part of the assessment is intended essentially to determine the possible extent of private sector contribution to the Agenda for Connectivity. As stated above, the private sector is one of the most important players in implementing an Agenda for Connectivity as, in addition to serving as the force driving modern economies, it has a capacity to create and develop infrastructure for connectivity. Minimally, the items to be covered are:

- Number of telecommunications service operators, distinguishing between wired, wireless, cable, and satellite, and their respective coverage
- Number of firms marketing hardware and software and their sales points within the country
- Private sector plans related to items on the Agenda for Connectivity enabling the extent of their contribution to its implementation to be evaluated
- Average teledensity of telephone lines for the sector, wired and wireless, and high performance links, broken down by business subsector as a proportion of national teledensity
- Number of computers and data networks in the sector, and by business subsector
- Number of PCs with Internet connection in the sector, and by business subsector
- Other aspects of private sector contribution to connectivity

3.2.3.Government

Government plays three parts in implementing the Agenda for Connectivity: it contributes, with resources and exercise of its authority, to connectivity's success; it must become a model user of ICTs; and it is responsible for directing and supervising the Agenda.

An assessment of technological infrastructure in the government sector in the framework of the Agenda for Connectivity must minimally cover the following basic items:

- Average teledensity in lines within the different government agencies. The study must be conducted at all levels of government.
- Number of computers in each government agency, at its different levels. This must also be broken down by government area, as necessary and feasible.
- Number of PCs installed at the national level at each government level. To be broken down by government area.
- Number of PCs with Internet connection at the different government levels and various administration areas.
- Government communications networks and their features.
- Any other aspects deemed appropriate in this connection.

3.3. Utilization

3.3.1. Civil society.

3.3.1.1. Education

One of the main features of the new society is that it encourages life-long learning for its members. This aspect sets the new society apart; in the past, education was confined to a clearly defined part of persons' lives.

As we are discussing new technologies that promote the development of human potential, training must be viewed from two angles: its capacity to train individuals to use ICTs adequately to develop their own potential, and its capacity to use ICTs for educational purposes. In other words, this means not only using ICTs, but also learning to seek information actively via the Internet.

Consideration must also be given to education in a broader sense: formal education, including activities carried out in school, college, or university, non-formal education, including all aspects of job retraining or education for work, and other types of education taking place outside formal classrooms, and lastly, processes designed to create a national culture of ICT use, which show individuals the potential of the use of these technologies for their own development.

To make a full assessment of country's status in connection with these processes of providing citizens with the skills necessary to make appropriate use of ICTs, and of the level of use of these new technologies in educational processes, it is suggested that the following items be studied, in addition to any others deemed appropriate:

- Percentage of schools, colleges, and universities with teaching staff trained in ICT and Internet use
- Average percentage of teachers in schools, colleges, and universities trained in ICT and Internet use
- Percentage of schools, colleges, and universities providing tools to teachers to produce and make educational content available to their students via the Internet
- Percentage of schools, colleges, and universities providing tools to teachers to offer and administer classes that utilize ICTs and the Internet
- Percentage of institutions with ICT-based curricula
- Number and percentage of virtual education programs within schools, colleges, and universities
- Percentage of schools, colleges, and universities offering regular courses to their students for the development of ICT and Internet skills
- Number of institutions providing non-formal education that offer regular courses to students for the development of ICT and Internet skills
- Installed capacity within non-formal educational institutions in relation to the economically-active population in large, medium-sized, and small cities

- Number of national institutions and programs devoted to research and development of technological applications for the education-learning processes
- Number and subject area of public Web portals or sites with tools for content production and with content on the country's curricula and study programs

3.3.1.2. Health

One of the items on the Agenda for Connectivity of greatest importance to society is the implementation of mass telemedicine services in the interest of public health. Technological convergence has gradually enabled affordable services to be made available, which has the potential to revolutionize medicine. Although this is the application most slowly becoming viable as a service, telemedicine is now beginning to show modest, but evident, results in many countries. One such result is the possibility of decentralizing health services, and expanding their coverage to populations that once did not have access to them because they lived in remote areas, where medical staff and facilities were unavailable.

One of the services of the information and knowledge-based society of greatest social importance is known as interactive telehealth.

This is the use, to the greatest extent possible, of new technologies in national public health care through multiple applications, including diagnosis, teleconsultation, teleintervention by specialists, remote interactive management of clinical records and other patient information, database administration of equipment, facilities, and medications, medical training, and general administration of services.

Although it has been noted that in some countries telemedicine has thus far been assigned secondary importance as opposed to the development of distance learning, telemedicine is perhaps the second application to generate multiple public services.

In countries most evolved towards the information and knowledge-based society, telemedicine has been identified as one of the factors essential to attaining high quality public health care services, in particular, care for nation's community of senior citizens.

It is a fact that health services in most countries of the region are concentrated in the main urban areas, and that there are far fewer in geographic areas of social concern. The concentration of specialists and facilities and advanced medical equipment is particularly marked. This represents a profound urban-rural imbalance in terms of availability, quality, and density of medical care. Such imbalances are even marked within large cities between the developed districts and the peripheral areas, and between one city and another.

The assessment of national status of development of connectivity in the health area should include the following items:

- Total number of health establishments. Studies should be broken down by metropolitan, urban, suburban, and rural areas.

- Total number of health establishments with Internet connection. Studies should give the same details as those mentioned above.
- Number of health centers with databases to be used by employees to support the dissemination of telemedicine.
- On-line clinical, hospital management, and health center information systems.
- Publicly-available telehealth information services.
- Number of existing telemedicine service centers.
- Characteristics of telehealth-based health services decentralization programs.
- Any other items deemed appropriate to assess.

3.3.1.3. Employment

The potentially economically-active population and, in particular, that part of the population without access to the labor market or with only partial access owing to unemployment, underemployment, age, health, or social status urgently requires the support of connectivity to improve or resolve its situation. Facilitation and streamlining of the interface between those seeking and those offering personal services is, without doubt, one of connectivity's most important missions. The Agenda for Connectivity must include an assessment to focus its efforts in this area.

