

Building an Information Society in the South
The role of Governments and Civil Society

Susana Finquelievich

Document prepared for
Instituto del Tercer Mundo (ITeM)

July 2005

*ITeM gratefully acknowledges the funding support of the
International Development Research Centre*

Table of contents

1. Building the Information (or Knowledge) Society in Latin American and Caribbean countries	2
<i>Advances in connectivity in the last decade</i>	3
2. Connectivity strategies of the different social actors.....	5
<i>Access strategies implemented by governments</i>	5
<i>The access to e-government</i>	8
<i>Civil society connectivity strategies</i>	9
<i>Enterprise strategies</i>	13
3. The new role of governments and civil society in the Knowledge Society.....	17
<i>Financing mechanisms for building the Knowledge Society</i>	17
<i>Public financing of communication infrastructures</i>	17
<i>Common solidarity funds</i>	19
<i>Financing research projects / collective action</i>	21
<i>Financing of technological production</i>	22
4. Innovative policies and strategies proposed for Southern countries	25
<i>Connectivity</i>	25
<i>Fulfillment of social needs</i>	26
<i>The state's new pioneering role in the Information Society</i>	27
<i>The new role of civil society</i>	28
5. And finally	30
<i>With regards to government actions:</i>	30
<i>With regards to S&T activities related to the information economy it is necessary:</i>	31
<i>With regards to civil society actions:</i>	31
<i>For the different social agents:</i>	33
6. Bibliography.....	34

1. Building the Information (or Knowledge) Society in Latin American and Caribbean countries

The mandate of the United Nations (UN)¹ promoting the World Summit on the Information Society (WSIS)² encourages governments to implement multistakeholder consultation mechanisms (governments, private sector and civil society)³ in each country to define the corresponding national strategies towards the Information Society. Similarly, UN resolutions on this issue call international and regional institutions to actively participate in the whole process⁴. Undoubtedly, as it was stated by civil society representatives at the Latin American and Caribbean Regional Conference, held in Rio de Janeiro⁵ in June 2005, it is a process that has opened the possibility to innovate and experience with multistakeholder participation schemes.

Upon this mandate, a series of questions are raised in Southern countries: How is the building of an inclusive Information Society to be developed by the different social actors in Southern countries, particularly in Latin America and the Caribbean? What elements apart from connectivity should be focusing the efforts of governments, the private sector and civil society? What sources of financing to ensure access and production of technological goods and services should be encouraged? What are the conditions required to assure that multistakeholder participation in building the Information Society becomes a reality and not just a nice rhetoric? And essentially, what proposals could be made on these topics in order to contribute to the process of building the Information Society that will follow the WSIS?

This paper, based on research carried out by the author and other researchers regarding different aspects of the Information Society in Latin America and the Caribbean (LAC)⁶, is placed within the process of collective reflection and debate in the context of the WSIS. It includes five items: the first one is based on the strategies for building the Information (or Knowledge) Society in LAC countries. It briefly describes the political and economic emphasis placed by governments on connectivity and its progress throughout the last decade.

The second item focuses on the strategies of the different social actors in terms of connectivity, including governments, companies and also the organized civil society. Several examples are given by way of illustration.

¹ <http://www.un.org/>

² <http://www.itu.int/wsis/>

³ <http://www.itu.int/wsis/basic/multistakeholders.html>

⁴ <http://www.itu.int/wsis/basic/background.html>

⁵ <http://www.redistic.org/docs/ENSI-RIO20051.pdf>

⁶ This paper is based on the following research coordinated by the author: *TIC y reducción de la Pobreza en América Latina y el Caribe* (IDRC, 2002); *TIC y Desarrollo local en el Área Metropolitana Norte de Buenos Aires* (Agencia Nacional de Promoción Científica y Tecnológica, 2003-2006); *La sociedad civil en la economía del conocimiento: TICs y desarrollo socio-económico*, Instituto de Investigaciones Gino Germani, Facultad de Ciencias Sociales, Universidad de Buenos Aires, 2004; *Las Cooperativas Comunitarias de Telecomunicaciones en Argentina*, 2005; and *Las Redes Electrónicas como Organización Social*, CONICET, 2003 - 2005; Susana Finquelievich and Alejandro Prince: *El (involuntario) rol social de los cibercafés en Argentina* (2005).

The next item stresses the importance of promoting partnerships between governments and other social actors for connectivity purposes⁷ and to particularly focus on the Knowledge Society for Development, that is to say, on the national production of Science, Technology and Innovation (S+T+i), as well as on the articulation between S+T+i and the production of goods and services in the Knowledge Society which may contribute to the economic and social development of citizens. For this purpose, different financing strategies for building the Knowledge Society are briefly described. Reference is also made to the importance of resorting to the promotion of a technology-based production of goods and services in Southern countries rather than to technology transfer from developed countries.

Finally, the fourth item focuses on the proposal of innovative policies and strategies for Southern countries, including diverse areas: agreements between nations and blocs of countries, universal telecommunication services, connectivity, production in Science, Technology and Innovation (S+T+i), and production of goods and services in the Knowledge Society.

Advances in connectivity in the last decade

Since 1993, the number of nodes and users has expanded dramatically in spite of the digital divide. The Internet Society reported a 12% monthly growth in 1993 with full access and/or gateways for electronic mail in 126 countries in the same year (Molloy, 1997). In 1993, it was estimated that more than 2 million computers were connected to the Internet, with 48% in the research area, 29% in commercial sectors, and the rest in government, education and defense. In 1994, Internet Society statistics showed that *Latin America was the fastest growing world region in terms of connectivity*. Overall, the region registered a 36% increase in the third quarter of 1994, with several countries showing an even larger growth: Argentina 41.9%, Peru 171%, Venezuela 65% and Mexico 48%.

According to data provided by Molloy (1997), in 1995 the World Wide Web (*www*) became the fastest growing area of the Internet. The popularity of this flexible and user-friendly interface also contributed to a considerable expansion in the number of commercial sites (domain identified as *.com*) as companies saw a chance to advertise and sell products and services through the Web. In Mexico, for example, in just nine months of 1995, the commercial domain grew by 100%.

During that year, the number of registered computers on the Internet was more than doubled from 3.2 million in 1994 to 6.6 million in 1995. The number of users was estimated at 40-50 million in 1995, with projections of 200 million users by the year 2000. Although the largest number of Internet hosts and users resided (and still resides) in North America (including Mexico) and Europe, connectivity in Asia, Africa and Latin America still showed a high rate of growth. In 1995, the number of hosts in Colombia grew by 88%, in Panama by 87% and in Peru by 53%. In the same year, Brazil (11,576 nodes), Mexico (8,382 nodes), Argentina (3,270 nodes) and Colombia (2,075 nodes) were all ranked among the world's top-50 domains. In 1995, several small Caribbean countries connected to the

⁷ Even if this does not release the State from its responsibility with respect to laying down and maintaining telecommunication infrastructures to ensure universal access to information and communication to the entire population, even in low-populated and non-profitable areas, as explained below.

Internet for the first time, including Antigua, Cayman Islands, the Dominican Republic and Barbados (Molloy, 1997).

According to Herzog (2000), Latin America registers a much higher number of hosts than other regions of the so-called “Third World”. Notwithstanding this, statistics conceal the existence of acute inequalities among the countries of the region. Of the 486,795 Latin American hosts, 394,160 were found in just three countries: Brazil, Mexico and Argentina (January 1999), accounting for 81% of Internet servers in Latin America. However, all Latin American and Caribbean countries, except for two small insular nations, are connected to the Internet.

Herzog (2000) states that although the number of Internet servers can be useful to estimate the theoretical possibility in terms of Internet access, it does not indicate the number of users connected from their accounts to the respective hosts, that is to say, the number of people that in fact use the Internet. The data available differ. For example, *IDC* estimated that there were 5.7 million Internet users in Latin America in December 1998, which accounts for 1.32% of the total population. The same figure had already been mentioned in July 1997 by the private consultant *Star Media*, according to which Internet users currently account for 13.3 million (more than 3% of the total population). However, another consultant firm, *Nazca S&S*, was already talking about 7 million users in November 1997 (1.66% of the population), while in April 1999, *LABIN* reached the figure of 2.5 million users (0.6% of the population). Taking into account data disparities, it is not possible to have a precise idea about the real dimension of the users sector.

According to April 1999 estimates, of the 160 million Internet users (3.9% of the world population), 3.6% would belong to Latin America and the Caribbean (8.4% of the world population).

CHART 1: Internet Users in LAC, 1998-2003⁸

Internet Users in LAC, 1998-2003						
1998	1999	2000	2001	2002	2003	1998-2003 GAR
5,282,260	8,665,386	13,313,347	18,296,126	23,547,712	29,596,186	41%

The UN Economic Commission for Latin America and the Caribbean (ECLAC) (2005) reveals that between 1998-2004 the number of fixed telephone lines almost doubled (from 53 to almost 93 million), the number of mobile phones increased 8.5 times (from 20 to 172 million) and the number of Internet users was increased 12 times (from 6 up to 72 million). In several Latin American and Caribbean countries, the ICT expenditure per capita in terms of per capita income even surpassed world averages: 8.4% in Brazil and 7.8% in Chile and the Dominican Republic. However, in absolute terms, these countries only spend 400 dollars a year per capita on ICT, amount which is six times higher in developed countries.

⁸ If a user accesses the Internet from both home and work, the user is counted once. http://cyberatlas.internet.com/big_picture/geographics/article/0,1323,5911_323391,00.html

2. Connectivity strategies of the different social actors

According to ECLAC (2005), almost all LAC countries have implemented policies based on public-private partnerships, aimed at using the ICTs to promote competitiveness and increase equality of opportunities for all citizens, as well as to enhance the State transparency and efficiency. In this framework, many governments have programmes to optimize Internet public access – mainly in telecentres, infocentres or education institutions – although coverage is still low. This poses the challenge to expand national networks of free or low-cost public Internet access centres, mainly in remote areas, with low-income and/or low population densities.

In the public sector's case, the use of ICTs is crucial in order to enhance its efficiency and transparency. Among actions being promoted, it is worth mentioning the development of state electronic purchases, payment of taxes and social security services via Internet and the digitalization of vital statistics, customs and migration services. Five countries – Argentina, Brazil, Chile, Colombia and Mexico – are ranked among the world's 25 most advanced countries in terms of government presence on the Internet, surpassing even Japan, Spain, Portugal and Italy, while other countries are among the world's most backwards ones. ECLAC also highlights the development of educational contents. Experiences regarding the development of educational and multimedia software have increased dramatically. Some countries have been working for almost ten years on the production of high-quality educational content and there is already a Latin American network of educational portals which includes the participation of 17 countries.

