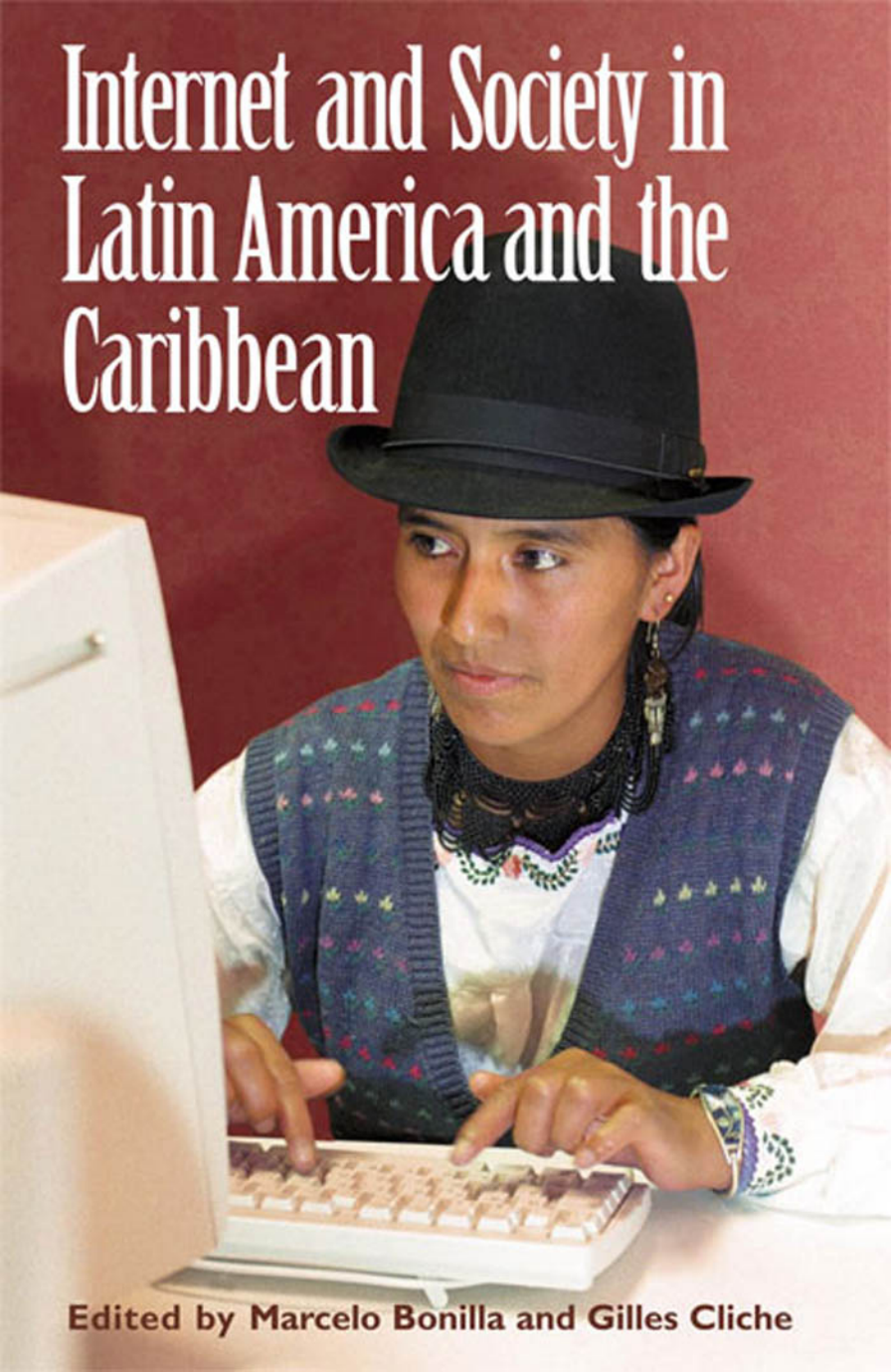
# Internet and Society in Latin America and the Caribbean



Edited by Marcelo Bonilla and Gilles Cliche

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# Foreword

In July 1999 the Latin American Faculty of Social Sciences (FLACSO-Ecuador) and the International Development Research Centre (IDRC, Canada) decided to sponsor under their PAN programme <http://www.idrc.ca/pan> a competition for research projects on the social impacts of information and communication technologies (ICTs) in Latin America and the Caribbean.

The key objective of the competition was to foster efforts to identify and evaluate the changes that the Internet is bringing about in different areas that are strategic for the region's development (education and culture, public health, governance, democracy, productivity, human rights, administration of justice, and environment), as well as to promote research into methodologies and the development of applications in this field. The research-competition programme focused on issues relating to equity and the need to address the technological and socioeconomic divide that has traditionally excluded certain urban and rural groups.

A jury panel of international experts defined the parameters of the competition and, in early 2000, selected the eight winning projects. This publication presents the results of those research projects in the hope that they may help to break new ground in the region by stimulating debate about public policies for the Internet, its potential significance for encouraging citizen participation and, consequently, for building a new political culture based on the right to communication and culture and Internet rights that will provide citizens with free access to knowledge and information under principles of social and cultural equity.

The ideas and experiences presented in this book are the product of the eight winning research projects from the competition. They address the social impact of the Internet in the context of schooling (case studies from Colombia, Chile and Argentina) and local governance (case studies from Montevideo, Buenos Aires, and the Chilean towns of Rancagua, Puente Alto and El Bosque). The volume also includes a description of two tools that were developed in the course of the competition. The first was prepared in Colombia to measure the social impact of the Internet on the basis of social variables (gender, education, and media access, among others): It was developed

for Linux platforms and is available at <http://www.colnodo.apc.org/registro>. The second was prepared in Argentina as a multimedia application for introducing children to a culture of citizen participation in relationship with their surroundings and their local community: this tool has been published at <http://www.telpin.com.ar/interneteducativa/proyectounq/unq/web>.

The research projects themselves, as well as the tools described above, were presented during an international seminar on Communication, Internet and Society in Latin America, which was held in Quito on May 16 and 17, 2001. This book also contains articles written by six experts who participated in that event, relating to copyright and the Internet; a proposal for franchising telecentres; public policies for the Internet; an analysis of MISTICA, a virtual community experiment; and a description of a project for monitoring Internet policies in Latin America and the Caribbean.