An assessment of the status of the labor sector included on the Agenda for Connectivity must take account, *inter alia*, of:

- Data on the labor market and the economically-active population
- Data on the population with disabilities or with problems of displacement that is potentially economically-active
- Data on senior citizens wishing to work
- Existence and characteristics of private or government on-line systems to provide employment services
- Existence of national public and private sector telecommuting systems
- Other aspects of employment that would benefit from application of an Agenda for Connectivity

3.3.1.4. Recreation

Utilization of the Internet to access recreational information to some extent demonstrates a society's maturity in accessing goods and services via the new channel, the Internet, whose suppliers for the most part are the community and the private sector and, in some cases, the government. In this area, it is recommended that the following items should be included in the assessment:

- Number of national Internet sites that focus on recreational information and/or services
- Percentage of national recreational entities, agents, events, and projects promoted via the Internet
- Number of different users regularly accessing each of these sites
- Percentage of recreational communities, real and virtual, utilizing the Internet as a means of communication among themselves and with other groups at the national or international level

3.3.1.5. Culture

An important aspect of the assessment of a country's readiness with respect to ICT use is the cultural information aspect. The following items, among others, are considered appropriate for consideration in this area:

- Is there national policy to promote computerization, dissemination, and mass access to the national cultural heritage via the Internet?
- Number of national Internet sites focusing on culture
- Percentage of national cultural entities, agents, events, and projects promoted via the Internet
- Percentage of real and virtual communities offering cultural information via the Internet
- Percentage of museums, monuments, and/or national treasures promoted via the Internet
- Number of different regular users accessing each of these sites
- Percentage of indigenous communities utilizing ICTs and the Internet as a means of communication among themselves and with other groups or governments at different national or international levels.

3.3.2. Private sector

3.3.2.1. Electronic commerce

Electronic commerce is now established as a key factor in the development of the information society, and as a fundamental economic force driving the need for connectivity. The ongoing growth of the Internet continues to fuel the expansion of electronic commerce. At the same time, the globalization of markets and trade opens new opportunities, extends business' ability to reach new markets, and creates new challenges for governments. Through connectivity, these benefits can extend far beyond the group of large companies, allowing small and medium-sized enterprises, and even individuals to sell products and services in a previously-unimaginable global marketplace. New communities of interest can be created, allowing users of native languages and other previously-marginalized communities to communicate and do business with one another.

Electronic commerce is more than just selling consumer goods on the Internet. It is the transformation of business systems and processes, and the creation of a networked economy. Networks are likely to play as important a transformative role in the economies of the current century as railways and electricity did in the 19th and 20th centuries. The “new” economy is essentially and primarily a “networked economy,” where the capacity to deploy and use electronic networks will determine absolutely the competitive positions of firms, industries and national economies. Businesses of all sizes must assess their readiness to engage in electronic commerce, by conducting an e-readiness assessment.

In parallel, the continued development of new access technologies in conjunction with the creation of more, and more varied, services emphasize the increased need for government to create an e-commerce friendly environment to benefit both business and users – a demand which forms an essential part of the connectivity agenda. Governments must also analyze how prepared they are to undertake this task.

Business e-readiness assessment

Because the decision to engage in electronic commerce is fundamental for anyone involved in business, there are many factors that should be considered before beginning. In addition to ensuring that a business has adequate access to infrastructure, management must determine at what level they want to engage in electronic commerce. An e-readiness assessment will help to accomplish that goal. Many resources are available on-line at no cost to help business with self-assessment, complementing the individualized services available from governments and business experts. As an example to suggest some of the components of an e-readiness assessment, a business intending to offer its goods or services on-line should ask itself questions such as the following.

About your company and your customers:

A company’s current structure, customer base, and partnership networks will influence its decision-making about how to approach the transition to e-business. The items below ask you about some of these critical factors.

- Do you understand your current customers? Do they come from different sectors, or are they primarily individuals? Are they usually one-time or repeat customers? Are they primarily within 1, 2 or more time zones?
- Do you and your present/target customers use the Internet, and how? (e-mail only? Research? Promotion? Intranet? Advanced users of interactive services?)
- Do you have adequate management systems already in place? For example, a quality assurance system? Adequate record keeping? A data security system? Performance tracking systems?
- Do you normally work with partners or not? Are your partners also e-ready?

About your company’s strategic goals:

Any e-business strategy needs to be developed in the context of a firm’s overall corporate objectives. E-business is not simply a technical or programming issue. The items below suggest how e-business will need to fit into an overall strategy.

- What is your corporate strategy? Is it primarily to increase revenues, expand your market share and expand your customer base? Is it to improve service, decrease time to market and expand your reach? Do you have the capacity to achieve your goal?
- What is your corporate structure? Are decisions made by a CEO or by a team? Who makes e-business and technology decisions? Do you have the flexibility to manage a change to electronic commerce?
- Do you already use the Internet to track changes in your business sector? Your customers? New market opportunities? Follow strategic trends?
- Do you understand your core processes, and those of your customers?

About how do you want to enter the world of e-commerce?

- E-procurement: The primary financial gains from the Internet have come from e-procurement savings rather than from sales. You should consider whether it is feasible for your business to procure the goods and services it needs on-line. Are your present suppliers able to accommodate e-procurement? What new sources of supply would be available to you? Could they meet your needs as well as your present suppliers?
- On-line presence: Developing a website or other online presence allows potential customers to use it to evaluate your capabilities and whether you could meet their needs. You should think about whether your website offers useful information. Can you keep it up-to-date? Is it suitable for your customers' access technology (slow modems or broadband connections)? Can you respond to questions as quickly as your on-line customers expect? Are you offering an appropriate level of interactivity?
- Integrated operations and service delivery: Because e-commerce takes place in a digital multi-user environment, there are often a number of procedural changes that a firm needs to make in order to be competitive in e-business. One of the major benefits customers seek from e-business solutions is a seamless interface with your company. You need to consider whether business processes can be standardized or customized to meet customers' expectations as well as their organizational and technological needs.
- Expanding the boundaries of your business: The main challenge facing companies moving to an e-business environment is the need to extend their boundaries and include external partners in order to meet customers' needs. You will need to assess your readiness and willingness to work across multiple time zones. Are you prepared to work with partners and customers outside your country? In a different language? In developed and developing countries? Do you want to work only with partners you chose, or in a more open environment? Are you prepared to outsource some of your processes? Do you have privacy, intellectual property and security procedures adequate to your needs? Those of your partners and customers?

Some examples of on-line guidance and tools for assessing e-readiness for companies are provided in [APPENDIX XXX](#).

3.3.3. Government.

Government e-readiness assessment

There is broad international agreement about the role of governments in promoting electronic commerce. The following list summarizes the key points that should be considered by governments in our region. The Action Plan in section 4.3.2 describes areas where concrete action will be most useful.

Governments need to act to build trust in the digital marketplace, in much the same way as they have traditionally acted to provide surety in the physical marketplace. Specifically, governments should assess their policies on privacy, security, and consumer protection to determine whether their existing protection is sufficient, or whether new action will be needed.