Access strategies implemented by governments

Connectivity is the first unavoidable step towards accessing the benefits of the Information Society. It is also necessary to make society have certain influence on technological offer: once the habit to use Information and Communication Technologies (ICTs) is established among people, they can start making demands that would serve their own needs aimed at technology designers, businesspeople and promoters. Thus, a virtuous circle would be established where society would be influencing technological offer and where, at the same time, the provision of products suited to local needs, and the habit to use ICTs, would result in increased and more complex demands (Finkelievich et al., 2003).

As it was mentioned above, in the 1990s, ICTs became disseminated in LAC. However, access to them is extremely unequal, both among and within countries. This *digital divide*, which is articulated by means of previous socioeconomic inequalities, poses a significant obstacle to development. On account of this, the current priority for the governments of LAC countries in terms of building the IS is to put an end to this inequity.

There are other interests that explain the relevance of connectivity agendas in LAC governments: connectivity implies laying infrastructures, which at the same time comprises initiatives of companies and financial institutions that thus start exerting strong pressure on countries. Although the national agendas of some countries (Argentina, Mexico, Brazil, Venezuela, Uruguay, among others) encompass broader purposes than connectivity, the results obtained until now in terms of education, public policies, S&T, and economic development through ICT, evidence more desire for this to happen than actual results. As

posed by Juliana Martínez et al. (2001), the sole access to ICTs neither results in the generation of knowledge nor in the transformation of social inequalities. But, why would connectivity in itself lead to development and, above all, to (a more) equitable development?

By connectivity it is commonly understood the access to computers and Internet through financing plans for computer equipment or set up of telecentres or infocentres. However, laying down and maintaining telecommunication infrastructures and providing universal service at affordable prices have not been likewise considered. In order to place Internet in the service of development, it is inevitable to go beyond connectivity in terms of mere access to ICTs. It is essential to deal not only with the generation of contents, the combination of Internet with other media, and the use of these technologies, but also and above all, with the development of infrastructures and applications. Nevertheless, except for Brazil or Mexico, it was not until recently - since 2003 - that some LAC countries started to develop plans or projects aimed at creating their own technological innovations to break dependency on this area: efforts were mainly focused on connectivity understood as the *consumption of technology goods and services*, which is undoubtedly an important step towards the integration of a global Information Society, but not to build the *information society that is appropriate to the national realities of LAC countries*. The transition from consumers to producers of technology (particularly software) is still in its first stages of development.

In the study carried out by Finquelievich et al. (2003), it is shown that the identified connectivity plans and projects were only focused on providing free or low-cost Internet access. Connectivity was rarely linked to the local development of ICT intensive goods and services or to activities aimed at economic growth and poverty reduction. Although connectivity necessarily implies laying down infrastructures, what is the essential infrastructure deployment for national development? Is it the import of technological advances from abroad or the country's own production of new products and applications?

It is worth pointing out that *connectivity is one of the few sectors which have attracted regional efforts*, such as Red MERCOSUR/RECYT/ THEMATIC COMMISSION ON INFORMATION SOCIETY, which defines goals to be developed jointly among MERCOSUR countries. Some of these goals are the support to social development (digital divide) and two ICT infrastructure projects: Interconnection of high-speed networks in R&D centres and Development of open platforms of content-intensive quality applications. The Commission also promotes economic development (understood as e-commerce) and e-learning. However, by mid-2003, no specific results have been registered in this respect.

Argentina

The National Programme for Information Society⁹ (PSI) developed by the Communications Secretariat underlines the need to define a national policy aimed at directing public efforts towards connectivity. PSI focuses on universal access to Internet and other digital data networks, expanding e-commerce, training human resources in e-management, encouraging investments and developing telecommunications, informatics, electronics, software and related technologies.

Although PSI's programme on Community Technology Centres (CTC) does not meet all its initial purposes, it is one of the two free-access state programmes aimed at people at a socioeconomic or geographical disadvantage, as well as at the physically handicapped. The project of Community Technology Centres had approximately set up 1,350 CTCs throughout the country. To this, 1,745 Popular Libraries should be added, which are now part of the CTC Project. However, CTCs are far from having solved the problem of people's access. In a study carried out on these centres, Bassi and Rabadán (2002) acknowledge that *"Although CTCs are a reality, their operation in terms of stipulated goals, is far from being optimal. Most of them evidence serious irregularities and those which are operative are being under-used"*.

On the other hand, the Federal Investment Council¹⁰ provides Access Centres in all Argentine province capitals, mainly addressing low-income people and the micro, small and medium enterprise, civil officers at provincial and municipal level, the educational sector and community institutions.

Brazil

The SOCINFO Programme, in its connectivity area, only indirectly refers to solving social problems. However, its projects on Science and Technology Parks and projects such as SOFTEX 2000, aimed at the production of ICT intensive goods and services for local development in cities spread along the country look quite promising in this respect.

Some regional and federal programmes appear to be more channelled in this direction: for example, the State of Goiás, through the Secretariat of Science and Technology, created the CPC Programme which helps to solve the needs of the agricultural, business, tourism and services sectors of the different regions within the State, using ICTs, so that the serviced groups achieve new labour skills. This programme also helps the education and employment sectors, launching courses for young people and adults. CPCs are aimed at enabling the creation of small businesses and the management of autonomous and informal work. In Chile, universal access is the main goal of the Telecommunications Secretariat, with a IS Universal Access policy that proposes, among other goals, to promote economic development and encourage equal distribution among people, although apart from facilitating connectivity it does not describe operational aspects.

⁹ <http://www.psi.gov.ar/>, and the CTC official website <http://www.ctc.gov.ar/>

¹⁰ http://www.cfired.org.ar/esp2/indices/f_1.htm

Cuba and Mexico

The Cuban government seems to have overcome its previous resistance to Internet connectivity through the implementation of a more active policy, as a response to the increasing social demand and the growing Internet “black economy”.

In Mexico, the strategic importance of ICTs for national development was acknowledged more than 20 years ago: therefore, diverse actions were launched to prompt their development and assimilation. Different mechanisms and arrangements to ensure connectivity have been established, among them the National Connectivity Programme e-Mexico which created a network of Digital Community Centres (CCDs)¹¹ allowing to set 1,500 Internet access points in municipal capitals throughout the country.

The access to e-government

Most connectivity initiatives taken by LAC governments are aimed at encouraging citizens to resort to information mechanisms implemented by national, regional and local states in terms of e-government, one of the most important priorities for the governments in the region. E-government is regarded as a means to strengthen democratic policies, reduce bureaucracy and increase transparency in municipal governments. National and local governments have been able to test ICTs effectiveness to increase efficiency and speed in governmental management, both at internal (institutional) and external (services provided to citizens) level, as well as with regards to economic optimization in terms of staff rationalization, reduction of costs and others. It is also - to a large extent - a valuable tool for political publicity, a “display window” showing governmental achievements and projects. E-government is not yet used neither as a tool for civil society participation nor as a means to optimize the local or regional economy: there is certain short-sightedness with regards to the potential of e-government to attract innovative companies to the city, have incidence on tourism, facilitate business and encourage the production of related goods and services, such as hardware and software which are needed to implement e-government.

Digital government as presently understood in LAC comprises at least two conceptual dimensions: the administration of a country, region, province or city, and the government itself. The latter, according to Alejandro Prince (2002) is understood as e-politics: the application of technology to the political activity of governments at the different levels, in their relationship with citizens. This category includes activities such as electronic votes, referendums, plebiscites, as well as discussion lists, forums and chat between citizens and legislators. E-management or digital management refers to the application of Internet and ICTs to the State’s activities, processes and areas of operation: the use of technology in “human resources processes and operations, communications, purchases, billing and collection (taxes), office management, etc. These categories include not only intra-governmental activities but also the relationship with other States and organizations (providers) and with citizens in their role as *captive* clients of the State and its bureaucracy” (Prince, 2002, op. cit.).

¹¹ <http://www.e-local.gob.mx/elocal.htm>

According to Reilly and Echeberría (2003), “The history of (e-government) programmes shows that Chile and Brazil have the most lasting and consolidated initiatives; Mexico and Venezuela present e-government strategies as a part of their overall Information Society strategies. (...) Peru (...) and Uruguay still do not present clear e-government strategies”. Although Argentina’s history in e-government dates from 1996, it does not either feature an overall strategy. However, several initiatives are being taken at provinces.

Civil society connectivity strategies

Civil society, far from being absent from the dissemination or even the provision of connectivity among citizens, plays a key role in defining the new types of relationships and social constructions which should be developed through the incorporation of ICTs. It is not only about government and enterprise strategies: it is essential to strengthen the participation of civil society organizations (CSO) in the creation and management of connectivity strategies, not only to promote solidarity and confidence among people, but also to have incidence on public strategies and policies. CSOs take on certain political incidence in order to have a say in decisions and results of public policies. They mainly have incidence on the visibility of problems and demands, having generally the experience and capacity to discover them and make them known, on the formulation of solutions and proposal of policies and on the follow-up to undertaken actions (Finkelievich y Finkelievich, 2005).

The attitude of CSOs towards connectivity management differs according to the organizations: some of them consider that the relationship with the public sector should be strengthened and that organizations themselves can be directly responsible for implementing some programmes and managing resources under State supervision (above all at municipal level). Other organizations are not willing to undertake state functions and consider that their activity should only be focused on social areas and controlling public activities (Finkelievich y Kisilevsky, 2005).

Fundación Equidad (Argentina)

Within civil society, there are initiatives from CSOs, such as *Fundación Equidad*, in Argentina, which implements community access centres.
(<http://www.equidad.org/centros.htm>).

A *Centro Equidad* (Equity Centre) is a public space, which provides access to computers, training on basic software applications, Internet browsing and social services (courses, job search, government transactions, webpage design, purchase and sale of products and services, etc). Generally, these centres are located at a space granted by a neighbourhood centre, community organization, NGO, school, home, parish or club, among other institutions. The centre’s management is in charge of the community organization and the model implies its financial self-sustainability through the provision of low-cost services.

Somos@telecentros (Ecuador)

Somos@telecentros¹² is self-defined as a human solidarity Latin American network that promotes and advocates for social justice and diversity in all its forms.

Its goals are to encourage work on the basis of trust relationships, transparency, equity and mutual respect; to promote the social appropriation and meaningful use of ICTs in order to achieve social development goals; to foster and strengthen spaces for debate to have incidence on public policies and regulations in terms of Information and Communication Technologies (ICTs); to encourage the creation and consolidation of subregional, national and local networks that would promote the participation of members within the regional network dynamics; to encourage joint activities that would thus create a culture of support, accompaniment and solidarity; to develop, consolidate and disseminate a culture of learning by doing, where all men and women would be carriers, managers and transmitters of knowledge; to encourage the active, responsible and productive participation of all members of somos@telecentros network; to create and support learning circles, from our local and national perspective, to strengthen the regional network; to encourage cooperation alliances that would help to achieve the Network's goals; to produce and share updated information, important data, tools and resources that would contribute to enrich the network's movement as a whole and its members in particular; and to develop and promote a culture of self-evaluation and ongoing follow-up to processes.