Fernando Carrión
Director
FLACSO-Ecuador

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We also wish to thank the FLACSO-Ecuador team, and in particular Wilson Pancho, manager of the computerization division, for their assiduous work in designing the competition's web site and the research programme's Internet communication systems. As well, we are grateful to Cristina Wholerman for her help with the organization and logistics for the planning sessions that were held during the project's preparatory phase.

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Marcelo Bonilla and Gilles Cliche
Editors

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# Introduction

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# The Internet[1] and its impact on Latin American and Caribbean society: Research and dialogue

Marcelo Bonilla and Gilles Cliche

## Introduction

Globalization is a process of aesthetic, cultural and economic change, characterized by a series of complex phenomena at both the global and the local levels – for example, there is an ongoing reconfiguration of the functions of states as the principal players in social policy and as the wielders of sovereign jurisdiction within their territories. Other phenomena that characterize the globalization context are the explosion of old patterns of government organization into an infinite number of national expressions and the growing role of large transnational enterprises as their international capital base expands.[2]

In parallel with this reshaping of international power relationships, in which the nation-state has yielded to a dominant order based on the disproportionate accumulation of wealth among the business elites of the so-called developed world, new social actors are appearing (women's movements, indigenous movements, youth movements, human rights organizations, etc.) as the expression of a struggle to enforce respect for their individual and collective rights through new concepts for reconstituting their identities and reshaping power relationships at the local and regional levels. These groups are seeking a more equitable social model, in the face of the obviously unjust distribution of material and symbolic goods and the state's abandonment of its leading role in social policies.

We may summarize these ideas of globalization as representing a new field of competition in which two different currents and philosophies collide: on one hand, the spreading imposition of a system governed by large transnational consortia and based on the principles of accumulation, utility, efficiency and productivity, and on the other hand, the resistance of local cultures and groups which, by actively reinventing their identities and ways of life, are striving to adapt and survive in the face of this dominant pattern. This process, at once global and local, tends to weaken national sovereignty, specifically that of developing countries, and to promote the concentration of wealth and knowledge among the elites of industrialized countries.[3]

All of these global and local phenomena are occurring in parallel with the gradual widening of the gap between rich and poor countries, between the rich elites and the impoverished majorities of countries that are classified, by agencies addressing the poverty problem, as poor or underdeveloped.[4]

This gap is not solely economic, and it cannot be measured adequately by indices of income per capita: it is also a symbolic divide, characterized by an unequal distribution of knowledge and of cultural goods that are essential for an individual, culture or society to act and survive in a globalized and highly competitive society. José Bengoa(1999: 24–25) speaks of the current distribution of cultural goods (in particular, education) in the following terms:

> If the distribution of income is in general unsatisfactory, at both the international and the national levels, we must say that the distribution of knowledge is even worse. While the ratio between the lowest and highest quintiles internationally is 0.007 to 92.40 in terms of income distribution, a rough calculation using UNESCO data shows that expenditure on education per student in the lowest quintile is 0.001, compared to a concentration of educational expenditure of 95.5 in rich countries.

This gap between worlds, regions, countries and groups of people takes on complex dimensions because of persistent tendencies towards cultural exclusion, through ethnic, racial, gender[5] or generational segregation. The consequence of this new global model of inequality and exclusion makes itself felt in the inability of marginal social groups and segments to participate in society.

The new information and communication technologies (ICTs), especially the Internet, which are growing at a pace unprecedented in human history,[6] are part, and indeed strategic instruments, of this inequitable concentration of symbolic and material incomes at the world level. Cyberspace and its "Web" constitutes a field that stimulates the unequal and inequitable exchanges that characterize the present-day world of globalization and exclusion;[7] the selective distribution of this tool and its language produces and deepens the symbolic and material gap referred to above.

In Latin America and the Caribbean, use of this technology has spread widely in geographic terms, but it is of benefit only to specific groups: the national and regional elites.[8] Thus, the first problem that the Internet poses in Latin America is that of equity: how to employ it as an instrument that has the potential to generate "equitable" exchanges of knowledge that will benefit the great majority of the population.

This situation of cultural exclusion points to the need for research into the social impact of the Internet within the cycles of cultural and economic production and consumption in Latin America and the Caribbean, a region in which we find, at the same time, the selective spread of the Internet, massive growth in the consumption of symbolic products or their messages via television, and steady impoverishment among the people, characterized by sharply declining incomes.[9] From this viewpoint, research into the social

impact of ICTs is useful for shedding light on the design and implementation of public policies relating to communications and Internet culture that will seek to reverse the dynamics and realities of cultural and material exclusion that characterize the region.

This is the historical context in which the Latin American Faculty of Social Sciences (FLACSO, Ecuador) and the International Development Research Centre (IDRC, Canada) decided to sponsor in July 1999 a competition for research projects on the social impacts of information and communication technologies (ICTs) in Latin America and the Caribbean. This initiative led to the selection[10] within the region of eight research projects on the social impact of ICTs in four priority development areas: (1) education and culture, (2) democracy and citizenship, (3) law and justice, and (4) methodologies for evaluating the social impact of the Internet.[11] All of these themes stress the problem of equity and the need to close the technological and socioeconomic gaps that have traditionally excluded certain rural and urban groups in Latin America and the Caribbean.

This introductory paper does not attempt to summarize or describe the eight winning projects. We have focused on a limited number of critical issues[12] common to all the research projects and articles that make up this book and that are vital for the study and design of public policies for communication and Internet culture consistent with the principle of social and cultural equity.

The reader will have the opportunity to learn about the eight research projects in the main body of this book, which also includes contributions from six specialists[13] on Internet copyright issues, public policies relating to the Internet, a proposed franchising system for telecentres and an analysis of experience with the MISTICA virtual community in building an equitable and socially responsible Internet culture.

In the first part of this paper, entitled "The instrumental view of technology and the construction of a new ***habitus*** for the flow of knowledge", we contrast Internet practices that were identified in school projects (based on case studies from Chile and Colombia) and in governance at the municipal level (based on case studies from Buenos Aires, Montevideo and the Chilean towns of El Bosque, Puente Alto, Los Andes and Rancagua) with the concept of the Internet as a new symbolic field for the flow and exchange of cultural capital and as a system for distributing signs and symbols (knowledge) through an innovative education initiative (introduction of the Internet in the school system of Pinamar, Argentina), as well as the establishment of the MISTICA virtual community.