Because electronic commerce blurs boundaries that citizens have become accustomed to in the field of commerce, governments may need to take steps to clarify market rules in the new environment. Some key items requiring attention include ensuring that the taxation regime does not penalize users of e-commerce (tax neutrality), recognition of the legal standing of electronic documents, and guaranteeing intellectual property rights in the challenging digital environment. Each government of the region should consider whether its regime is adequate to promotion of e-commerce.

Finally, governments can help to encourage market development. Governments should review whether they are acting as a model user of electronic commerce, for example by engaging in e-procurement. They should examine their policy framework to ensure that they are encouraging small and medium-sized businesses to adopt electronic commerce. And in addition, when looking at other aspects of their domestic action plans for connectivity, governments need to ensure that strategies to provide access for the public take into account the interests of consumers and micro-enterprise in the design of access strategies such as telecenters or other community access points.

Governments can also play a vital role in market development by providing targeted information to business which will improve their understanding of their market and help them to become more competitive. Two examples that have proven effective are market information systems and business matchmaking services. Market information systems can inform participants in a sector of market conditions, current prices, export opportunities. This information can both lead to more profitable sales, and also draw businesses (especially SMEs and primary producers) to start to take part in electronic commerce. Business matchmaking services can go beyond the provision of information to allow business partnerships to develop on line to the benefit of all partners. Governments should take advantage of opportunities to find and exchange information on best practices and innovative offerings to facilitate the growth of electronic commerce.

Electronic government is often defined as the on-line delivery of information and services – including the provision of opportunities for citizens to express their views on policy and program decisions. Most often the driver for a government on-line initiative is the desire to improve the quality of service delivery and raise the level of users'² satisfaction with

² The word “user” in this paper to refer to someone who uses the services of a national government. Most commonly, the user will be a citizen of the country in question, but a user may also be a person outside the country, or a representative of a business inside or outside the country, seeking information or engaged in a voluntary or required transaction with the government.

government services. But as in the case for businesses moving to electronic commerce, governments taking their business on line need to assess whether they are prepared for the task. Governments which have begun to go on line have often seen the task as having three important elements: becoming a model user as a means of encouraging other sectors of society to become connected; putting government information, transactions and services on line; and developing on-line procurement systems.

Governments are well placed to become model users. Their Internet presence can be showcases of the potential and benefits of connectivity, providing an inspiration to others. To achieve these goals, they need to undertake a rigorous process similar to the one described in the previous section for businesses doing an e-readiness assessment. To take one example, they need to fully understand their businesses and their customers. For governments, their “customers” are certainly citizens and businesses in their own countries, but they can also be those outside the country who want or need to access information or services from the government. These groups may want different things from a government. They may want to be able to interact with government in different ways, they may want to be able to customize their interactions. It is important for a government to diagnose their products and processes with a view to meeting as many demands as possible. It is probable that the best approach ultimately will be to continue providing traditional face-to-face service, as well as telephone access through tele-centers, while encouraging citizens to view on-line service delivery as the “channel of choice.”

The government’s diagnosis should be undertaken at the widest possible level, to try to identify where the complex can be simplified, where similar systems can be combined, and where it might be possible to share common infrastructure among parts of government. Such a thorough exercise can result not only in finding better ways to interact with citizens, but also in identifying possibilities for savings. A careful and thorough approach in the analytical and planning stage is essential. When other sectors of the society are trying to come to grips with the concept of connectivity being promoted by their government, it is most often to government they will look for an example.

In going on-line, governments should analyze what information, services and transactions are the best candidates for providing improved access to users. If governments already have a web presence, they should analyze how it is used, whether it is designed to accommodate users with low-speed connections, whether their web pages are easy to use, and whether there could be improvements by combining individual departments’ and agencies’ web sites into more consistent government portals. This information, combined with other information gathered from existing business units, should be analyzed to identify the most commonly used information and transactions. Those should logically be the first targets for going on line.

The effort to put government information, services and transactions on line in the way best suited to users can run into problems created by organizational stovepipes in the government, and into long-standing rivalries. These potential dangers should motivate a further examination of government structure to determine where best to locate the responsibility for putting government on-line, and how best to provide the high level of leadership and authority which will be needed to overcome rigidity. It is an absolute prerequisite for success that the highest level of leadership is required to succeed – starting from the head of state if possible.

A key application for many governments has been developing an effective e-procurement mechanism: in effect, to develop e-commerce within the government sector. This central function of government can be particularly useful for encouraging expanded connectivity in the businesses community. It can be particularly beneficial to SMEs by creating new levels of transparency in the procurement process. Opening the procurement system to all businesses in the economy often stimulates a rapid up-take of the use of ICTs, and expanded e-commerce capability among SMEs which translates into a more dynamic business environment.

Making a move to e-procurement can often be a first high profile step for a national government. It can be especially useful at an early stage, because it will help to develop a hands-on understanding of the difficulties businesses and customers face with e-commerce. It also provides direct experience useful in adapting the regime which governs e-commerce – for example, the need for security, privacy, and a supportive market framework. Once again, government can use many of the same techniques described in the section on electronic commerce to diagnose requirements, but with the added advantage of being able to test the effectiveness of its actions internally to government.

3.4. Content

Content is one of the key factors in producing the evolution of national civil, government, and business communities towards the information and knowledge-based society. Content is the “payload” of communications networks. For the general public, and the business and government communities to be able to obtain the benefits of that evolution, they must be provided with the essence of communication – content – in the language spoken and understood by that population. In developing the Agenda for Connectivity, this is one of the most important items to be addressed. In most countries of the Americas, it is also important to include a broad program to promote the development of interactive multimedia content in the indigenous languages of each country.

Content industries, also known as “culture industries,” interact intensively with other business subsectors, and it is thus advisable to study these relationships in the national and international context in order to chart the course of their development.