Chasque – ITeM, Uruguay

In 1986 the *Instituto del Tercer Mundo* (ITeM) was already making wide use of ICTs to communicate with a vast network of correspondents and with the secretariat of the Third World Network in Malaysia as well as to have access to databases all over the world at low costs, downloading articles for its "Third World Guide", an annual encyclopaedia of social and demographic data and economic and political information. Given the high degree of integration among the main Uruguayan NGOs, news of this technology spread rapidly and demand rose for sending and receiving e-mail through Chasque, the collective NGO mailbox at the BBS of GeoNet in England. ITeM began to provide communication services to other Uruguayan NGOs, particularly human rights organizations, private social research centres and feminist NGOs, many of which shared from physical space to the coordination organizations that promoted the return to democracy in Uruguay.

In 1989, ITeM, together with a dozen NGOs, obtained a donation of US\$10,000 from the Dutch Organization for Development Cooperation (Novib) to set up the first Internet service provider for public use in Uruguay. It was given the name of the old mailbox: *Chasque*. Chasque played a key role in disseminating the Internet outside the academic world. In November 1993, ANTEL (The State Telecom Company in Uruguay) and ITeM signed an agreement making Chasque's services available to all ANTEL users. This was the first direct Internet link that ANTEL offered its users¹³.

¹² <http://tele-centros.org/index.php?module=articles&func=display&aid=581>

¹³ See Finqueliévich, Susana (2001): "*Los impactos sociales de la incorporación de TIC en los gobiernos locales y en los servicios a los ciudadanos. Los casos de Buenos Aires y Montevideo*" in "*Internet y sociedad en América Latina y el Caribe*", G. Cliche y M. Bonilla (coord), IDRC-FLACSO, Ecuador, Quito, December 2001.

In spite of efforts undertaken, Latin American partnerships – mainly due to economic constraints and even to limitations related to the management of resources and staff – are not prepared to provide access to technology for most people in the region: the reality is that lower-income citizens, who lack computers or whose computer equipment is too old, most people living in the interior of countries and young people, connect to the Internet – for the time being – from cybercafes, calling centres or telecentres, that is to say, private places for public Internet access.

RITS (Brazil)

RITS¹⁴ is the Information Network for the Third Sector, a private, autonomous and non-profit organization founded in 1997. RITS has partnered with the municipality (Prefeitura) of São Paulo in one of Brazil's largest infoinclusion projects: the São Paulo Telecentre project (www.telecentros.sp.gov.br) that establishes free public Internet access points in some of the city's poorest communities. RITS participates in this project managing the human resources involved in this initiative, providing free software courses and promoting the full appropriation of ICTs for social development. At the present time, there are 107 telecentres in operation, providing access to approximately 300,000 people per month. RITS has been able to broaden its scope of activity: it has established partnership with the Saúde e Alegria (Health and Happiness) Project, which by the end of 2003 set up the Cultural Community Telecentre of the Tapajós-Arapiuns extractive reserve in Santarém (PA). It is a pilot experience for digital inclusion in Amazonian communities aimed at promoting integrated and sustainable development which will be extended to other communities in the region.

ACN – Northeast Digital Action

This project, developed with the support of the Inter-American Foundation and IBM, provides computers and Internet access to 40 NGOs in Brazil's Northeast region. Organizations go through a training programme in computing and Internet and are given guidelines for an effective appropriation of ICTs aimed at strengthening their institutions. RITS provides consultation sensitive to the needs of each organization, with presential meetings, monitor support in those states covered by the project and activities via Internet (www.rits.org.br/adn)

There are alternatives arising from civil society, although not widely disseminated in Southern countries. One particular case is Argentina, where to the interior of the country, above all in remote or low-populated areas, access is mainly provided by telephone cooperatives (Finquelievich y Kisilevsky, 2005).

¹⁴ http://www.rits.org.br/oquee_teste/oq_earits.cfm

Telecommunications cooperatives are nowadays the providers of telephone and Internet services to almost one-third of the Argentine population, particularly in remote or small and low-populated areas. A telecommunications cooperative that provides telephone and Internet services is basically an autonomous association of individuals, who join efforts to address the common economic, social or cultural needs and aspirations, through a democratically managed and jointly owned property.

Telecommunications community cooperatives in Argentina

In Argentina, telecommunications community cooperatives (TCCs) were created in the 1960s by citizens who intended to fill the gaps in service left by the state-run telephone company, ENTel, which was unable to provide service to remote or low-populated areas. In 1989 ENTel was privatized but cooperatives remained in operation and spread across communities which due to their geographical location or small-sized populations were not profitable to the large private telephone companies. These cooperatives grew and prospered, introducing new technologies such as Internet to provide new and affordable services to members. At the present time, the two main Cooperative Federations are: FECOTEL (Federación de Cooperativas de Telecomunicaciones Ltda.) and FECOSUR (Federación de Cooperativas del Servicio Telefónico de la Zona Sur). The two of them encompass 350 TCCs. FECOTEL is 40 years old and manages among member cooperatives \$10 billion pesos (US\$ 3 billion dollars) in assets. The cooperative sector provides services to more than 2.5 million people in Argentina – approximately 8% of the country's total population – with 600,000 telephone lines. It invoices approximately US\$ 100 million a year, and employs 3,500 people¹⁵.

The TCCs degree of last-generation technology varies according to the specific needs and economic possibilities of communities. Their autonomy, as well as - in most cases - their small size, makes them flexible enough to adopt new technologies at a relatively fast pace. Many cooperatives are now using IP data networks and transmitting voice over IP, although traditional digital exchanges will still be in service for many years¹⁶. They are also using wireless IP in low-populated areas which have not been reached by copper fiber networks. Some cooperatives are using corDECT, a wireless local loop technology developed by the Indian Institute of Technology and based on the Digital Enhanced Cordless Telecommunications (DECT) standard. CorDECT was designed to provide cost-effective, simultaneous high-quality voice and data connectivity in rural areas.

TCCs provide telephone and Internet services, by dial-up and/or broadband (ADSL or WiFi) connections, as well as IP telephony, to their communities at considerably lower prices than the large private companies that operate in Argentina (Telefónica and Telecom). Most of them also offer free community services, such as courses on information and communication technologies (ICTs), free access to Internet for public schools, libraries and public institutions (fire and police stations, hospitals, etc.). According to COMFER authorities (Federal Committee of Radio Broadcasting), the new broadcasting law proposed in Argentina will allow cooperatives to provide also cable TV services, which will turn them into powerful actors in the telecommunication market. The TV TCCs are prepared to offer a package including cable TV, telephone service and Internet access for a monthly cost of US\$ 16 (2004 prices).

¹⁵ <http://www.bloggers.com.ar/bloggers/novedades3/8067.html> consulted on May 10, 2005.

¹⁶ <http://www.cicomra.org.ar/eventosycursos/Eca2003/Presentacion%20A%20Maccio.pdf>

Enterprise strategies

The private sector strategies for connectivity not necessarily arise from large companies: they usually result from individual initiatives or from the negotiation by individuals of a franchise product belonging to a larger company. This is the case of cybercafes which are in general small private undertakings that have noticeably contributed to bridge the digital divide and supplement the action of governments and partnerships in this sense¹⁷.

Cybercafes and Internet kiosks are located worldwide, although they tend to cluster in major cities, locations where Internet access from homes is still not massive and tourist places. A cybercafe (also known as Internet Cafe, PC cafe, etc.) is a commercial venue where members of the public can access the Internet for a fee, generally per hour or minute. A growing number of cafes offer unmetered wireless access. Many venues also offer beverages, stationery items, computer products, cigarettes and candies, or services such as photocopies and sending and reception of faxes.

The so-called “telecentres”¹⁸ have become widespread in Latin America and the Caribbean, being funded by the State, enterprises or international institutions and usually run by volunteer workers. Telecentres frequently provide courses on ICTs and other community life facilities. When reference is made in this paper to private places for public access, the concept includes calling centres or telephone franchises as well as independent micro-enterprises. This group will be referred to as “the cybercafes”.

The first boom of cybercafes at world level dates back to 1995 and 1996 (Nunes, 1999)¹⁹. Newspaper articles around that time usually mention about 100 cybercafes worldwide, a number considered as extraordinary at the time. Since then, there has been a real boom of cybercafes in developing countries and in major tourist regions. Nunes (1999) considered that, in that year, there were over 2,300 cybercafes in 124 countries, with nearly one-quarter located in the United States. Nowadays, in developed countries and in a growing trend in developing countries, cybercafes are changing: they are not just spaces equipped with computers, but ordinary coffee shops or bars, which provide Wi-Fi service to laptop users. The Internet growth phenomenon in LAC, related to a large extent to the boom of cybercafes, illustrates Rifkin’s concepts. For example, the figures of the Argentine Internet market have showed low but sustained growth throughout the 2001-2003 period of social-economic crisis, which led in 2004 to double the average rate of growth registered for such period, revealing rates higher than 27% in connections and 33% in terms of users. Also in 2004 broadband access was doubled, as a result of strong competition and the endless fight over promotion prices and high-speed. This indicates that Internet, as new information and communication media, is here to stay. It could be stated without ambiguities that technology is a one-way trip.

The growing number of public places for private access allowed the level of users to continue to increase in spite of the crisis. Low-income social groups found a way to enter the Web world from places where for \$1 or \$1.50 pesos (from US\$ 0.30 to US\$ 3) they can navigate during an hour, at high-speed and without having to buy a computer. The use of

¹⁷ This item includes some conclusions drawn from the research work carried out by Susana Finquelievich and Alejandro Prince (2005), *El (involuntario) rol social de los cybercafés en Argentina*.

¹⁸ These Telecentres, privately owned and managed, should not be confused with Telecentres operated by civil society organizations in several Latin American and Caribbean countries, some of which were described above.

¹⁹ *The Realities and Virtualities of Cybercafes*, Mark Nunes, 1999, Presented at the 1999 Popular Culture Association Conference, San Diego, CA, <http://www.gpc.edu/~mnunes/cybercafe.htm>

cybercafes in LAC illustrates Rifkin's hypothesis: access (whose concept is nowadays, for millions of people all over the world, the window into infinite possibilities in terms of studies, work, social and political organization, relationships and entertainment) is also a new way to redefine the relationships of ownership, use and new economy.