In the second theme for consideration, entitled "The Internet, a space for reproducing the dominant order and the emergence of new cultural propositions", we examine how the logic underlying traditional uses, viewpoints and power relationships is reproduced by introducing ICTs into schools and by experiments in local governance (analyzed in the case studies referred to above). We also look at the tensions that arise between this

dominant philosophy and the emergence of a new way of representing and constructing social relationships mediated by the Internet, a contradictory dynamic that poses the principal challenges for managers of ICT projects and policies, in terms of incorporating them creatively into local spaces and cultures as a language and instrument for supporting social change. In this analysis, we include a case study that addresses the incorporation of ICTs into the schools of two communities (Tanti and Zapala) in Argentina.

Under the third theme, entitled "Challenges in building a fair and equitable legal framework for the Internet in Latin America and the Caribbean", we consider the importance of reinforcing the "right to communication and culture" and "Internet rights", as a starting point for the strategic changes that are needed in the juridical frameworks of Latin America and the Caribbean consistent with the construction of an Internet culture that respects personal and collective rights. We focus on the issue of ICTs in relation to the individual's right to privacy, problems of copyright law, and the right to communication as the foundation of a system of community telecentres.

The conclusion of this paper, entitled "The Internet: an environment and a tool for building a new political culture", presents some ideas about the need to promote alliances among civil society organizations, the academic world, government and the private sector, as a way to build an information society based on freedom of communication, citizen participation and collective access to knowledge. These ideas are the central thread of the conclusion.

## The instrumental view of technology and the construction of a new *habitus* for the flow of knowledge

A common finding of researchers who have examined the social impact of the Internet on schools as well as on the notions of citizenship and governance is the predominant tendency to make use of this tool in a merely "instrumental" or "technical" way, thereby losing sight of its potential as a language and system of representation through which young people and citizens create and recreate relationships and their visions of themselves and of society (see José Cabrera Paz on "The conceptual focus"). The predominant approach today neglects the social dimension and function of ICTs as part of the processes of producing, consuming and distributing knowledge.

Miguel Angel Arredondo, in his research report on "Introducing new information and communication technologies in two rural schools of central Chile" (see discussion on "the school routine and the use of ICTs"), argues that this lack of integration is reflected in the ritual practices that school authorities insist on as compulsory rules for students wanting to use computers (e.g. requiring children to cover their shoes with plastic bags before entering the computer room, and the steps they must take, turning off the equipment, covering it up, etc.). These habits reflect a view that makes the computer something sacrosanct, while in effect reducing it to just one more technical

tool within the school system. He notes that priority is given to technical training (which converts the computer into a simple database tool) rather than stressing its potential as an instrument for communication and creativity.

José Cabrera, in his study of cultural practices with the Internet among school students in Bogota, describes in detail the failure to integrate the Internet into school life and how its functions have been reduced to those of a conventional school encyclopaedia (see his "The crisis of administered knowledge"), which merely perpetuates conventional teaching methods and learning approaches (such as slavishly memorizing texts without an investigative and critical mindset), frustrating efforts to encourage more participatory and creative learning. Reducing ICTs to a tool in this way loses sight of their potential for fostering new relationships, new teaching methods and new forms of communication and learning.

We find similar phenomena in terms of the instrumental use of the Internet in experiments with introducing ICTs at the local government level. The research team headed by Susana Finquelievich, which examined experiments for incorporating ICTs into local government in Buenos Aires and Montevideo, shows how the Internet has played only a very conventional role in disseminating information, as a kind of newsletter "promoting traditional governance", without attempting to foster a culture of citizen participation or "cyber citizenship" (see their "Does Buenos Aires have electronic government?").

Uca Silva, in a study on the social impact of new ICTs in the Chilean towns of El Bosque, Puente Alto, Los Andes and Rancagua, shows how the introduction of ICTs in these towns has merely served the internal needs of local governments to improve their political information or marketing services (see Silva on "The relationship between the municipality and the community").

As we can see, the instrumental approach to using ICTs is the predominant one, both in the school system and in local government, and it fails to appreciate the Internet as a new language or system of representation and communication: learning to use it requires the transmission of cultural or symbolic capital that will empower citizens and allow them to appropriate this strategic tool.[14]

The predominance of the instrumental view of the Internet as a tool divorced from the context of cultural change, power relationships and changes in symbolic systems and the circulation of knowledge[15] means that we must develop and use new approaches, methodologies and teaching methods in order to make social use of ICTs. Particularly noteworthy in this regard is the work of the team from the National University of Quilmes, coordinated by Ester Schiavo, which set out to create a new ***habitus***[16] for the citizen, i.e. new ways of perceiving, acting and participating in society through the innovative use of ICTs, by incorporating them into the school system (see their "The network society as a new field").

Another relevant experiment in this area was conducted by the MISTICA virtual community, managed by Fundación Redes y Desarrollo (FUNREDES,

Dominican Republic), which has attempted to develop a "cyberculture" based on the principles and practices of solidarity and democratic participation among the members of this networking community. We have included a detailed description of this experiment in the present book.

As will be appreciated, there are two conflicting tendencies or approaches when it comes to introducing ICTs in schools or in local governance: the predominant approach, which regards the Internet as a technical tool, versus the approach that seeks to restore its potential as a system of communication and of constructing representations, new forms of learning and social participation. These two tendencies are part of a more complex process in which two currents collide, the one that produces conventional forms of domination or power and the other that subverts that order, as the sign of a new way of learning beyond the traditional education system, a new order that is based outside the school, in spaces where we can see the emergence of new forms of interaction and socialization (see José Cabrera on the "horizontal context"[17]). In the next section, we consider how these two currents meet.

## The Internet, a space for reproducing the dominant order and the emergence of new cultural propositions

The Internet does not produce change by itself, since it is surrounded by cultural, political and social orders and contexts and, generally, has been converted into an extension of existing power institutions. In the education field, Arredondo shows how the disciplinary system of the school is reproduced through the use of ICT and how this new language or tool is reduced to a means of exerting control and power within the school. The computer classroom becomes a strategic part of the school disciplinary system (e.g. when students are punished by barring them from the room).