An assessment of content in the framework of the Agenda for Connectivity will address minimally the following topics:

- Education
- Dissemination of culture
- Mass media
- Entertainment
- Government communication
- Expression of views

- Information services
- Advertising

The assessment of content would include the following points in connection with civil society, and the private and public sectors:

3.4.1.Civil society

- Communities and organizations representing civil society in the country
- Assessment of which topics are of importance and pertinence to civil society organizations and communities
- Organizations producing on-line content for their own use or for dissemination to the rest of society
- Categories of content needed in civil society communities or organizations
- Access by civil society to technological tools for the production and use of content
- Status of national human resources in this area
- Study of the proportion of national content in relation to general content available in the country
- Problems of illegal, inappropriate, or unethical content

3.4.2.Private sector

- Companies established in the country involved in the production of Internet content (e.g.: mass communications and entertainment media, companies operating via the Internet, the publishing industry, multimedia content, etc.)
- Assessment of the extent of commercial content supply in the country, broken down by the categories listed above
- Proportion of content of national origin marketed in the country
- Private sector plans for the promotion and expansion of the national content market
- Status of financing for this industry
- Growth prospects. Study of strengths and weaknesses
- Any other aspects considered important for purposes of this assessment

3.4.3.Government

- Government offices with an Internet presence. Distinguish by government level and area
- Offices of the different government levels and areas that produce on-line content in the categories mentioned above
- Content production, management, and distribution for databases on state services
- Production and distribution of pertinent content for sufficient timely and appropriate public information
- Gathering, processing, and proper handling of information obtained from feedback from the public
- Production of educational and cultural content
- Government promotional activity for national cultural industries and the training of the corresponding human resources
- Any other aspects considered important in attaining the objectives of this assessment

4. Plan of Action

4.1. Planning schemes and coordination mechanisms

As mentioned in Section 2.4, in implementing the Agenda for Connectivity within a country, the essential players are civil society, and the public and private sectors, possibly with the support of one or more international organizations.

A forum for discussion and agreement must thus be established in which the aforementioned players may participate to define policies, priorities, strategies, and plans of action, and to nominate a high-level government entity to coordinate such activities and ensure that they are carried out in the short, medium, and long-term.

Within the government, a planning, coordination, and activity financing process must also be defined, involving not only the responsible party at high government level, but also the entities with responsibility for defining economic policy and budgetary allocation at the central and regional levels.

Such aspects are definitive in the process of planning and executing a plan of action for the Agenda for Connectivity, which must cover strategies based on programs and projects for an estimated period of at least ten years. This plan of action must be based on the following aspects:

- Integration and unification of existing efforts
- Analysis and adoption of the best pertinent national and international practices, adapted to each country's reality
- Creation and reinforcement of alliances with all national sectors that may be able to contribute to attaining specific results
- Consolidation of a dynamic and evolving process of defining, redefining, implementing, executing, and controlling interrelated strategies based on a series of policies, programs, and projects that enable the objectives set to be attained. There must be a party with responsibility for the execution of each objective within public sector agencies, private institutions, or organizations representing the community
- Nomination of the agency to coordinate the Agenda for Connectivity and to promote its explicit dissemination within the country

The entity with responsibility for coordinating the Agenda for Connectivity must direct its activities so as to optimize the technological, financial, human, and legal resources necessary to execute the projects described above. Such coordination must involve the following steps:

- Nomination and official establishment of the agency to coordinate the Agenda for Connectivity
- Nationwide convening authority
- Organizational structure, mandate, authority, and the necessary budgetary resources for the successful performance of its functions
- Community and public and private sector participation
- Long-term continuity

Lastly, this entity should promote the necessary adjustment of the legislative and regulatory framework for proper development of the national Agenda for Connectivity. To that end, it should interact and coordinate joint activities with the corresponding authorities.

4.2. Infrastructure

The Agenda for Connectivity's plan of action for infrastructure is a central document for the development of this highly important initiative and is perhaps the step in the national connectivity process most requiring participation by the private sector and regulatory bodies for implementation.

This stage of planning national connectivity will involve of the following basic steps, which it is recommended be carried out entirely by the entity with responsibility for the Agenda for Connectivity in the countries of the Americas:

- Establishment, under the direction of the agency coordinating the Agenda for Connectivity, a high-level working group, comprising representatives of civil society, the private sector, and government, to study the assessment's results and determine the details of programs and projects on the make-up and design of the infrastructure to support the Agenda for Connectivity. The working group would address infrastructure-related topics by dividing them into four subgroups:
 - Telecommunications
 - Information technologies and computer science
 - Human resources
- Determination within the working group of the infrastructure strategy for connectivity in the short, medium, and long term. Care must be taken here. The first version should be completed and published as soon as possible after the group has been established, and later versions will be generated if necessary to promote or redirect national connectivity activities.
- Study, by the three sectors represented in the high-level working group of legislation, rules, and regulations in force governing the operation of telecommunications, computer science, information technology applications (e.g.: electronic commerce, distance education, or telemedicine), and access and utilization of ICTs to determine their present and future pertinence so as to generate the corresponding recommendations to authorities. This task must be programmed at the outset of any activities carried out by the entity for the Agenda for Connectivity and should be viewed as a task to be carried out on a regular basis.
- If deemed necessary, establishment by the telecommunications regulatory agencies, with private sector support, of programs and universal service and access funds to promote evolution towards connectivity in the country. This must take place during the first effective year of the Agenda for Connectivity.
- Negotiation of the agreements necessary for companies involved in the transmission, conveyance, storage, and distribution of information fully to fulfill, in a timely manner, their national coverage commitments, so that teledensity objectives are met, thereby extending connectivity-related services nationwide. A first joint review of those

commitments would be undertaken immediately after the launch of the connectivity agenda within the country, and subsequent reviews would be made each year.

- Study of the national financial model for connectivity access costs and attempt to rationalize costs through specific activities and incentives given by the state to private individuals
- Design of attractive telecommunications rate schedules to promote mass access to the Internet and to facilitate use of ICTs and their applications and services in establishments of priority interest to society, such as schools, libraries, hospitals, small and medium-size business incubators
- Determination of when connectivity processes will begin in the country, multiplier points for mass access to connectivity within the country (schools, government offices, post offices, barracks, etc.) and programming of their implementation. Subsequently, taking steps to see that resources are allocated to expand the initial network for mass access to services by making it as sophisticated as possible with future investment in telecenters built specifically for this purpose
- Development by the three sectors involved in the national connectivity process of viable and timely installation of advanced infrastructure for the country, such as wide band networks and network access points (NAP)
- When the extent of increased use of technology and the sustainability of the connectivity infrastructure installed and maturity of mass utilization so justify, a more wide-ranging project should be executed to provide the country with “regional networks” to incorporate many telecenters and access points into high performance communications nodes in terms of broad band, complexity of services, and ease of access. This larger-scale activity should be approached by determining the infrastructure strategy and will constitute one of the most ambitious goals from the point of view of technology, maturity of utilization, and quality and scope of services for the Agenda for Connectivity.
- Utilization of the idle capacity of large public telecommunications networks to expand the geographic coverage and services of the Agenda for Connectivity. This may possibly involve careful planning of the interconnections necessary to optimize utilization of these communications resources. This activity should begin immediately after the Agenda for Connectivity is launched.
- Promotion, from the time of introduction of new technologies, of access to connectivity, with private sector participation. This activity must be carried out within a transparent competitive scheme.
- Study of the appropriateness of opening local loops to accelerate connectivity processes in the country
- Promotion by the state of ongoing expansion and renewal of national connectivity infrastructure by rational offering of incentives to firms and productive entities involved. This will result from responsible study within the working group described herein and from decisions taken by any senior government officials involved. This system of incentives will be reviewed at the end of each fiscal period.