Cybercafes in Argentina

In 2004 there were about 7.5 million Internet users in Argentina²⁰. Net surfers who exclusively connect from cybercafes account for 35% of users, over 2.6 million people. Cyberbars or "private places for public Internet access", either as small entrepreneurial initiatives or franchises of large telephone companies, have turned into a strong driving force for spreading Internet use, particularly among low-income groups, people living in provinces, young people and women. This suggests that cybercafes and calling centres could be private spaces for public access, thus democratizing Internet access (estimates by Prince & Cooke, 2004)²¹.

For economically less-advantaged groups, women, senior adults and people living in the interior of LAC countries and Southern countries in general, cybercafes are useful to take computers and Internet outside the mainstream paradigm of ownership and individual use of hardware and connections. Cybercafes undermine this model since they are not based on the *ownership* of technology but on *buying time to use it, making people to share computers in private spaces for public use, instead of using them individually*.

According to studies carried out in different countries, the users of cybercafes are mostly young people. Apart from outstanding leisure activities such as chat or network games, the reasons that explain the high presence of young people in cybercafes are the following:

- i) Higher acquaintance with technology, which has been entering as an unavoidable presence in their lives for about fifteen years, becoming an item of compulsory use;
- ii) The need to use Internet for study purposes, either to search for information, communicate with other students, carry out virtual courses or studies, search for scholarships, etc.;
- iii) Even though some young people own computers at home, parents might restrict Internet use due to telephone costs, shared use of computers or other reasons;
- iv) Cybercafes have become – to different extents according to local uses – places where to spend free time, socializing through the net, either alone or with friends.

The lack of a computer at home is the first reason to use cybercafes. People over 45 years old mostly use household connections, doubling the use they make of cybercafes, except

²⁰ By user it is meant the physical person, the human being, who uses Internet, either being or not the account holder or paying or not for such access. This figure includes both people who access the Internet from their homes as well as those who access at workplaces and eliminates overlapping caused by a number of people who connect from different places (home, work, university, cyberbar, etc.).

²¹ All statistics mentioned within this item are based on the study carried out by Prince & Cooke, *El Rol Social de Los Cyberbares*, Buenos Aires, 2004, <http://www.iabargentina.com.ar/images/Download/009.pdf>, except for those specifically indicated as belonging to other sources.

when they are travelling, have problems with their connections, or other reasons. However, in recent years a growing use of cybercafes by people over 50 years old has been registered²². Apart from the traditional explanation regarding the massification of Internet, other possible explanations of this phenomenon are:

- Young people emigration in search of better work opportunities has made a large number of senior adults – parents, uncles, grandparents – who until that time have not shown interest in ICT use to start using them more frequently in order to keep in contact with migrants.
- Progress in e-management has enabled to carry out transactions via Internet: payment of taxes, downloading forms, home banking, banking information, etc. This is encouraging for adult users.
- The explosion in unemployment of middle-classes forced many adults who previously connected from their workplace to start doing it from cybercafes.
- Many adults use cybercafes for work purposes. Even those who own computers in their shops, consulting rooms, etc., use cybercafes to connect to the Internet in order to save money on connections and avoid dealing with renewing or maintaining the computer.

The involuntarily social role of cybercafes – as well as the deliberately social role of TCCs – is not limited to the access of users to cyberspace: it has incidence on training, socialisation and empowerment. In Latin America and the Caribbean, academic investigations, market research, consulting services to political decision-makers, have been mainly focused on connectivity: much attention was paid to what segments of the population have access to the Internet or are Internet users (Finquelievich et al., 2004). The renowned *digital divide* has been conceptualized in binary terms: an individual or social group has access to the Internet or has not, uses this technology or not. Such an over-simplistic approach to the digital divide implies that when a country increases the number of people with access – either due to state, civil society or private sector policies – the war against this gap is declared as “practically won”, given the fact that a significant number of people use the Internet. However, this approach wrongly assumes that gaining access to the Internet eliminates or reduces any potential inequality that may result from lack of access and use of this medium. There are factors beyond mere connectivity that need to be considered when discussing the potential impact of Internet on current socio-economic inequities. In addition to access to cyberspace, the following measures should be strengthened in terms of use:

- i) Technical means (quality of hardware, connections, antivirus, data security, etc.);
- ii) Autonomy of use (access costs, location of access, freedom to use them for those activities preferred by users, no discrimination for users in terms of age, gender or other, etc.);
- iii) Technical support and training (availability of others to turn to for assistance with Internet use);
- iv) Possibility to gain experience (time using the technology, experiencing with new services, software, etc.)
- v) Possibility to share skills, experience and information with other users/net surfers.

²² LaVaca. Org, Cumbre Mundial de la Sociedad de la Información, La brecha digital en la Argentina, <http://www.lavaca.org/notas/nota421.shtml>, consulted on March 5, 2005.

These factors – all of which are provided by cybercafes, Latin American telecentres and cooperatives – contribute not only to the capacity of individuals to use technology in an effective and efficient way, but also to the e-readiness of a society.

Private initiatives with a social aim are also being implemented by large corporations. A recent example, among others, is *Sun Microsystems*, which has launched its new *Share the Opportunity* global giving initiative, designed to “*help eliminate the digital divide around the world within the framework of the so-called Participation Age*”.

3. The new role of governments and civil society in the Knowledge Society

The previous item deals with the way in which societies provide for their connectivity needs, by means of civil society initiatives or business undertakings of various sizes and levels. This does not exempt governments from their responsibility in terms of providing Internet access to people: it rather partially releases them, allowing them to engage in other aspects of inclusion in the Information Society, including the promotion of the Knowledge Economy – or new economy – understood as the dynamic system of interactions between the citizens of a country, enterprises and government, which capitalize technology with the object of obtaining a social benefit or financial profit. The setting up and development of innovative enterprises in Southern countries – preferably the creation of national technology companies, or companies which make use of the Internet for their internal and external organization, for instance, to increase exports – will have a positive impact on local development (through job creation, staff training, development of small and medium enterprises (SMEs) and innovative micro enterprises, through articulations with educational institutions, local governments and community organizations. (Finquelievich, 2003).

All of this involves country and macro-region projects, whose general guidelines include the (explicit or implied) definition of the intention of becoming either consumers or producers of technological goods and services, spotting market niches for their products and opening export markets.

The ways in which governments, companies and the organized civil society negotiate the financing sources for building the Knowledge Society will contribute to determine these intentions which, in turn, will determine the medium and long-term future of their societies.

Financing mechanisms for building the Knowledge Society

Three financing mechanisms are briefly described in this item: common funds, financing of research projects / collective action and financing of technological production.

Public financing of communication infrastructures²³

For the development of connectivity and the socioeconomic inclusion in the Information Society to be made effective in the medium-term, a vision of communication networks as public goods²⁴ is currently under discussion in LAC countries. As explained by Pineda de Sánchez (2003), an integral vision of telecommunication policies is an essential requirement for new information technologies to be used towards the economic and social development of Latin America and the Caribbean and Southern countries in general.

The strengthening of communication infrastructures in Latin America and the Caribbean is currently one of the basic development problems: regional communication systems show

²³ In this item the description of existing experiences in the Common Investment Funds implemented by several LAC countries has been omitted, as it has already been studied in many other papers.

²⁴ See Prada, Fernando (2005): “*Mechanisms for financing the Information Society from a Global Public Goods perspective*” – ITeM, January 2005. (<http://wsispapers.choike.org/>)

great deficiencies with regards to those in developed countries. Basic telephone lines, mail services, computer packages and data transfer, territorial coverage of audio-visual and printed mass media lack the necessary efficiency and speed to be adapted to modern world communications. Imbalance among countries and within countries, in terms of communication infrastructures, are remarkable given that these are scarce or nonexistent in less populated, remote or low-income areas. The aim of this paper is to emphasize the responsibility of governments in the area of communication infrastructures: connectivity – in terms of access to Internet and ICTs through telecentres, infocentres, etc. – should not represent the main focal point of governments for building the Information Society, although they should focus on taking responsibility for universal access.

According to the Global Knowledge Partnership (GKP) (2005), the major role of governments concerning articulations between the public and private sectors in developing countries is to create enabling economic and legal frameworks, including protection for innovations. According to GKP, the government also plays a significant role in building and training human capacities, and *it is responsible for building the infrastructure and making it affordable*²⁵. On the other hand, APC et al (2005) state their belief that the Information Society financing should be based on the principle that information and communication are public goods. This is particularly true for the extension of network infrastructure in developing countries, and for marginalized populations, wherever they may live. The more local networks and individual users are added to global information networks, the more valuable they become.

Although private sector investments represent extremely significant opportunities for ICTs for development (ICTD), these investments cannot replace (or displace) the central role of public financing in a fundamental sector such as telecommunication infrastructure networks. Otherwise, these networks would never be found in regions and social groups that were not to be profitable to private capitals.

According to the Association for Progressive Communications (APC, 2005), the major role of ICTD use policies should be to grant universal and affordable access to ICTs by the year 2015, as part of the support to the poverty reduction strategies proposed in the WSIS Plan of Action and in the Millennium Declaration²⁶. As pointed out by APC, the private sector can offer valuable support towards this achievement, but it must not be the first actor to be taken into consideration since ICTDs go beyond borders and market interests, as it was already stated by the Task Force on Financial Mechanisms (TFFM)²⁷. For the purpose of providing non-profitable geographical areas and social groups with telecommunication services, APC suggests separating in the first place the areas of the country provided with services by the ICT market (*market zones*) from those areas not reached by this market (*development zones*). As the next step the government could, through a transparent consultation process, declare certain areas of the country as an ICT development zone²⁸.

²⁵ Our underlining (A.N.).

²⁶ <http://www.un.org/millenniumgoals/>

²⁷ <http://www.itu.int/wsis/tffm/index.html>

²⁸ According to APC (2005), these areas can show some of the following indicators: a) Teledensity less than 5% in mobile and fixed services; b) Internet penetration less than 20%; c) Radio and television coverage limited to one or two services; d) Poverty indicators in relation to the capacity to pay for services. In addition to quantitative indicators, qualitative indicators should also be considered, for instance: a) The value of developing existing as well as additional radio and television services; b) The capacity for using these services.

Between these areas there remains a “grey area” with eventually changing boundaries. The *development zones* would become the focal point of ICTD policy efforts. Obviously, this aspect is not only about providing telecommunication infrastructure networks but providing infrastructures for operative purposes, such as poverty reduction, according to the Millennium Goals.