On the other hand, this space becomes a point where the teacher loses authority, since the informal dynamics of interchange that it generates between students during computer practice tend to neutralize and diminish the teacher's capacity to control. In this respect, the virtual classroom is an arena in which students' playful pursuits collide with teachers' authority: it is an amorphous, ill-defined field, one without rules or a predetermined structure to order the process of learning and teaching. Arredondo and Cabrera see this failure to incorporate ICTs into school culture as a product of the lack of a comprehensive teaching philosophy, which is just part of the broader issue of bringing about in-depth change in the relationships and methods that apply to teaching and learning.

The virtual classroom, through the computer screen, becomes a way of escaping the teacher's control. The Internet marks the frontier between experience inside and outside the classroom, inside and outside the educational order. This point of conflict also marks the tension between the book-based culture, conceived as a form of pedagogical relationship and

control over the student, and new forms of learning by navigating in cyberspace, which students pursue outside the school and away from the teacher's control. These practices combine televised codes, sound, reading and chat rooms as a new form of socialization and a way of building new identities (see José Cabrera on the "horizontal context").

This duality between the two opposing currents or philosophies requires a systematic effort at integration and synthesis that will incorporate the language of ICTs into school life and local culture, as part of a meaningful change in conventional teaching and learning methods. On this point, according to the evaluation by the research team coordinated by Paula Pérez and Adriana Vilela of successful experiments in incorporating ICTs into two rural schools in Argentina, success made itself felt in the ability to incorporate the Internet into local community life and to articulate education projects with efforts at improving local governance.

From this perspective, we may conclude that one of the factors for success in building new teaching methods to make use of the Internet depends on incorporating it into the local culture and on the responses that it offers to local needs (see Paula Pérez et al., on "Goal"[18]) through using it strategically in accordance with principles that will allow for the horizontal and equitable exchange of knowledge.

The same tension between traditional ways of exercising power and the emerging Internet culture, external to institutions, can be seen in the area of citizenship and local governance. The projects that addressed this issue arrived at a common conclusion: introducing ICTs into current models of electronic government merely serves to reproduce paternalistic local power relationships. Uca Silva shows how the web sites of the Chilean towns studied are used as a conduit for promoting the image of local leaders and in this way diluting the link between the municipal government and the citizenry, which should be strengthened by the introduction of ICTs (see Silva on "The relationship between the municipality and the community").

Along the same lines, the team coordinated by Susana Finquelievich describes how local government practices in Buenos Aires and Montevideo do not encourage the use of ICTs, since this instrument is reduced to the function of a bulletin board or newsletter (via the Web) and loses sight of the kind of citizen interaction that could be achieved through the social use of ICTs (see their "Does Buenos Aires have electronic government?" and "The social impact of ICTs in Buenos Aires and Montevideo: similarities and differences").

In school life we find anachronistic and paternalistic power relationships surrounding the use of ICTs. In his ethnographic study, Arredondo describes how, in rural schools in Chile, Internet access and learning also depends on bonds of understanding and dedication between students and teachers (see "Theme 2. Achievers and non-achievers: schools and the perpetuation of the digital divide"). This point brings us to the need for ideas and activities to promote citizen-oriented teaching methods for ICTs, based on a new school

culture, as the basis for building more participatory and just societies in Latin America and the Caribbean. We shall delve further into this issue in the conclusion of this book.

The research sponsored by FLACSO and IDRC found that efforts to promote the use of ICTs in the schools and in local governments are often undertaken through isolated initiatives by groups of technical experts from different institutions. These initiatives are generally limited and kept within the traditional forms of power relationships (paternalism, promoting the image of local leaders, adapting technology to the school disciplinary system, etc.).

One way of neutralizing this tendency to reproduce the dominant culture through the instrumental use of ICTs is to foster projects that will articulate Internet use with integral approaches to local development and new citizen-oriented teaching methods (see Scott Robinson's "The components of a hybrid model").

## Challenges in building a fair and equitable legal framework for the Internet in Latin America and the Caribbean

A recurrent idea in much of the research, and one that arose throughout the discussions during the seminar at which the project results were presented, is the vital importance of consolidating the right to communication and culture, which includes Internet rights, as the key to ensuring equitable access to ICTs and fostering citizen participation. This is the central objective for the agenda of civil society organizations that promote social policies in different fields (health, education, local development, women's rights, cultural rights, etc.).

Uca Silva (see "Communication as participation") shows that an essential requirement for the exercise of citizenship rights is to use the right to communication as the basis for building links between local government and citizens, as a participatory relationship in which the citizen has the opportunity "to see, hear and speak", i.e. the right to communicate must be conceived as a horizontal relationship that allows citizen participation.

This new principle or right must therefore be made the basis for any rules governing the exchange of knowledge, the exercise of citizenship and the freedom of expression through ICTs. These ICTs are conceived as a tool and a language, the social application of which can provide horizontal support to the exercise and development of social policies (relating to education, health, social security, local development, scientific development, human rights, citizen participation, etc.: see Juliana Martínez on "The intersection between national policies and the Internet"). The adoption of a horizontal approach to communication, such as can be done through the Internet, would not only help to improve the level of political participation but would also make local governance (see Susana Finquelievich et al. in "Introduction: the reshaping of civil society") and social policies (see Juliana Martínez on the topic noted earlier) more transparent.

Yet, in promoting the right to communication and culture[19] through Internet rights, we need to strike a balance between the free flow of knowledge and ideas (conceived as a collective right) and the individual's right to privacy (conceived as a guarantee that protects a person's sensitivities). The research team coordinated by Carlos Gregorio (see "The right to privacy, intimacy and personal data") warns of the danger facing citizens in societies and states that lack a democratic tradition with respect to the possible violations of fundamental human rights that may occur through the indiscriminate use of personal information (on health, economic status, political affiliation, religious beliefs, etc.). This hazard has its roots in the powerful and publicly accessible search engines now available over the Internet and in the availability of databases that include personal information. Based on a detailed analysis of legislative history, international legal instruments and various laws in countries of Latin America and the Caribbean, their research proposes ways of balancing the right to communication and culture (free circulation of information and knowledge, freedom of expression) and the right to privacy, intended to protect personal integrity.