- Increasing on an ongoing basis the density of the national information technology fleet and updating it regularly with a view to connectivity in a joint effort by the three sectors with responsibility for national connectivity. This activity commences with establishment of the Agenda for Connectivity.
- Ongoing guarantee of legal certainty by the state to companies offering products and services related to connectivity infrastructure so that they may increase investment and expand their businesses to benefit the development of connectivity through proper operation of a transparent competitive system on the corresponding markets
- Coordination and promotion, with pertinent participation by the directly-involved private sector, of broader marketing and distribution of products and services facilitating connectivity in the country, especially in less served areas.
- Establishment in the short term of an IT equipment rehabilitation and modernization program to meet connectivity equipment requirements of disadvantaged entities and areas.
- Study and, if appropriate, implementation as soon as possible of a program to finance PCs or terminal equipment for Internet access for communities where this is justified. This program might be the result of a joint private sector/government effort.
- Promotion of training of human resources specialized in infrastructure-related technological disciplines necessary for connectivity. The corresponding planning and programming will be carried out as soon as possible after the launch of the Agenda for Connectivity, and this activity will be evaluated each year.
- Any other activities deemed necessary for the development of connectivity in connection with infrastructure.

4.3. Utilization

4.3.1. Civil society

4.3.1.1. Education

Plans of action to be developed in the education area must be designed to address three existing problems: inequity of access to the education system, poor quality, and lack of standardization of educational content and teaching methods for citizens in different geographical areas and regions within countries.

This then implies fulfilling three basic objectives in this area: first, ensuring universal and ongoing access to education in a context of equal opportunity to obtain knowledge via high quality education processes that are standardized for all citizens; secondly, skill development for citizens in active use of ICTs for their own benefit; and, third, creation of a culture for and awareness of the need to be involved in life-long learning, making appropriate use of ICTs.

To address this challenge effectively, clear and specific strategies must be developed in all countries, based on regional structures, with the aim of ensuring

that all citizens have the knowledge necessary to live, work, and develop their potential in the new knowledge-based society, while understanding that the use of ICTs and, in particular, Internet access, are not luxuries, but tools and vehicles for mass access to high quality education.

For their part, the lead educational entities in the different countries should design and implement a package of national standards to support the new learning environments for teachers and students, with appropriate use of ICTs in the classroom, their support for curricula and study programs, and the establishment of goals and procedures for evaluating teachers and students in the use and mastery of technology, with practical performance indicators as a priority element to assess the quality of administration of educational establishments.

This process must be accompanied by guidelines, specimen curricula, and practical exercises for the various subjects studied by students in each grade. For this process to be conducted successfully, this activity must be carried out as a cooperative effort among the countries for their common benefit.

To achieve mass access and improvement of the quality of education through appropriate use of ICTs, each country must formulate a plan of action to be implemented over a minimum of ten (10) years, with seven (7) goals, which must have staggered target dates for the specific stages:

Goal 1: For all students and teachers to have access to ICTs in their classrooms, schools, libraries, communities, and homes.

Goal 2: For all teachers to utilize ICTs effectively in order to assist students to achieve adequate educational levels.

Goal 3: For all students to acquire skills and abilities in the use of ICTs during their formal education, starting with their first educational level.

Goal 4: For ongoing investment of resources to be made in research and development on technological applications for teaching-learning processes for the purpose of studying those developed around the world and to determine the advisability of adapting them and incorporating them into the local education process or developing specific local applications and making them available to each country's educational community, in keeping with their needs.

Research into education technologies should cover aspects such as:

- Local characteristics and each community's education system
- Dependence of local content on the technology itself
- Adjustment costs
- Efforts made to acquire and implement such technologies in each community's educational system
- Any others considered pertinent

Goal 5: For educational content and tools to be developed and made available on the Internet that may be used to support the transformation and evolution of the education system and to support national programs to combat

unemployment and underemployment. To supplement local effort, educational content developed in other countries should be included and/or referred to in this process, which has been translated into the students' mother tongues. In addition, a public awareness campaign should be conducted so that the educational community comprising students, teachers, and parents may acquire knowledge of the tools made available to them, learn to utilize them, and fully adopt their use.

Goal 6: For on-line training systems, and systems to provide equipment and access to training to be designed so that the unemployed or underemployed, housewives, and persons with any type of disability may be trained and integrated into work. Also to be included are retired persons or senior citizens seeking to return to work, in this case, taking steps to ensure that their health and personal safety is protected.

Goal 7: For education and self-instruction requirements to be included in the program for ICT application development.

4.3.1.2. Health

An Agenda for Connectivity in the health area should include government agencies at all levels, private institutions, and the activities of self-employed professionals.

In keeping with the foregoing, the following action is recommended to the governments of the region's countries:

- Establishment of a high-level working group to include representatives of civil society, the private sector, and government to study the results of the assessment and determine details of health programs and projects in keeping with the Agenda for Connectivity. This working group will be coordinated by the entity with responsibility for the Agenda.
- Preparation in the short term of a national health services decentralization program based on the provisions of the Agenda for Connectivity.
- Promotion of a joint effort by health institutions and professionals to fulfill the objectives of the Agenda for Connectivity.
- Work to ensure that, within five years, all health establishments have Internet connection.
- Establishment of at least one telehealth center in each geopolitical division of the country within two years of the date of adoption of an Agenda for Connectivity in the country
- Promotion of the establishment of telehealth databases and content in the country. The first database of this type would be established within two years of the launch date of the Agenda for Connectivity and should include an informational and guidance module for the general public and another to support ongoing training in health centers.

- Promotion of the introduction of curricula and programs of study on telehealth in upper secondary and higher educational institutions

4.3.1.3. Employment

A social scourge affecting many countries of the Americas is unemployment, and its hidden but even more widespread form, underemployment.

Due consideration must therefore be given as part of an Agenda for Connectivity in the Americas, to telecommuting applications. This is not only a question of developing support systems for groups of executives or modernizing certain functions within companies, such as sales and distribution, but of re-engineering organizations as necessary so that the private sector and the corresponding government agencies may support the job creation process and the supply of personal services on the labor market, by installing access points, telecenters, and specialized on-line telecommuting services or telecommuting applications in telecenters.