APC (2005) proposes the following key elements for an ICTD policy at national level:

- Identification and declaration of ICT development zones.
- Elimination of political, legislative and regulatory barriers which prevent citizen from having access to ICTs in areas with insufficient services in development zones.
- Setting up of open-access backbone networks as public equipment in areas with insufficient services.
- Expansion of reference terms of Universal Access Funds existing in various countries for the inclusion of financial support for capacity building, gender equity, development of contents and applications, free software, cost-effective software, and language development for ICTs.
- ICTD policies to support poverty reduction strategies within the Millennium Goals.
- Relating ICTs to the development of small enterprises, cooperatives and entrepreneurship.
- Setting up an ICTD Agency in order to coordinate ICTs aimed at supporting poverty reduction strategies in development zones as stated in the Millennium Goals.

Another alternative: the articulation of public funds with civil society entities, such as the Argentine telecommunications community cooperatives mentioned above, for the purpose of providing telecommunication infrastructure networks and services to those areas that are not profitable to the private sector

Common solidarity funds

Another version of financing mechanisms is the North-South and South-South solidarity. *Digital solidarity* is a notion that has spread worldwide since December 2003 and it is an African initiative promoted from Senegal. As a result of the World Summit on the Information Society (WSIS), the first phase of which was held in Geneva from December 10 to 12, 2003, a committee in connection with the initiative promoted by the President of Senegal was set up for the creation of the Digital Solidarity Fund (DSF)²⁹. The creation of the DSF was announced on December 12, 2003 and it is registered within the declaration of principles made at the World Summit of Cities and Local Authorities on the Information Society (Lyon, December 4 and 5, 2003), which in turn agrees with the spirit of the United Nations Charter, the Universal Declaration of Human Rights, the Millennium Declaration, the Johannesburg Declaration and “Monterrey Consensus”.

The fundamental goal of the Digital Solidarity Fund is the transformation of the digital divide into “*digital opportunities* for the promotion of peace, sustainable development, democracy, transparency and good governance”. The Fund is based on traditional North-South cooperation, even though it is completed through a growing cooperation between

²⁹ <http://www.dsf-fsn.org/> consulted in July 2005.

the emergent South (India, Brazil, China, among others) and less developed Southern countries (from Africa, Asia, Latin America and the Caribbean), which usually contribute solutions that are more appropriate to local needs and realities.

The Digital Solidarity Fund is based on voluntary contributions granted by citizens, and finance obtained from local (cities and regions) and national public institutions, as well as from the private sector and civil society. These last two categories include: network equipment and computer manufacturers; software designers; telecommunication operators; suppliers of information and communication technology-related products; and civil society associative structures.

A Digital Solidarity Charter defines the framework and terms of participation in this huge international effort for the endowment of technological and financial resources, aimed at ensuring the inclusion of the entire humankind in the information society. Such charter specifically defines the fund-raising methods, the financing criteria concerning Fund activities, and the necessary conditions for carrying out a transparent management of resources.

The funds raised are used for supporting projects aimed at reducing the digital divide, mostly through the financing of: Articulating projects with a strong impact on socioeconomic activities that respect cultural diversity; Insistent demand for the creation of new activities and, in the long term, new markets with the consequent development of job stability; Approval of adapted equipment; Development of local contents, applications and services for administrations and communities (health, education, etc.), particularly for marginalized groups (women, people with disabilities, etc.); Training of human resources and prevention of intellectual migration.

The Digital Solidarity Fund is supported by initial contributions from its 20 founder members (States; regions and provinces; local governments and cities; international organizations). The official registration of the “Digital Solidarity Fund” Foundation pursuant to the Swiss legislation was ratified with the subscription of the DSF bylaws in Geneva on August 26, 2004. Since then, the Fund is fully recognized by Swiss authorities and carries out activities at international level.

The Fund is, undoubtedly, an innovative initiative owing to the inclusive commitment of Northern and Southern counterparts and to the promotion of international digital solidarity. However, there are certain aspects which deserve more careful attention:

- The same notion of “digital solidarity” can be interpreted with a more “assistencialist” approach, from rich countries to poor countries instead of the cooperation between countries with a potential for development.
- It is a delicate situation that the financing of technological goods and services in Southern countries partially depends on donations from Northern countries: the promotion of technology-based industries cannot be based on these principles.
- Without clear explicit policies concerning the investment of donations, it is to be feared that these are invested only in those countries which are more willing to accept the transfer and consumption of technology-based goods and services.
- It is to be feared that, without a clear policy on the application of funds agreed upon by stakeholders, these will be mainly used in the one-way transfer of technological goods and services from developed countries to developing countries. Although the Goals refer to the promotion of articulating projects with an impact

on socioeconomic activities and the insolvent demand for the creation of new activities, they do not mention the development of local production of technological goods and services or the spotting of “market niches” for new technology-based products. The emphasis on local production is only given to the production of local, contents, applications and services for administrations and communities, although it is intended to encourage training of human resources and the prevention of intellectual migration.

In other words, the certainly well-meant and innovative *digital solidarity*, such as it is currently enunciated, poses the risk of increasing the role of developed countries as technology producers and of relegating developing countries (even more) to the role of consumers.

Financing research projects / collective action

Another frequent course of action is the financing of research and cooperative actions among Southern and Northern countries. A current and widely known example is @LIS (Alliance for the Information Society), a cooperation programme of the European Commission aimed at reinforcing partnership between the European Union and Latin America in the field of the information society. @LIS was created by the European Commission on December 6, 2001. It was the result of political dialogue between the Heads of State or Government of European Union and Latin American countries, held in June 1999 in Rio de Janeiro.

Its declared aim is to “extend the benefits of the Information Society to all citizens in Latin America and to reduce the digital divide between those who have access to the new information technologies and those who are excluded from the information society”³⁰. It has a total budget of 85 million Euros, of which 75% are financed by the European Union and the rest comes from contributions made by the programme’s partners. It aims to address the needs of local communities, to foster dialogue in terms of policies and regulations and to increase interconnection capacity between research groups in both regions³¹.

The objectives of @LIS are the following: to encourage cooperation between European and Latin American partners by setting up working groups with members of both regions; to facilitate the integration of LAC countries in a global Information Society; to promote the dialogue among all actors and users of the Information Society; to improve interconnection between research groups of both regions; to address the needs of citizens and local communities; and to implement innovative, easy to reproduce applications, such as computer programmes, installation of materials, network implementation, etc. The programmes’s activities are focused on three intervention fields: Dialogues, Networks and Demonstration Projects.

@LIS project, which has been widely disseminated and has been granted government support in most Latin American countries, has succeeded in the promotion of innovative and interesting initiatives regarding information exchange on ICT use. However, it shares with the Digital Solidarity Fund the aim to foster the transfer of technological goods and services from developed countries into developing ones. Although one of the project’s goals is to foster the integration of LAC countries in a global Information Society, it does

³⁰ <http://europa.eu.int/comm/europeaid/projects/alis/> consulted in July, 2005.

³¹ http://europa.eu.int/comm/europeaid/projects/alis/plaquette_alis_es.pdf, consulted in July, 2005.

neither finance nor encourage the local production of technological goods and services or the export of Latin American goods and products to EU countries. On the contrary, it lays emphasis on the implementation of innovative, easy to reproduce applications, not necessarily originated in LAC countries. In other words, this project of solidarity and cooperation in the Information Society - developed within a more traditional framework than the Digital Solidarity Fund - runs the risk of being more in the service of technology transfer from developed into developing countries than in favour of encouraging productive innovation in LAC countries, thus increasing the already existing technological dependence.

Financing of technological production

Financing projects for technological innovations as part of national development come mostly from Science and Technology Institutes of countries themselves and vary according to the political and economic priorities of each country. Science and Technology (S&T) systems are of utmost importance in building the IS, given the fact that, either alone or in coordination with other sectors (companies, military sector, governments, etc.) they represent most part of technological innovations which are characteristic of this stage of social evolution. In this sense, they are of key importance in Southern countries since they set policies and strategies about scientific development and technological innovation, to be later applied to productivity areas, e-commerce, connectivity, all levels of education, ICT infrastructure and other sectors.

Just to mention some examples, in Argentina, the *Basis for a Mid-Term Strategic Plan in Science, Technology and Innovation*, published in July 2005 by the Secretariat of Science, Technology and Productive Innovation³², sets four quantitative goals:

- i) The number of researchers and technologists will be equivalent to 3 per 1,000 persons of the EAP (Economically Active Population).
- ii) The country's total investment in R&D will be equivalent to 1% of GDP.
- iii) Private investment in R&D will be increased to equal the level of public investment.
- iv) The 19 provinces which at the present time concentrate approximately 20% of R&D resources, will double their share in the total amount.

On the other hand, in the Project of Science, Technology and Productive Innovation National Plan, Year 2005³³:

“the main goal of the ICT's programme is: (a) to foster, promote and encourage the qualification and training of human resources, private investment, research and technological innovation for the development, use and efficient application of ICTs in productive and social sectors and in the State; (b) to optimize in a rational and efficient way the resources and quality/cost relationship of services rendered by public and private entities; (c) to integrate value chains and incorporate innovation to the production of goods and services in all economic sectors, aiming at turning comparative advantages into competitive ones; and (d) to improve the opportunities and quality of life of citizens through access, management and processing of information and quality knowledge.”

³² <http://www.secyt.gov.ar/>

³³ http://www.secyt.gov.ar/PNCTIP_2005/Proy_PNCTIP_2005_12oct04.doc

The *specific goals* in 2005 are focused on the fostering and promotion of research projects, development and innovation of computer and electronic communication systems, industrial software and contents. This may allow, among other things, to define partnership strategies aimed at regional productive development (digital productive passages), which will bring about internal changes (productivity, business management, etc.) as well as external changes (competitiveness, strategic alliances, productive chains, etc.) to those enterprises taking part; and at improving the organization, planning and control of production; management and trading of goods and services (e-commerce); update and optimization of logistics and transport systems and inventory control; financial management and flow of funds.

In Brazil, the Ministry of Science and Technology has implemented the programme of Information Technologies, which includes a development strategy based on human resources, technologies and institutional flexibility. SOCINFO's aim is to integrate, coordinate and promote actions for ICT use, thus enabling the Brazilian economy to compete in the global market and contribute to the social inclusion of Brazilian people in the information society. The Programme includes lines of action related, among others things, to market, employment and opportunities³⁴, and proposes to foster enterprise competitiveness, increase the number of small and medium enterprises with access to the Internet, support the implementation and regulation of e-commerce in the country and in regional economic blocs (Mercosur, European Union, NAFTA, etc), broaden the offer of new forms of work through the intensive use of ICTs and promote an "entrepreneurship" culture in ICT-economy related businesses.