Agustín Grijalva (see "Copyright and the Internet") addresses another issue relating to the balance between the free flow of knowledge and the exclusiveness of information. He notes that in developing countries, especially those in Latin America, there is a need to develop legal instruments that will provide for harmony between the right to communication (dissemination of knowledge) and laws governing copyright (which protect intellectual property in a work as an exclusive right). The author suggests that excessively strict limits on the dissemination of knowledge could become a straitjacket and could generate unequal relationships that would impede technological, educational and cultural development in the region, which means that a balance must be struck between the permitted uses of intellectual property[20] and the enforcement of copyright laws.

Scott Robinson (see "The components of a hybrid model"), in explaining his proposal for a franchise system for community telecentres, defines the right to communication as a fundamental requirement for achieving meaningful and equitable public access to the Internet. Finally, Roberto Roggiero reinforces this viewpoint by noting the need to encourage development of Internet rights as a direct corollary of the right to freedom of expression. This objective is the foundation for the project on monitoring Internet policies in Latin America and the Caribbean, one of the goals of which is to strengthen social networks and alliances working to defend Internet rights (see his "The Latin America and Caribbean ICT Policy Monitor").

As we can see, a normative model for equitable access to and appropriation of the Internet must be based on a right to communication and culture that establishes a balance between individual rights, such as those to privacy or intellectual property, and social rights, such as that to the free dissemination of knowledge. A legal model of this kind, so essential to developing

relationships of equity in access to knowledge, culture and the exercise of citizenship, can only be achieved by fostering strategic alliances among civil society organizations, the private sector, and national and local governments.[21]

## The Internet: an environment and a tool for building a new political culture

The dominance of an instrumental approach to technology and the tendency to confine the use of ICTs within traditional power relationships have the effect of accentuating inequalities and forms of exclusion that are characteristic of Latin American and Caribbean societies.

To understand how the Internet reinforces unequal exchanges, exacerbating the gap between rich and poor countries, between the elites and the great uninformed masses, we must understand it as a language and tool that exists in the midst of different cultural and political contexts. It is essential to interpret it in each of these contexts and to ask: How does it work? To what end? To whose benefit? In other words, we must understand the Internet as a field of competing forces (composed of social groups that are subject to unequal power relations of domination and subordination) in which various social factors (state, private and civil society) interact.

Using the Internet as a language and tool that will allow for the equitable distribution of knowledge and the full exercise of citizenship (with respect to local or national governments) is feasible, provided we can strengthen civil society organizations (see Juliana Martínez on "Strengthening organizational capacities") and involve them in developing and defending social policies (education, health, human rights, etc.), while at the same time promoting strategic alliances for building a political culture and a notion of citizenship based on exercise of the right to communication and culture, which includes Internet rights, in accordance with principles of social and cultural equity. An undertaking of such magnitude will only be possible by promoting three parallel and convergent processes:

1. Constructing a new vision and ***habitus*** for the Internet, i.e. a new cultural proposition through projects to encourage the use and appropriation of ICTs as forms of social integration, adopting new and more participatory and horizontal teaching philosophies (projects that will necessarily involve qualitative changes both in schools and in governance, at the local, regional or national level)
2. Reinforcing the right to communication and culture and Internet rights in daily practice as well as explicitly including them in national and international legal frameworks
3. Forming strategic alliances between civil society and its organizations, the private sector and government (local, regional or national) in an effort to foster the social development of ICTs (in terms of both access and the use or social appropriation of this tool)

More detailed considerations on these three processes will be found in the conclusion at the end of this book.

## Notes

1. Throughout this introductory paper we use the term information and communication technologies (ICTs) to embrace all technological and communications developments based on the Internet (videoconferencing, chat rooms, discussion lists, e-mail, web-based systems, etc.).
2. Saskia Sassen (1999), in his paper entitled "The impact of the Internet on sovereignty: Unfounded and real worries", explains: "New transnational regimes and institutions are creating systems that strengthen the claims of certain actors (corporations, the large multinational legal firms) and correspondingly weaken the position of smaller players and of states", ( p. 189).
3. José Bengoa, in his unpublished article "Globalization, income distribution and human rights" (1999), explains: "The consequence of the recent processes of globalization in peripheral countries has consisted in a reduced ability on the part of states to control economic development within their countries ( . . . ) In many cases the governments of peripheral countries have made a great effort to place their national economies and their human and natural resources at the disposal of the forces and needs of the international market".
4. "World inequalities have been rising steadily for nearly two centuries. An analysis of long-term trends in world income distribution . . . shows that the distance between the richest and poorest country was about 3 to 1 in 1820, 11 to 1 in 1913, 35 to 1 in 1950, 44 to 1 in 1973 and 72 to 1 in 1972" (UNDP 1999: 38).
5. The 1997 secondary school enrolment rate for females in the least-developed countries was 24.6 percent compared to 66 percent for males in the same year; in developing countries as a whole, the rate for females was 54.8 percent compared to 83 percent for males; in industrialized countries, the rate was 96.3 percent for women and 100 percent for men (UNDP 1999: 232). These figures show the extent of gender inequity in access to education. If we were to study and measure ethnic exclusion in education, we would find similar or greater inequalities.
6. The Internet has the greatest growth capacity of any technology in human history. "The number of Internet hosts (computers with a direct connection) rose from less than 100,000 in 1988 to more than 36 million in 1998" (UNDP 1999: 58).
7. The following data from the UNDP report (1999: 62, 63) will help to understand the selective distribution of the Internet: 0.5 percent of the population of Southeast Asia (which accounts for 8.6 percent of the world population) are Internet users, while the figure for Arab countries (accounting for 4.5 percent of the world population) is only 0.2 percent.
8. In 1998 only 0.8 percent of people in Latin America and the Caribbean had Internet access, and 90 percent of these people were in the higher-income groups. Other poor regions of the world have similar or even lower percentages of Internet users (UNDP 1999: 63).