Both companies and government entities will be able to install peripheral IT centers on the outskirts of urban areas, to be well-supplied with telecommunications and IT infrastructure, to solve problems of lack of space and the high costs of rent and maintenance of central offices.

It is also advisable for telecommuting activities to be combined with environmental improvement programs as there is obviously a positive relationship between the success of a telecommuting project and the improvement of the environment in the project's area of influence, as displacement of workers is reduced.

The plan of action to support the employment area of an Agenda for Connectivity should include the following activities:

- Establishment, under the direction of the entity coordinating the national Agenda for Connectivity, of a high-level working group, to include representatives of civil society, the private sector, and government, which focuses its efforts on studying the results of the assessment and determining the details of programs and projects for the country's employment sector, in keeping with the national Agenda for Connectivity.
- Preparation and direction of unemployment and underemployment reduction programs in keeping with the national Agenda for Connectivity, a process which should begin immediately after the Agenda is launched, and should be evaluated regularly each year.
- Coordination of projects to incorporate and reinsert workers into the labor market with government agencies, private entities, and civil society working with communities of persons with disabilities and senior citizens, which would begin in the short term and would be evaluated each year.
- Development, with the various government areas and levels, of a first telecommuting tier, seeking to reduce costs and problems of mass displacement in urban areas. Programming these activities on the basis of the geographic areas with most problems of this type.

- As a supplementary step, coordination, with authorities responsible for the environment, of joint projects for environmental improvement in urban areas where the workforce is concentrated. Consideration should be given to alternative work schedules, flexible workday lengths, transportation, relocation of offices and premises – both government and private – and the resulting urban planning considerations
- Provision for any other activities deemed appropriate in this connection.

4.3.1.4. Recreation

Agenda for Connectivity activity in this area should be to promote and encourage these types of initiative as forces driving enhancement of the quality of life of users through daily activities and adjustment to the use of ICTs.

It is recommended that consideration be given to, *inter alia*, the following activities:

- Promotion of the development of human capital and companies involved in content development.
- Promotion of the creation of user-friendly virtual communities on the topic of recreation, with a view particularly to the development of a national culture of ICT use, starting with easily-accessed topics perceived as simple or not frightening, given the general public's limited knowledge.

4.3.1.5. Culture

The Internet is becoming an enormously useful tool for the dissemination of areas of cultural interest in the countries, for the preservation of the cultural heritage of the different races and regions, and for keeping alive communication among members of different ethnic groups that are geographically isolated.

So as to create equitable access to cultural information, governments must promote and support the creation of technological platforms with the capacity to cover, *inter alia*, the following aspects:

- Consolidation of national cultural sector information so that it may be disseminated on a dynamic basis to the national and international communities, including cultural entities, agents, events, and projects
- Presentation on the Internet of national traits: the nation's culture, to include races, languages, folklore, history, music, festivals, customs, etc.
- Presentation via the Internet, the country's cultural heritage in electronic form, including virtual museum collections held in the country, to include their inventories, records, and scientific cataloguing of collections
- Promotion of the creation of virtual communities among the same ethnic groups, according special priority to and especially promoting indigenous communities
- Promotion of nationwide cultural service networks

4.3.2. Private sector

4.3.2.1. Electronic commerce

Section 3.3.2 noted that electronic commerce is acknowledged to be a key factor in the development of the information society, and as a fundamental force driving both business' and consumers' need for connectivity. After the private sector and national governments complete a diagnosis of their situations, much work will be needed to implant electronic commerce. Individual entrepreneurs, established firms and industry associations are best able to develop a plan to help them become established in the field of electronic commerce, and there are many resources available to help them in this task.

But to facilitate the growth of e-commerce, the countries of the Americas need to adopt a plan of action comprising both domestic and multilateral elements. There are four essential elements to a policy framework which will enable and encourage electronic commerce. These are: building trust in the digital marketplace; clarifying marketplace rules; strengthening the information infrastructure (a topic addressed elsewhere in this Action Plan); and marketplace development.

BUILDING TRUST IN THE DIGITAL MARKETPLACE

Government has a role to ensure that the conditions are in place to permit citizens and businesses to feel secure when they use electronic commerce. Security is a primary area of concern. Governments must establish clear rules permitting the use of cryptography and set policy concerning key recovery. E-commerce is encouraged by an environment where the availability of strong encryption and security of communications, data and transactions is assured. Privacy is a second key area where government must play a role. E-commerce benefits from the existence of strong, internationally agreed-upon, privacy protection standards, especially in an environment where barriers to cross-border transmission of information may be erected if privacy protection is not recognized by trading partners as being adequate. Finally, consumer protection measures should be extended to the digital world. Governments can build trust by ensuring that consumers using electronic commerce have access to redress affording a level of protection comparable to that expected for other forms of commerce.

CLARIFYING MARKETPLACE RULES

The area of taxation has emerged as an area of sensitivity in the development of electronic commerce. Governments should take care that existing laws and tax treatments apply to electronic commerce, ensuring tax neutrality between paper and digital transactions. Any changes to the tax regime must be approached carefully to avoid creating a disincentive to electronic commerce. Significant effort may also be required to develop a legal framework that recognizes in law the status of "secure" electronic signatures and creates rules of evidence for electronic records. This requirement is vital, and must be developed in tandem with government policy on security and cryptography. A sound and e-commerce-ready legal framework is also a key enabling component of electronic government and other applications for the Information Society. A third role for governments is to create an intellectual property (IP) rights regime which adapts IP rules to the digital world, while balancing the needs of creators and users. A country's IP rules must be technologically neutral, to be able to accommodate a rapidly changing

Internet environment where new applications challenge lawmakers ability to respond.

MARKETPLACE DEVELOPMENT

Governments may also choose to encourage the development of electronic commerce both by adopting a strategy to encourage use, and by acting as a model user. Policies and programs to encourage small and medium-sized enterprises (SMEs) to adopt e-commerce are particularly important in all countries. Marketplace development policies and programs such as promotion of investment in information infrastructure, electronic government, and methods of extending community access are discussed in more detail elsewhere in this Action Plan, but they are vital elements of an action plan to encourage the development of e-commerce, and a networked economy.