In Chile, the National Commission for Scientific and Technological Research (CONICYT³⁵), through FONDECYT (National Fund for Scientific and Technological Development) and FONDEF (Fund for Fostering Scientific and Technological Research) aims to take advantage of the scientific and technological innovation capacities of universities and R&D institutions in the country, in order to enhance productivity and competitiveness within the main sectors of the Chilean economy.

In Mexico, S&T is clearly aimed at the technological modernization of the entrepreneurial sector. The Technological Modernization Board of CONACYT³⁶ (National Council on Science and Technology) offers Industry Support Programmes. Among them, there is the Technological Modernization Programme (PMI)³⁷, aimed at encouraging technological modernization of SMEs, agricultural, industrial and manufacturing sectors, agricultural sub-sectors and related services, as well as the creation of an active market of technological services for SMEs, contributing to their technological modernization. The Research and Development Fund for Technological Modernization (FIDETEC) encourages private investment for the development and implementation of projects involving innovations, development of high-risk and high-merit technologies by means of the use of scale economies. The objective of the Technological Centres Programme (PCT) is to support micro, small and medium enterprises. It focuses on two goals: to improve local access to technology services, particularly for micro, small and medium enterprises through selective support to extend and strengthen the existing network of technological centres; and to

³⁴ <http://www.socinfo.org.br/sobre/programa.htm>

³⁵ <http://www.conicyt.cl/>

³⁶ <http://www.conacyt.mx/>

³⁷ <http://www.conacyt.mx/dat/prog-antiores.html>

support the different entrepreneurial sectors to solve their technological problems and cover their needs in terms of specialized technology services.

In spite of not being sufficient to finance technological production and innovation, thus allowing competitiveness at a global level, and lacking economic resources, national financing mechanisms for science and technology seem to be better focused, at least in terms of their goals, on projects which link the production - and not only consumption - of technologies to national development and, in some cases, to macro-regional development.

4. Innovative policies and strategies proposed for Southern countries

Connectivity

According to a previous paper (Finquelievich, 2004), in order to benefit from the opportunities provided by the Information Society, citizens must be prepared for the economic, sociocultural and technological advances that transform the world. *Citizens' e-readiness is described as the degree in which a country's society is qualified to participate as proactive agent in the different sectors and levels of the Knowledge Economy, and the ability to accept the challenges posed by the new economic and technological environment.* (IAP, 2000). This e-readiness needs the following elements, among others:

- Access to ICTs infrastructures: hardware, software, connectivity, etc.
- ICT training (not only technological literacy, but also education in business management, organizations, etc. using ICTs).
- Life-long education and training in courses, professions and skills related to the Knowledge Economy (KE).
- Fast, free or low-cost access to the Internet.
- Information and creativity to identify the opportunities offered by the KE.
- Social will, information and organization to demand from governments the ICTs infrastructures, innovative systems in education, legislation and public information, which are necessary to make good use of opportunities offered by the KE.
- ICTs effective use. According to Gurstein (2003), *the Effective Use can be defined as the capacity and opportunity to successfully integrate ICTs into the accomplishment of self or collaboratively identified goals.*

Public and private provision of connectivity services contributes to the e-readiness of Latin American people. Although cybercafes do not ensure important e-readiness factors, such as will and social organization (as Argentine cooperatives do), they provide access to infrastructures and a fast, low-cost access to Internet, training, access to information and opportunities for the effective use of ICTs. Apart from providing low-cost access, cooperatives and community telecentres, contribute to the empowerment of communities and to the democratization of telecommunications.

Is the success of community telecentres, cooperatives and cybercafes in LAC - which at least partially fulfill the access needs of some of the poorest sectors of the population, people living in the interior of the country, low-populated and remote areas as well as of women – indicating that the promotion of connectivity and e-readiness must be entirely left in the hands of private investors or the organized civil society? *Not necessarily, and certainly not without regulations.* However, these private initiatives have taken the place left – or inefficiently fulfilled - by the lack or deficiencies of State policies aimed at connectivity and at reducing the renowned “digital divide”. What is the role of the State in the access and integration of the Information Society, apart from the already mentioned provision of telecommunication infrastructure networks?

Fulfillment of social needs

Cybercafes, which are mostly the result of private micro enterprises, represent at present the access door to cyberspace for almost half of Argentine Internet users and for a large number of Latin American people in different countries. Telecommunications Community Cooperatives (civil society organizations managed as enterprises) not only provide services to a significant number of Argentine people, but are about to become important actors in the world of communications and empowering agents within their communities. Community telecentres also act as community centres that offer different services to their communities and play an important role in their empowerment. According to Steven Johnson (2001), it is within societies themselves, the capacity to become self-organized in non-hierarchical emerging systems,³⁸ finding the best solutions to their problems and needs. Micro enterprises which have accessed communication through the work carried out by cooperatives and connectivity by means of the setting-up of cybercafes would be an example of decentralized social self-organization, aimed at fulfilling a social need that is insufficiently - or unsatisfactorily - met by the State.

However, it would be misleading to remain (only) with this idea. Given the fact that the implementation of cybercafes is not the result of their owners' social initiatives, but mainly of private profit-oriented initiatives, this concept fails to take into account the access needs of the society as a whole. This is the reason why there are large numbers – in absolute terms - of cybercafes in capital cities, large and medium-sized cities, urban areas with universities and tourist attractions. Part of the low-income population or people living in remote and low-populated areas continues to be excluded from access, other than that provided by telecommunication cooperatives or community organizations. Moreover, connectivity in itself is not sufficient to integrate people to the Information Society. It is necessary to train individuals and groups, to gather people to undertake enterprises and to make use of the Information Society's tools for human development purposes among other things.

Does this mean that the State should be in charge of implementing and managing cybercafes, as it has been recently attempted? Absolutely not. This paper intends to prove that it is not always necessary for the State to provide social connectivity equipment, although it is indeed essential for it to regulate and optimize the operation of private equipment for public use.

To regulate implies to set regulations in terms of equipment (for example, hardware quality), comfort of users, times of use, and to facilitate the setting-up of cybercafes in low-populated areas through tax allowances or others, and to ensure that community organizations reach agreements with cybercafes in order to use their infrastructure for social purposes, etc. To optimize implies, in this case, to enhance the roles of cybercafes, including training courses in ICT use, their use for social purposes, etc. In this way, the State is relieved from the need to implement expensive infrastructure, and at the same time, ensures access to Internet and to related services to all people.

On the other hand, once the population is acquainted with the daily use of cybercafes for all kinds of communication purposes, and knows and uses community telecentres and Telecommunications Community Cooperatives on a regular basis, they will be more willing to progress towards other uses of these technologies, beyond mere access and

³⁸ According to Johnson, emergence is when simple elements spontaneously self-organize without explicit rules to come up with an intelligent behaviour.

consumption, thus contributing to the empowerment and human, economic and social development of communities.

In the case of cooperatives, regulation is performed both by the State and by the cooperative's regulations. The role of the State, apart from that of possible partner, as in the case of the creation of a telecommunication mixed enterprise (state-cooperative), is to grant tax allowances or exemptions, set regulations, etc.

The state's new pioneering role in the Information Society

As posed by Gómez, Martínez and Reilly (2001), the *digital divide*, which usually refers to inequities in the access to new ICTs, particularly the Internet, is not the cause but the expression of the existing social, economic and political gaps, at global, national and local levels. Focusing only on the digital divide will not help communities to improve their living conditions, overcome poverty or have a more equitable access to goods and services. Therefore, one of our main conclusions is that LAC countries should build a new economy - the economy of Information Society - and adapt it to the needs, advantages, challenges, obstacles and potentialities of the region, although we are yet uncertain of its effectiveness to reduce poverty in the region.

For such purpose, providing access to all citizens or expanding government e-management is not enough. In order to develop and redistribute wealth in the so-called New Economy (or Information Society / Economy) it is essential to *have control over the economy and over the infrastructure networks on which it is based*. Having access to Internet or more computers, or even setting-up networks of telecentres do not necessarily introduce us into the Information Society. This may endanger the projects likely to be developed by governments, as their objectives may end up being aimed at finding out the level of citizen access or the number of existing e-government portals, or the number of schools with access to the Internet. And notwithstanding the fact that this is an essential first step, it does not contribute to develop an Information Society economy.

Most Latin American government programmes lay emphasis on connectivity, focusing on this concept, not so much in terms of providing ICT infrastructure networks, but access to public equipment for Internet access, such as telecentres or infocentres. For ICTs to have a positive impact on human development processes, it should be taken into account that connectivity is not an end in itself, but a tool that may help to build specific solutions to people's problems and needs: employment, health care, social and food programmes, social development, economic development, income generation, community organization, political participation, etc. The important thing is not connectivity in itself, which may lead to another form of passive consumption of goods and services, but the use that is made of it. Increased sustainable development or poverty reduction, are not achieved by means of the sole access to ICTs; it is necessary to strengthen the necessary capacities to use, adopt and produce them. These are key factors if the Internet is to be used as a tool in the service of human development processes. (Finkelievich et al., 2004).

At the present time, the outstanding role played by the private sector in terms of technology massification and reinvention of systems, as well as the role played by the social sector in the dissemination and social appropriation of technologies is clearly evident. What is then, the role played by the State in terms of social integration to the Knowledge Society?

In a previous paper (Finkelievich and Finkelievich, 2005) we stated that *the role of the State is to anticipate the needs and interests of the different social actors and be prepared for their legislation and control, as well to establish an operative coordination among them*. For this reason, the activity of LAC governments should be aimed at turning countries into pioneers in terms of technological, social and economic management. In order to achieve this, it is necessary to encourage technological and scientific production, together with specialized training, knowledge management and the use of existing brains, avoiding “brain drain” and promoting “brain gain”. And above all, it lies on the ability to predict, through prospective studies, the trends towards technology needs and consumption of the population as well as the private sector offer. This will allow governments to act promptly, not in response to these trends, but anticipating them in what refers to legal framework, regulations, strategies and actions.

Governments are becoming aware of this need: for instance on July 28 2005, the Argentine Economy Minister, Roberto Lavagna, launched the SME Plan through the Net. The Plan’s objectives, among others are: digital literacy, increase the rate of computers per job posts, increase SME’s competitiveness and labour training in the sector. At the same time, three financing sources will be offered to obtain credits and subsidies. The plan will be implemented by the CAI (Integral Assistance Centre), the only contact centre in charge of evaluating if the needs of each SME merit a real solution.

This is still an early but significant symptom of the change in attitude of Southern governments with regards not only to financing the Information Society, but also to the very principles of IS building. Among the policies and strategies identified in Latin America and the Caribbean, the creation of knowledge and information management and the creation and dissemination of ICT-intensive goods and services, have only recently started to be considered as a source of wealth and thereby as a means of providing better social plans and a better integration of all people to the Information Society (Finkelievich et al., 2004). In many of the identified policies and strategies, the creation of knowledge and information management, the creation and dissemination of ICT-intensive goods and services was not considered until very recently (or was only briefly referred to) as a source of wealth and thereby as a means of providing better strategies for social and economic inclusion. This is the turning point to direct countries towards an Information Society that would provide a coherent social and economic development, thus allowing them to compete in the global market as providers of computer goods and services.