9. Martin Hopenhayn and Ernesto Ottone (1997: 278–79), citing statistics produced by Fernando Fajnzylber, show that "during the 1980s in Latin America . . . the number of TV sets per thousand inhabitants rose steadily, and the purchasing power of the urban minimum wage fell continuously . . . Latin America and the Caribbean, at first glance, have the greatest number of TV sets for every thousand people and at the same time the worst income distribution of any region in the world . . . For 1993, on average, the region had 165 TV sets per thousand people . . . East Asia and Oceania had an average of 59."
10. A jury of international experts selected the eight winning projects from the competition in early 2000, based on the criteria published in the international call for proposals which was posted on <http://www.flacso.org.ec>. The project results presented in this book have also been published at the same web site (see the detailed list of electronic sources at the end of this article).
11. One of the winning projects, entitled "Measuring qualitative and quantitative impacts: design and implementation of online registration systems for telecentres using Linux platforms", sponsored by the Colombian Association of Non-governmental Organizations for E-mail Communication, Colnodo, called for developing a registration system for evaluating the use and application of ICTs according to the variables of gender, education level, age, and physical distance between home and community centre, cross-referenced to variables on occupation or employment, level of access to communication media and user perceptions of the centre providing the service. This instrument is of great use to the coordinators of community centres that provide public ICT access, in conducting qualitative and quantitative evaluations for adjusting their service policies. On the other hand, it is also of great use to students interested in the social impact of the Internet. It is publicly available at <http://www.colnodo.apc.org/registro>.
12. On May 16 and 17, 2001, the International Seminar on Communication, Internet and Society in Latin America was hosted by IDRC and FLACSO-Ecuador, with the support of the United Nations Development Programme (UNDP), to discuss the results of the eight winning projects.
13. The editors are grateful for the contributions of Juliana Martínez, Daniel Pimienta, Luis Barnola, Scott Robinson, Agustín Grijalva and Roberto Roggiero, not only in the discussions during the seminar but also in preparing the papers included in this book.
14. This statement can be generalized for Latin America as a whole, remembering however that the case studies presented in this paper refer to pioneering experiments in the region on the application of the Internet to education and local government.
15. It is crucial to examine the social impact of new ICTs as part of the dynamics by which material and cultural capital is reproduced, the continuous conversion of material goods or assets into symbolic goods or assets, within social fields or social areas in which a set of actors and groups interact in correlation with forces that occupy different positions and represent different levels of capital accumulation (this thinking uses the theory of symbolic and material capital developed by the French sociologist Pierre Bourdieu, 1991: 114).

16. We use ***habitus*** in the sense defined by Pierre Bourdieu: "the system of arrangements . . . principles that generate and organize practices and representations . . . collectively orchestrated" (1991: 92). The project coordinated by Ester Schiavo, entitled "Towards the construction of ***habitus*** among the citizenry", based on an evaluation of local experiments with electronic government, has produced a multimedia tool or application intended to foster a ***habitus*** of citizen participation among children through their relationship with their local environment, as a way of overcoming the instrumental practices and vision of the Internet. This tool has been published at <http://www.telpin.com.ar/interneteducativa/proyectounq/unq/unq/web>.
17. This study provides a detailed ethnographic description of how the Internet is articulated with school discipline and the world of representations and symbols outside the school, among public school students in Bogota. It describes in detail the new approaches to reading, the new ways of building social relationships through chat rooms and, above all, the new forms of identity that young people are developing via the Internet.
18. This research study describes how students in a rural school in the Argentine community of Tanti (in the province of Córdoba) shared their experiences and developed joint activities with students in a similar institution in a distant part of the same country in undertaking a local reforestation project. A similarly successful experiment was undertaken by another group of students in a school in the town of Zapala (in the province of Neuquén), who established a relationship with students abroad that resulted in incorporating ICTs into the system for learning English. A further example is the use of the Internet by students in a school on the Argentine coast to share experiences from their efforts to save penguins threatened by oil spills.
19. We understand "the right to communication and culture" to mean the guarantee that citizens can be heard and that their opinions will be taken into account in governance and decision-making in their community or country, and that they can receive transparent information on social actions and policies that local or national authorities undertake on their behalf. This guarantee also includes the right to political participation through free access to information and knowledge. Implementing this also calls for effective exercise of "Internet rights", a collective guarantee that includes the possibility of physical access to ICTs as well as learning and social appropriation.
20. Grijalva, in his analysis of international trends relating to copyright and international legal instruments, such as the WIPO Copyright Treaty and the Andean Decision on Copyright, describes how commercial interests in developed countries produce pressure to increase protection for intellectual property. This situation threatens the balance that should exist between the dissemination of intellectual property (right to communication and culture) and ownership rights over intellectual authorship. He explains that only with such a balance between these two rights is it possible to ensure a positive flow of knowledge and to encourage technological and cultural innovation.

21. Juliana Martínez (see "Building alliances") and Scott Robinson (see "The components of a hybrid model") both stress the need for building strategic alliances in order to implement social policies and programmes related to ICTs. Susana Finquelievich and her team warn of the need to enlist the cooperation of civil society organizations, the academic world and government in the preparation of social and technological policies for cities (see "ICTs, democracy and social capital").

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## Electronic sources

<http://www.flacso.org.ec/TIC> This web site provides detailed information on the competition "Research Projects on the Social Impacts of Information and Communication Technologies (ICTs) in Latin America and the Caribbean" and offers the electronic version of the eight winning projects and the five additional papers included in this book, which were presented and discussed at the International Seminar on Communication, Internet and Society in Latin America held in Quito, Ecuador, on May 16 and 17, 2001.

"Navigators and castaways in cyberspace: Psychosocial experience and cultural practices in school children's Internet". Project presented by the Programa de Formación en Educación of the Universidad de Los Andes, Bogota, Colombia. Coordinator: José Cabrera Paz.

"Introducing new information and communication technologies in two rural schools of central Chile: An ethnographic approximation." Project presented by the Programa Interdisciplinario de Investigaciones en Educación (PIIE), Santiago, Chile. Coordinator: Miguel Angel Arredondo Jeldes.

"Learning from the pioneers: Best practices as exemplified in the TELAR network". Project presented by Fundación Evolución, Buenos Aires, Argentina. Coordinators: Adriana Vilela and Paula Pérez.