INITIATIVES FOR THE AMERICAS

Electronic commerce is inherently global as well as local – for businesses and consumers to reap the maximum benefits they need to be able to access the international marketplace both as producers and consumers. Governments in the Americas must work together to promote a globally-compatible regional environment for global electronic commerce which facilitates economic growth, maximizes the social potential, while reflecting and supporting the needs of all countries. Regional, multilateral and bilateral agreements can help to create an environment of confidence to permit that to happen. Some important areas for regional cooperation should include: agreements about how to recognize electronic signatures in electronic documents, and agreeing upon compatible authentication and certification policies and procedures. In addition, existing regional and multilateral trade forums and rule-making bodies should be used to stimulate and enable world-wide electronic commerce and remove impediments to trade. Finally, governments of the region should develop or make use of existing forums to exchange information on best practices and innovative applications which have the potential to speed or expand the growth of electronic commerce.

4.3.3. Government on-line

As with electronic commerce, an action plan to implant government on line in the region must include both domestic and regional initiatives, because even in the case of national governments, connectivity inevitably increases openness to the world. The actions presented here are based on an understanding of the best practices by governments around the world, but these must be adapted by individual governments taking into account the political, social and economic development of their respective societies.

Many of the most challenging and important action items for governments planning to go on line naturally must take place at the level of individual governments, and individual government programs. It has already been mentioned that the driver for a government on-line initiative is often the desire to improve the quality of service delivery and raise the

level of users'³ satisfaction with government services. Programs are redesigned from the needs and interests of the citizen and programs may be grouped or integrated where appropriate. Many governments are taking a “whole of government” approach to the setting of information management and technology standards, the provision of common infrastructure services and the use (or reuse) of common processes or systems, in order to capture economies of scope and scale as they move towards electronic services.

One of the first steps taken by many governments is to create or reorganise their web presence so as to increase the accessibility of government services and ease of navigation of their sites. Often this involves the creation of integrated portals which complement the traditional department-by-department or program-by-program listings by grouping information, forms and services according to subject or theme, user group or life-cycle stage. These sites may begin as simple listings of useful links, but evolve over time to provide content – delivering relevant and authoritative information organised in response to users’ needs. These sites can evolve to become the platform for the delivery of interactive and transactional services. Governments may also set standards for the “look and feel” of these and other key sites, for user feedback and use metrics, and for metadata or indexing of information in order to make it easier for citizens to find what they are looking for.

Transforming services for on-line service delivery is a considerable challenge. Services should not be simply automated, but re-invented for the Internet – and many governments use their on-line strategies to simplify delivery processes and cut red-tape. The focus is often on the most commonly used and high transactional volume services, for which users are ready for on-line and self-service approaches. Pilot projects are often used to test concepts at lower overall risk.

The rethinking of services should also consider the opportunities to integrate information collection and processing, or to use common front-ends, forms, applications or back-end systems. The integration of services can offer significant savings in addition to service delivery mechanisms more focused on users’ needs. A single site offering citizens a secure means for changing their address with multiple government departments, for example, could both appeal to clients and save each department the cost of developing this service.

In many instances, governments also invest in putting on-line horizontal enabling services which reach across departments and agencies. These include the ability for programs to receive and make payments electronically, and the entire supply chain or purchasing and procurement systems for government.

Many governments choose to invest in a common or shared infrastructure. Offering high capacity networks, network security, directories of users and employees, and security services as a common infrastructure is less expensive than requiring each department or agency to provide its own security solution program by program. The users also benefit from standardised protocols and seamless hand-off.

³ The word “user” in this paper to refer to someone who uses the services of a national government. Most commonly, the user will be a citizen of the country in question, but a user may also be a person outside the country, or a representative of a business inside or outside the country, seeking information or engaged in a voluntary or required transaction with the government.

Citizens and businesses are often concerned about the privacy and security of their transactions and the provision of a common secure channel with government helps address some of these concerns. Many governments are also reviewing policy frameworks to ensure that these build citizen trust and confidence in electronic services. Privacy issues are often critical – and some governments may need to clarify the privacy rules which obtain in integrated service delivery situations. Often governments have also elected to pass legislation that provides a legal standing for electronic signatures and documents filed with them. Such legislation, and addressing privacy concerns, is central to the creation and promotion of other e-services, such as e-commerce, in an economy.

Most governments have also recognised the need to transform internal administrative services for on-line delivery, and to provide employees with the skills and tools they will need to effectively participate in an electronic service delivery environment. This might mean moving to single systems or shared service organisations for financial, human resource and materiel management. It can also mean e-recruitment of new government employees, and on-line self-service sites for training, travel authorisation and expenditure claims, vacation and leave processes. These processes may require the equipping of employees with electronic signatures.

Moving to on-line services is a significant change management initiative. It requires sustained leadership at all levels, both political and bureaucratic. It is most successful when a vision and targets have been articulated at the highest levels – to define the end-state and what “success” would mean. In most cases, an organisation has been funded to drive the government on-line agenda. The resources needed for service transformation and common infrastructure services are sometimes provided centrally, sometimes reallocated from existing department and agency IT budgets. It is often a challenge to articulate the “business case” (or logical/financial rationale) for putting services on-line, as costs are high initially and savings are difficult to quantify and do not appear immediately. A broad view is needed – governments should consider their strategy for service delivery across all channels as the take-up of the on-line channel may generate savings in in-person, mail or telephone channels. Some governments are offering explicit incentives to encourage the take-up of on-line services – in all cases, communications strategies are essential to build awareness, encourage take-up and reassure citizens of the safety and security of on-line delivery.

There are many approaches to electronic government, and in many instances the lack of a pre-existing legacy computer systems means that some governments can move ahead rapidly with innovative on-line services and systems.

INITIATIVES FOR THE AMERICAS

Participation in regional or international organisations provides an excellent means of sharing best practices, innovative approaches, and lessons learned. With appropriate agreements, it would also be possible to arrange for sharing of software solutions developed by individual governments. Common approaches to authenticating users authorized to engage in transactions, and protecting transactions would also simplify cross-border transactions involving governments.