In short, it is necessary and urgent for governments of the region to implement integral policies in the sectors of telecommunications, informatics and ICTs in general, aimed at coordinating the technological, economic and scientific development strategies with initiatives for social, cultural and communication development.

The new role of civil society

On the other hand, civil society plays a key role in building the Information Society. (Finkelievich, 2004). In order to encourage an appropriate use of ICTs aimed at achieving poverty reduction and foster sustainable development, CSO should consider the following goals, both at local and regional level: to raise awareness with regards to the importance of the Knowledge Economy in terms of development, and to spread this knowledge among citizens and civil society organizations; to understand that the Knowledge Economy implies new opportunities for citizens and CSO and above all, for sustainable development;

to participate in the making of national, macro-regional and global policies, to build technological capacities in developing countries; to intervene for the purpose of reducing the negative impacts the Knowledge Economy may have on fragile economies and vulnerable social groups; to work in favour of increasing e-readiness among citizens; to impose a new vision: to go beyond the common issues of connectivity, access and open or “free” source software, and to start focusing on having at least partial control over Internet infrastructures, considering that in order to develop and redistribute the wealth of the *Knowledge Economy*, it is necessary to have control over it. *Access to the Internet, more computers or the implementation of telecentre networks do not necessarily imply the integration of communities into the Knowledge Economy.*

Possible strategies for civil society

- To propose and create affordable and easy-to-use technologies for ordinary citizens. These technologies could ideally be linked to technological literacy projects and/or self-employment programmes. If they turn out to be successful, they could be exported to other nations.
- To develop multidisciplinary research on the socio-economic effects of technological exchange and cooperation among macro-regions (e.g.: Latin America, India, China, South Africa), focusing on the implementation of ICTs for development, full integration into the Information Society and poverty reduction.
- To identify partners in countries of developing macro-regions in order to build networks, aimed at developing cooperation networks.
- To participate in negotiations between national governments and telecommunication companies, to ensure the regulation of telephone services, wireless communications and the access costs for users, as well as an equitable distribution of infrastructure within countries and the promotion of multistakeholder synergies (with the participation of the public and private sector, civil society, the academic sector and international cooperation institutions), which is essential for the implementation of actions aimed at socioeconomic development through ICT use.

Civil society needs to establish constructive alliances among the different above-mentioned sectors, in order to fulfill these development goals, encourage entrepreneurial capacities and people’s initiatives, thus helping them to seek information on business management and micro enterprises and get soft loans to finance technology-based initiatives. It is also necessary to develop actions aimed at ensuring that economic growth benefits are redistributed rationally among the population.

Finally, it is essential to relaunch and hold a long-term debate on the interactions between CSO and Knowledge Economy, not only as part of the path leading towards the 2005 World Summit on the Information Society, but also with regards to the process that will be followed after the Summit, which will lead to the fulfillment of stipulated objectives and goals.

5. And finally...

When discussing innovative strategies for Southern governments and civil society aimed at building the Information Society, it is necessary to take into account that multistakeholder cooperation and South-South exchange are essential to achieve fully integrated development towards the Information Society, on an equitable and well-balanced basis. For the building of this society to be really profitable for all parts involved, the following measures are suggested as source for debate:

With regards to government actions:

States must be the promoters and main users of ICTs, through e-government, education, S&T, public health, and social and economic plans. However, they should not act on their own but coordinate efforts with civil society, private enterprises and the academic sector. In this context, they should:

- Achieve multisectorial agreements between Southern countries and blocs of countries.
- Focus state priorities on laying down and maintaining telecommunication infrastructures to ensure universal access to information and communication to the entire population, even in low-populated and non-profitable areas. To this effect, it is worth taking into account the outcomes of the WSIS process³⁹.
- Achieve multisectorial agreements and negotiations with telecommunication companies aimed at laying down and maintaining all kinds of infrastructure, to ensure universal access to information and communications.
- Provide information regarding agreements to be dealt with by governments to civil society, the economic sectors involved (entrepreneurs, chambers, etc.) and S&T sectors that are related to the Information Society activities.
- Encourage the active participation of the above-mentioned sectors in discussions prior to the proposal of agreements, their implementation, regulation and control. This includes the exhaustive legal study of the agreements, including those aspects concerned with international legislation matters, economy and foreign trade, taxes, civil matters, labour laws and copyright, as well as strengthening the discipline and transparency in the implementation of agreements and their fulfillment.
- Negotiate the role of private companies in building, laying down and expanding infrastructures for the IS, through the creation of Mutual Funds aimed at the social use of ICTs, whose financing will come from a percentage of the revenues obtained by privatized companies.
- Negotiate with Computer and Telecommunication Chambers cost reduction, flat rates, etc. to encourage connectivity among the population.
- Maintain state regulation on the telecommunication market and open it to a larger number of investors and actors, thus avoiding private monopolies.
- Promote campaigns for the ongoing training in ICTs aimed at civil officers, SMEs, micro enterprises and community organizations.

³⁹ See, for instance, WSIS-03/GENEVA/DOC/5-S: *“Infrastructure is central in achieving the goal of digital inclusion, enabling universal, sustainable, ubiquitous, and affordable access to ICTs by all, taking into account relevant solutions already in place in developing countries and in countries with transition economies to provide connectivity and access to remote and marginalized areas both at regional and national levels”*.

- Create and manage public centres for Internet access, particularly in low-income or low-populated areas.
- To implement agreements with community organizations for the management and use of spaces for public Internet access.
- To implement agreements between national and/or local governments and telecommunication companies to obtain preferential costs in order to promote Internet use (e.g. flat rates).
- To implement agreements between national and/or local governments and cybercafes or private access centres to purchase “connectivity hours” for students and low income population.

With regards to S&T activities related to the information economy it is necessary:

- To carry out prospective studies related to the New Economy, including the evolution of the international situation, and the different possible scenarios for the diverse articulations between countries and blocs of nations.
- To develop labour integration strategies for scientists, particularly the younger ones, in order to discourage their emigration or *brain drain*, caused by frustration in view of the lack of opportunities, being then hired by research centres in industrialized countries.⁴⁰ In turn, encourage *brain gain*, maintaining migrant scientists and technicians in contact with institutions in their countries of origin, sharing their knowledge.
- To increase the national budget for S&T, particularly those areas related to the IS.
- To spot and define R&D priority areas for S&T related to the IS.
- To encourage productive partnerships among Universities, R&D centres and institutions, enterprises and regional and/or local governments.
- To develop high speed network interconnection in R&D centres⁴¹.

With regards to civil society actions:

- To participate in initiatives and negotiations regarding financing mechanisms aimed at building the Information Society for development in the different countries and regions.
- To take active participation - together with other social actors – in designing and implementing policies and strategies aimed at ensuring that technological innovations are used as the powerful tool they are, to favour sustainable development and poverty reduction
- To participate in the generation of new educational means or in the transformation of the existing ones for the purpose of ensuring citizens the training needed to act proactively in the Knowledge Economy, and not passively bear the consequences. There are opportunities for negotiation and participation in the design and/or renovation of higher education, in policies and strategies to encourage the production of contents and strengthen the relationship between the education system and the Science and Technology sector, among others.

⁴⁰ See on this regard the interview to Mario Albornoz: *Hay doble discurso sobre la ciencia*, in La Nación, February 28, 2004, www.lanacion.com.ar

⁴¹ Already proposed in the Meeting MERCOSUR/RECYT/COMISION TEMÁTICA SOCIEDAD DE LA INFORMACIÓN/ACTA N° 2/02, in 2002⁴¹.

- To seek and negotiate financing and technological assistance to contribute to the production of local contents.
- To claim access to ICT services through equitable and widespread development of national information infrastructures, integrated to international information and communication structures, aimed at ensuring universal and affordable access to all people.
- To participate in negotiations between national governments and telecommunication enterprises, for the purpose of monitoring the regulation of telephone services, wireless communication and access costs for citizens, as well as the equitable distribution of infrastructure within countries.
- To encourage multistakeholder synergies (with the participation of public and private sectors, civil society, academic sector and international cooperation institutions), essential for the implementation of actions aimed at the promotion of socioeconomic development through ICTs.
- To demand the provision of Information Society indicators from public institutions and the S&T sector, which would accurately reflect the economic and social impact of ICTs, thus allowing the evaluation and monitoring of public policies, as well as private initiatives and partnerships in this area. Alternative measuring methods are needed to evaluate the social and economic appropriation of technologies by communities.
- To participate in private and public sector discussions and decisions on systemic improvements in the operation and competitiveness of key sectors within national and regional economies through policies and strategies.
- To identify and disseminate new forms of using ICTs to solve the most important problems related to development: education, health care, urban and rural development, job creation, preservation of natural resources, etc.
- To encourage, at national and regional level, increased motivation for economic development through the inclusion of information media at all levels of public administration.
- To demand improved access to public sector information, which is essential for both citizens and companies to take advantage of existing opportunities in terms of settling in a different city, province or other country of the region. This information is important for administrative purposes (rights, duties, procedures for companies and workers, etc.), but it is also necessary for statistical and financial purposes.
- To encourage the increased participation of women in activities, education and training related to the Information Society. To promote before governments the equitable participation of women in decision-making activities related to access and use of IS infrastructure and equipment.
- To promote the capacity to generate economic initiatives among the population, helping individuals and groups to find information about management of micro-enterprises and soft-loans to finance technology-based undertakings.
- To develop actions aimed at ensuring the distribution of economic growth benefits among people.
- To hold a long-term debate on the interactions between CSO and the Knowledge Economy, as part of the process emerging from the WSIS.

For the different social agents:

Finally, it is always necessary to consider the proposals included in the WSIS Plans of Action, with regards to the need for follow-up and evaluation of the measures taken and to be implemented. In particular, to elaborate a realistic international performance evaluation and benchmarking (both qualitative and quantitative) through comparable statistical indicators and research results, should be developed to follow-up the implementation of WSIS goals and targets, taking into account different national circumstances.

Such proposals can be summarized as follows:

- The definition and adoption of a composite ICT development index (digital opportunity index), to be published annually or every two years.
- Implementation of indicators and benchmarking, showing the magnitude of the digital divide and keeping it under regular assessment in order to track global progress in the use of ICTs to achieve internationally agreed development goals, including those of the Millennium Declaration.
- International and regional organizations should assess and report regularly on universal accessibility of nations to ICTs.
- Gender-specific indicators on ICT use and needs should be developed, and measurable performance indicators should be identified.
- Develop and launch a web site on best practices and satisfactory-result projects, based on the compilation of contribution from all stakeholders.
- All countries and regions should develop tools aimed at providing statistical information on the Information Society, with basic indicators and analysis of its key dimensions.