"The social impact of introducing ICTs in local government and public services: Case studies in Buenos Aires and Montevideo". Project presented by the Asociación Civil Instituto de Investigaciones Gino Germani, Facultad de Ciencias Sociales, Universidad de Buenos Aires, Argentina, Coordinator: Susana Finquelievich.

"The social impact of information and communication technologies at the local level". Project presented by SUR, Centro de Estudios Sociales y Educación. Santiago, Chile. Coordinator: Uca Silva.

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"The impact of new information and communication technologies on privacy rights". Project presented by the Instituto de Investigación para la Justicia, Buenos Aires, Argentina. Coordinator: Carlos Gregorio.

"Copyright and the Internet". Paper presented by Agustín Grijalva, Professor of Economic Law, Universidad Andina Simón Bolívar, Ecuador campus.

"Towards a model of franchises for community telecentres in Latin America". Paper presented by Scott S. Robinson, Department of Anthropology, Universidad Metropolitana Iztapalapa, Mexico.

"The Internet and socially relevant public policies: Why, how and what to advocate?" Paper presented by Juliana Martínez , Fundación Acceso, San José, Costa Rica.

"The social impacts of ICTs in Latin America and the Caribbean: The MISTICA virtual community and the OLISTICA observation network". Paper presented by Daniel Pimienta, Fundación Redes y Desarrollo (FUNREDES, Dominican Republic), and Luis Barnola, International Development Research Centre (IDRC, Canada).

"Introductory notes for the analysis of ICT policies in Latin America and the Caribbean". Paper presented by Roberto Roggiero, Association for Progressive Communications (APC).

# The Internet, culture and education

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# Navigators and castaways in cyberspace: Psychosocial experience and cultural practices in school children's Internet

José Cabrera Paz[1]

## The Internet: An imagined object

> Do we know what we are doing with the powerful tools we've created? Or do we just know how to create them? (Howard Rheingold, *Awakening to Technology's Impact*[2])

The Internet was born as a way for the military to communicate during the depths of the Cold War. Just as with the first electronic computer, the Internet was introduced essentially at the behest of US military interests of the time. For two decades after its creation in 1969 the Net was a luxury item accessible only to academic communities in the developed world. Then, in the early 1990s, the creation of the World Wide Web launched it on a spectacular growth path unparalleled in the history of any other communication technology.

A cultural phenomenon like this that has promised so much in such a short time is bound to generate expectations that extend far beyond its utilitarian uses. The Internet serves as a perfect object of desire, one that promises us everything we could want: imagination, creativity, wealth, information, relationships. The Internet is clearly much more than a technological object – it represents a cultural shift that affects all the dimensions of a community, a group or a society. The public schools in our countries are generally seen as wanting in terms of planning, resources, teachers or initiatives. When a technology that promises abundance is introduced in the schools, it generates expectations of a whole new magnitude and unleashes a complex chain of actions and ideas about the object itself and the cultural experience that it represents. Many people will come to think that the Internet is the answer to all their needs. Others will think the contrary. Looking at the Internet in terms of school culture, we can see sharp generational differences in people's technological skills and a contradiction between the way teachers view education and the way their students experience it. Every person's previous experience in the process of technological socialization builds a different context for appropriating Internet culture. While to an outside observer the behaviour of a class of students in front of the computer screen may appear homogeneous, what happens inside each user's head when relating to the Internet will have different meanings.

Some pupils, those who have some background and are able to move nimbly through the "media circuit", come ready and prepared to travel via the Net, and by fusing themselves totally with the machine they become skilled navigators. Other pupils, and most of their teachers for that matter, overwhelmed by the technical challenges, with little training in technological fields and with few tools in their cultural capital, will quickly despair and, like shipwrecked sailors, become castaways. Many of these young castaways, pressured to move with the cultural current that is sweeping their classmates along, will struggle to keep up and will sometimes achieve unexpected success. In a sense, these two groups make up a complex scenario that gives rise to some important questions. What is really happening here? How do they see themselves in relation to the Internet? What does digital technology mean to their daily lives? What does it have to do with the meaning of school?

In the end, perhaps, it boils down to a single question: what do young students do with computers within the symbolic limits of school culture, and vice versa? The answer is probably not as much as they could, perhaps less than they would like and surely more than they think. These are the issues that we shall attempt to address here, from a psychosocial viewpoint using ethnographic tools, in order to appreciate the successes and the setbacks that navigators and castaways experience in the "hypermedia" realm of the Internet.

## The standpoint of researchers

Most of the theoretical and practical approaches to new media such as the Internet are encumbered by a predominantly quantitative focus, rooted in market research. When it comes to social studies, particularly in the communications field, such research finds powerful support in the tradition of "impact studies" (Orozco 1995: 191). This basically quantitative approach has produced census figures and information on global trends, reception coverage, available equipment and other highly useful data for configuring a global panorama for the appropriation of ICTs (information and communication technologies) in the region. Yet, apart from these practical uses, as many researchers have shown (Martín Barbero 1987, 1996; García Canclini 1995; Orozco 1995), impact research and quantitative methodologies are limited in their ability to reveal the profound social impacts of the changes that the media (old and new) produce in different contexts, and the logics governing their use. For example, it is important to know not only how many people watch television, listen to the radio and use computers, or how much they like certain content, but also why, and what happens to the consuming audience (and to the technological objects consumed).

In a context such as that of our country, Colombia, which is riddled with social and cultural discrepancies marked by inequality, inequity and social conflicts, defining the form in which computer technology is appropriated and used may require us to recognize some unconventional aspects of "cultural rationality" that are often openly opposed to contemporary scientific and

technological rationality. This puts us in a situation of conflict when it comes to appropriating the new ICTs, and it is on this basis that we have formulated our research question: what are the principal psychosocial experiences and cultural practices generated by Internet use among students in the public secondary schools of Bogota?

## The conceptual focus

We adopted a focus that represents a meeting between the psychosocial and the cultural spheres. The convergence inherent in the question was designed to make explicit the blurring of frontiers in the social sciences field. The psychosocial perspective of the question indicates the complex theoretical approach in which personal experience is connected with social experience, i.e. the subject in his individuality is connected with the subject in his interrelationship. The Internet is a network of interpersonal and intergroup contacts, and in the relationships that derive there – from the field that we shall be exploring here – new facets have begun to emerge in the construction of individual and collective identity.