4.4. Content

The following plan of action is suggested for the content area:

- Establishment of a high-level working group, to include representatives of civil society, the private sector, and government, to study the results of the corresponding assessment and determine the details of programs and projects in the content area in the framework of the national Agenda for Connectivity. This working group will be coordinated by the national entity responsible for the Agenda.
- Promotion in the short term of an updated human resource training program, in national public and private educational institutions, specialized in technological fields essential to the production of content.
- Study the advisability of establishing a government incentive system to expand the content industry and other related industries within the country. If appropriate, it is suggested that the system be established as soon as possible, and that it be reviewed at the close of the fiscal period.
- Definition of the basic stock of content and of the corresponding projects to see that public administration evolves and to provide information services and other citizen-related services. This activity should be carried out shortly after the launch of the national Agenda for Connectivity.
- As suggested in the section on e-government, moving to integrate on-line content government services into Web portals. This process must be initiated by the different government levels and areas beginning in the first effective year of the national Agenda for Connectivity, and should be updated and enriched on an ongoing basis.
- Establishment of ongoing production of on-line content at the different government levels and areas for internal consumption and public information purposes. As this activity involves many activities, it will be considered a process for the medium to long-term.
- Study of how much national content is available via the Internet.
- Define in the short term, and with the pertinent private sector participation, the commercial on-line content services most appropriate to the national reality, and the multisectoral plans to make them feasible.
- Promote inter-American cooperative efforts for the exchange of content and its joint development.
- Based on the results of the assessment, establish a national strategy to address the lack of content in the three sectors.
- If necessary, coordinate joint activities among the three sectors included in the national Agenda for Connectivity to prevent or punish the dissemination of illegal or offensive on-line content.

4.5. Regulatory framework

All governments of the region are faced with the challenge of creating a modern regulatory framework that supports and sustains the development of the Agenda for Connectivity.

Fortunately, in recent years, governments worldwide have reached high-level agreements on the elements of such a framework.

Most governments recognize that they do not have the capacity to build the telecommunications networks necessary for high-level connectivity. This is an activity where the private sector must take the lead. For this to take place, governments must provide a proper freely-competitive environment and a climate of confidence for investment that provides security to private investors. These elements are essential in implementing the Agenda for Connectivity, but are beyond the scope of this document.

In the telecommunications area, most countries of the region recognize the need for a series of regulations that have been defined in the Basic Telecommunications Agreement of the World Trade Organization (WTO), and specifically in the reference document which has been incorporated in the various countries's commitments in the General Agreement on Trade in Services (GATS).

To summarize, aspects to be considered in each country in creating an appropriate modern regulatory framework for the development of the Agenda for Connectivity must include:

- Equitable, universal access to information
- Transparency
- A competitive ICT industry
- Effective civil society participation in the development of the regulatory framework
- Information protection mechanisms
- Training in the use of ICT services
- Protection the new information society's intellectual property
- Coordination of legislation governing the information and communications sectors

The following activities are recommended for such purposes:

- Organization of working meetings and workshops with the participation of members of civil society, private sector experts, and the public sector to share experiences and best practices for the development of solid regulatory frameworks that facilitate and promote the use and application of the ICTs in all sectors of society
- Identification of technical assistance mechanisms and opportunities existing or proposed by international organizations such as the IDB or the ILO, which may facilitate the process indicated above

4.6. Financing schemes

That connectivity is a national priority, and that the respective Agendas are state policy, must therefore be reflected in the development plans of the region's governments. It is essential that the importance assigned to connectivity be reflected in the design of the countries' respective macroeconomic policies and, in particular, in allocating public expenditure.

Creative project financing alternatives that benefit principally the Hemisphere's smallest economies must therefore be developed with the active participation of international financial institutions and the region's private sector.

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www.itu.ch/itudoc/osg/ptspeech/chron/1997/42248.html

5. CITEL commitments

Promotion within the three permanent consultative committees and, in particular, in PCC.I, of the holding of workshops that lead, at the end of each meeting of the respective consultative committee, to formal work and specific resolutions on pertinent topics related to connectivity in the Americas. In particular, it is recommended that the following aspects be addressed taking an approach designed to develop connectivity:

- Standardization
- Interconnection
- Radiocommunication
- Planning and administration of the radio spectrum
- Full use of second generation telecommunications technologies
- Third generation telecommunications technologies
- Universal service and access and their respective funds
- Study of the advantages of linking local loops
- Human resource training
- E-Americas project
- Distance education
- Telemedicine
- Electronic commerce
- Telecommuting
- Rates and financial matters
- Internet
- Certification and Mutual Recognition Agreements
- Any other topics considered appropriate to guide the development of connectivity in the Hemisphere

Organization of a planning workshop on the Agendas for Connectivity in the Americas in which all senior staff of the entities with responsibility for their coordination would participate. If advisable, additional meetings could be programmed to be held each year.

Promotion, through frequent communication and contact among COM/CITEL officers and between CITEL and the telecommunications policy and regulatory authorities of each country of the region, the launch of their respective national Agendas for Connectivity, and connectivity and ongoing support for their development.

Organization, on a regular basis, of forums of the three Permanent Consultative Committees focusing on evaluating and enriching the agendas for connectivity of the countries of the Americas, which enable Administration officials and associate members of the Inter-American Telecommunication Commission to exchange experiences and establish alliances to develop aspects of common interest.

Establishment of an observatory on connectivity on the CITEL Web site for the exclusive use of Administrations and associate members. This store of information should be updated at least weekly and will concentrate, insofar as possible, information on all connectivity activities worldwide. CITEL will hire technical personnel to carry out on-line research, organize reports, update the document database, and communicate with users.

Telecommuting – Telecommunication applications, information technologies, computer science and on-line contents to increase the feasibility to have abundance of work and to facilitate the thriving of remote work.

6. APPENDICES

6.1. Glossary

Digital divide – digital gap

The gap separating those with access to on-line information, the new technologies, and modern communications networks from those with only limited access or those without any access, which increases the gap out of all proportion between the former and latter in terms of acquisition of knowledge and economic and social development.

Technological convergence

The process of integrating applications and services introduced by digital technologies in terms of the way such services are provided, thereby blurring the distinctions between the type of service and the medium of delivery, and also reducing the technological distinctions between text, audio, and video.

Convergence may also be expressed as the capacity of different network platforms to transport all types of different or essentially similar digital services and the integration of consumer electronics such as telephone, television, and personal computers into a single product.

Multimedia

All interactive computerized information distribution products operating on- and off-line, which integrate at least three of the following forms of information representation: text, images, moving images, and sound.

Information society

The term “information society” refers to a form of economic and social development wherein a central part is played by the acquisition, storage, processing, evaluation, transmission, distribution, and dissemination of information with a view to creating knowledge and meeting the needs and individuals and organizations in economic activity, wealth creation, and determination of quality of life and cultural practices of the citizenry.

Telecommuting

Application of telecommunications, information technologies, computer science, and Internet content to enhance the feasibility of achieving full employment and facilitating the growth of working in remote areas.

6.2. International initiatives

Model developed in Canada (www.connect.gc.ca)

Model suggested by Harvard University's Center for International Development (www.Harvard.edu).

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See www.Harvard.edu

6.3. Checklists