The above represent an ideal area for multistakeholder cooperation as the development of indicators and task evaluations are extremely complex activities, which call for the coexistence of multiple perspectives, covering a wide and heterogeneous range of activities with diverse results and demands, including multiple actors and international, regional and national institutions, as well as public, private and mixed enterprises.

Clearly, none of these tasks ends at the threshold of the WSIS: on the contrary, this is the ideal triggering point to make progress in building an equitable, well-balanced, multistakeholder and essentially productive Information Society.

6. Bibliography

- Accuosto, Pablo and Niki Johnson, *Financing the Information Society in the South: A Global Public Goods Perspective*, Prepared for the Association of Progressive Communications (APC), ITeM, June 2004.
- APC, Currie, Willie and Anriette Esterhuysen (2005), *A New Policy Framework for ICTD: Presented for Discussion by the Association for Progressive Communications*, Draft, February 2005.
- Association for Progressive Communications, Bread for All, CRIS, Instituto del Tercer Mundo (ITeM), IT for Change and the Gender Caucus (2005), *Statement read by Anita Gurumurthy on financing the information*, WSIS PrepComm-2, February 2005, Geneva.
- Bassi, Roxana, and Silvia Rabadán (2002), *Centros Tecnológicos comunitarios: la experiencia argentina*. (<http://www.links.org.ar/siar.html>)
- Bedi, Arjun S. (1999), *The Role of Information and Communication Technologies in Economic Development – A Partial Survey*, Discussion Papers on Development Policy No. 7, Center for Development Research (ZEF), May 1999, Bonn. (http://www.zef.de/download/zef_dp7-99.pdf)
- Boscherini, Pablo, Marta Novick and Gabriel Yoguel (2003), *Nuevas tecnologías de información y comunicación: los límites en la economía del conocimiento*, Ed. Miño y Dávila – Universidad Nacional de General Sarmiento, Buenos Aires.
- Brown, Mark (2002), *Human Development Report 2002*. July 2002, Manila.
- Camacho Jiménez, Kemly (2001), *Internet ¿una herramienta para el cambio social?*, Fundación Acceso (<http://www.acceso.or.cr/publica/telecom/conocimiento22.shtml>)
- Castells, Manuel (1999), *Los Estados ya no pueden gobernar; solo negociar*, Interview - Diari de Barcelona, y Ajoblanc, Barcelona (<http://www.diaridebarcelona.com/coneheme/castells.htm>)
- Castells, Manuel (1995), *La ciudad informacional. Tecnologías de información, reestructuración económica y el proceso urbano-regional*, Alianza Editorial, Madrid.
- Castells, Manuel (1997), *The Information Age: Economy, Society and culture, Vol.I, II, and III*, Blackwell Publishers, Malden, Massachusetts.
- Davidziuk, Alejandra (2002), *Las TIC como instrumento de inclusión comunitaria y desarrollo social. El caso del Proyecto CTC*. (<http://www2.ctcnet.org/conf/program/materials02/International146.html> y <http://www.links.org.ar/siar.html>)
- d'Orville, H. (2000), *Information and communications technologies - a rapidly emerging dimension of development co-operation*. UNDP. (http://www.oneworld.org/media/net/undp_ICT.htm, <http://www.undp.org/info21/program/index.html>)
- ECLAC (2002), *Panorama Social de América Latina y el Caribe*, (http://www.eclac.cl/publicaciones/DesarrolloSocial/3/LCG2183P/Sintesis_2002.pdf)
- ECLAC (2005), *Políticas públicas para el desarrollo de sociedades de información en América Latina y el Caribe*, WSIS Latin American and Caribbean Regional Conference, 7-10 June 2005, Río de Janeiro.
- Finquelievich, Susana (Coord) (2000), *¡Ciudadanos, a la Red!*, Ed. La Crujía, Buenos Aires.

- Finquelievich, Susana (2000), *ICT and Local Governance: A view From the South*, en: Michael Gurstein, *Community Informatics: Enabling Communities with Information and Communication Technologies*, Idea Group Publishing, Hershey, USA.
- Finquelievich, Susana and Daniel Finquelievich (2005), *Puertas alternativas a la sociedad de la información: Accesos no gubernamentales para las poblaciones de bajos recursos o remotas*, en Revista RIADEL, *Ángulos emergentes en Internet*, Tercer trimestre de 2005. (<http://www.riadel.cl/revista.asp>)
- Finquelievich, Susana; Silvia Lago Martínez; Alejandra Jara; Ariel Vercelli, *TIC, desarrollo y reducción de la pobreza: Políticas y propuestas*. Buenos Aires: Instituto de Investigaciones Gino Germani, Facultad de Ciencias Sociales, Universidad de Buenos Aires. (IIGG Documentos de Trabajo, N° 37). (<http://www.iigg.fsoc.uba.ar/docs/dt/dt37.pdf>)
- Finquelievich, Susana (2004), *La sociedad civil en la economía del conocimiento: TIC y desarrollo socio-económico*. Buenos Aires: Instituto de Investigaciones Gino Germani, Facultad de Ciencias Sociales, Universidad de Buenos Aires. (IIGG Documentos de Trabajo, N° 40). (<http://www.iigg.fsoc.uba.ar/docs/dt/dt40.pdf>)
- Finquelievich, Susana (2003), *ICT and sustainable development in Latin America and the Caribbean*, en Stewart Marshall and Wal Taylor, Editores: *Proceedings of 5th International IT in Regional Areas Conference 2003*, pp. xii-xxv, Central Queensland University, Rockhampton, Queensland.
- Finquelievich Susana (2005), *Desarrollo local en la sociedad de la información. Municipios e Internet*, La Crujía, Buenos Aires.
- Flor, Alexander (2001), *ICT and Poverty: The indisputable Link*, SEARCA, paper for the Third Asian Development Forum on “Regional Economic Cooperation in Asia and the Pacific”, Asian Development Bank, 11-14 June 2001, Bangkok.
- Global Knowledge Partnership (2005), *Advancing ICT Solutions for Development through Cross-Sector Partnerships with a Special Focus on the Middle East and North Africa*, Forum Report, May 2005, Cairo.
- Gómez, Ricardo and Juliana Martínez (2001), *Internet... ¿para qué?: Pensando las TIC para el desarrollo en América Latina y Caribe*, IDRC y Fundación Acceso.
- Gómez, Ricardo; Juliana Martínez and Catherine Reilly (2001), *Paths Beyond Connectivity: Experience from Latin America and the Caribbean*, Cooperation South, UNDP. (<http://www.idrc.ca/pan/ricardo/publications%5Cindex.html>)
- Gómez, Ricardo; Ospina, Angélica (2001): “The Lamp without a Genie: Using Telecentres for development without expecting miracles”, *Journal of Development Communication*, Vol. 12, no. 2, December 2001
- Gurstein Michael (2003), *Community Innovation and Community Informatics Building National Innovation Capability from the Bottom Up*, December 2003.
- Heeks, Richard (1999), *Information and Communication Technologies, Poverty and Development*. Development Informatics Working Paper Series, Paper No. 5, IDPM, junio de 1999, Manchester. (http://www.man.ac.uk/idpm/idpm_dp.htm#devinf_wp_y <http://idpm.man.ac.uk/idpm/diwpf5.htm>)
- Hénault, G. (1996), *Employment and income generating activities derived from Internet Access*. An IDRC Study, septiembre de 1996. (<http://www.idrc.ca/acacia/studies/ir-henlt.htm>)

- Herzog, Roman (2000), *Internet en América Latina. Entre el comercio electrónico y la cabina pública*, en D+C Desarrollo y Cooperación No. 1, p. 8-14, January/February 2000. (<http://www.inwent.org/E+Z/1997-2002/ds100-3.htm>)
- Hilbert, Martin, and Jorge Katz (2003), *Building an Information Society: a Latin American and Caribbean Perspective*, CEPAL. (<http://www.eclac.cl/cgi-bin/getProd.asp?xml=/publicaciones/xml/2/11672/P11672.xml&xsl=/ddpe/tpl-i/p9f.xsl&base=/tpl/top-bottom.xsl>)
- ITU (2002), *Actualidades de la UIT, Indicadores mundiales, tecnologías de la información para la región de las Américas*, May 2002.
- Martínez, Juliana (2001), *Internet y políticas públicas socialmente relevantes: ¿Por qué, cómo y en qué incidir?*, en M. Bonilla y G. Cliche (editores), *Internet y sociedad en ALC*, FLACSO Ecuador-IDRC.
- Molloy, Molly (1997), *Recursos en Internet relacionados con América Latina*. (<http://investigacion.org.mx/lared/abrmay97/textos/articulo2.html>).
- Nunes, Mark (1999), *The Realities and Virtualities of Cybercafes*, presented at Popular Culture Association Conference, San Diego, California. (<http://www.gpc.edu/~mnunes/cybercafe.htm>)
- Pineda de Alcázar, Migdalia (2003), *Desafíos latinoamericanos frente a las nuevas tecnologías y las políticas de información y comunicación*, PCLA - Volume 4 – N° 4. July / August / September 2003. (<http://64.233.161.104/search?q=cache:xqpAV9PHNsAJ:www2.metodista.br/unesco/PCLA/revista16/artigos%252016-2.htm+%22infraestructuras+de+comunicaciones%22+%2B+%22Am%C3%A9rica+latina%22&hl=es>)
- Proenza, Francisco (2002), *e-Para Todos: una estrategia para la reducción de la pobreza en la era de la información*. FAO.
- Reilly, Katherine y Raúl Echeberría (2003), *El Papel del Ciudadano y de las OSC en el e-gobierno. Un estudio de gobierno electrónico en ocho países de América Latina y el Caribe*, APC.
- Reilly, Katherine y Ricardo Gómez (2002), *Comparing Approaches: Telecentre Evaluation Experiences in Asia and Latin America*, Electronic Journal of Information Systems in Developing Countries EJISD (2001) 4, 3, 1-17, reprinted in International Information & Library Review (2002) 34.
- Surman, Mark (1999), *Balancing Mission and Money Building. Sustainable Electronic Networks for Civil Society, Case studies from the Association for Progressive Communications (APC)*. (<http://www.commonsgroup.com/articles/fulltext.shtml?x=326>)
- WSIS (2003), *Plan of Action – World Summit on the Information Society* (<http://www.itu.int/wsis/docs/geneva/official/poa.html>)