One of the key aspects of social psychology, and one that allows us to relate significant practices with group and individual experiences, is the theory of "social representations". From the pioneering work of Moscovici et al. (1986), through the constructivist contributions of J. Ibáñez (1992, 1994), the concept of social representations has opened up a promising field for linking problems that straddle the limits of various disciplinary traditions (Banchs 1994). In asking about the ways new technologies are appropriated, we were in effect asking about the building of representational structures and about social perceptions and shared meanings. In interpreting the information collected, we assumed that social representation is articulated in a "story" that we can interpret, as a narrative structure that organizes its meanings in different ways and interconnects them as hypertext. Thus, we have interpreted them as we would hypertext: we went through the maze of data establishing meaningful relationships, trends and groupings, on the basis of which we produced the interpretation presented here.

We are also convinced that using a technology like the Internet involves relating not so much with an object as with the universe of cultural representations[3] with which that technology is articulated in students' social life. The Internet is an object that is appropriated within a relational universe where other objects, spaces and practices "resignify" it.[4] To consider the impact of the Internet on the lives of youngsters is to delve into the structure of meanings in which the Internet is inserted and the jumble of relationships that are established with it. To do this, we reconstructed the "narratives" that the students gave us about their relationships with the Internet. In this way, we assumed that what happens with the Internet relates both to the use of the object and to the meanings with which it is represented. Using the Internet is both a practical and an interpretive operation. The Internet is structured

as a relational technology. When a technological object is incorporated into a cultural space, a structure of relationships implied in its use and meaning is also incorporated. The Internet is not only a communicative format or tool, it is a communicative–cultural structure that reorganizes the experience of knowledge and of information, the practices and symbology of human interaction. Taking this concept as our basis, we have assumed that the Internet is incorporated into a space of cultural relationships whereby the object is "resignified" and in turn transforms the spaces that receive it. How does this happen? What meaning does it hold? These are the questions that guided our research. Given the multidimensional nature of the object of study, the school setting was not the only one that we considered in our research, but it was a central focus in terms of organizing our understanding. The interpretation that we present here relates to two points in time: in the first, we conducted an investigation of the Internet in the school itself. Daily practices, educational experiences, teaching cultures and organizational dynamics were the key vectors in the interpretation. As well, recognizing "the transverse structure of the narratives" of the players (the fact that their development always relates to several contexts), we explored practices and meanings that define the interaction of students with the Internet in spaces beyond the school (not in the sense of school as a physical space but rather as a symbolic space). This viewpoint, which refocused our initial perspective in the study, emerged from one broad conclusion: what happens with the Internet in the school culture is defined, to an extent that is difficult to calculate, by what happens outside the school in the social and cultural spaces in which students live, in the places where vital meanings are constructed: those involving peers, context, mass media, cultural industries and technological socialization.

The psychosocial perspective was essential to our efforts at understanding. In addition, we also made use of two specific concepts: the "cultural capital" of Bourdieu (1985, 1990) and the "consumption" of Douglas and Isherwood (1990). The notion of cultural capital helped us to read the relational dynamics of the students, based on symbolic experiences accumulated in their cultural context. The concept of cultural capital, understood to be symbolic as well, is not that of a substance but of a social relationship. As interpreted in this research, social capital functions as the symbolic experience that a subject has accumulated and can "invest". This capital is a function of the social space in which each individual exists, and it is there, in the interrelationships that constitute it, that it will be accepted or rejected, and where the individual will either enjoy power and mobility or find himself beset by limitations and exclusions.[5] The concept of consumption, on the other hand, arose from the interpretive needs of the study. It allowed us to think about the social value of objects consumed and to understand more clearly the way in which they take on meaning in the social world. As García Canclini (1995: 42) puts it,

restating Douglas and Isherwood, "consumption is the set of sociocultural processes in which products are appropriated and used". Consumption is not an unthinking act, nor does it signify docility and passivity on the part of the consumer: it is a deliberate, symbolized act that communicates and integrates with others. "Consumption is defined by its capacity to make sense" (Douglas and Isherwood 1990: 77). It is without doubt an act of shared meaning (García Canclini 1995: 45). Computers, the functioning of the Internet, digital objects – all have multiple uses that are particular and differentiated. They have a function and they therefore serve as a tool: they make it possible to operate within one or several given aspects of a setting. Yet, beyond their functions, in the "world of goods", objects "serve to make and maintain social relations" (Douglas and Isherwood 1990: 75). This is the proper perspective for understanding a technology like the Internet. What began to emerge from Rand Corp. in the mid-1960s was not only a computational structure for establishing relationships and information flows for verifying disasters, it also – unintentionally – created a system for communicating the domestic successes of a country's scientists and the exploits of its warriors.[6]

## Methodological option

A methodology must always be selected from a range of possibilities. Consistent with the perspective of interpreting "representations", we have opted for a qualitative approach, in the hope of "positioning" ourselves within the subjects' universe of meanings. Although that might turn out to be a fond hope rather than a real possibility, the attempt to work within the setting of the daily life of the players and with a high degree of interaction gave us the opportunity, if not to get inside their symbolic universe, at least to share it in interaction with our own, and on that basis to interpret it. The qualitative perspective that we adopted has an ethnographic focus (Goetz and Le Compte 1988) adjusted to the circumstances of the study and to the nature of the research object. The qualitative ethnographic model in this project is designed to "reconstruct the narrative with which the subjects construct the meaning of their relationship with the Internet". As Gergen (1996: 232) says: "We do not merely recount our own lives as stories: there is also an important sense in which our relationships with others are lived in narrative form." In other words, telling who we are, what we want and what we do, how we make it possible to be, to want and to do. "Our stories are the universe of meaning in which we represent ourselves and in which we can be represented." Hence, the construction and interpretation of players' narratives, reconstructed with different instruments, has been the key strategy for establishing the most systematic approximation possible to the research question that we set for ourselves.

## Research subjects

This research had two kinds of subject population. The first consisted of a group of approximately 30 high schools, most of them public, which were investigated directly in order to establish a global approximation.[7] The second group, the main one, consisted of 6 public institutions, selected from among the larger group. One of these, a privately run school that received official funding, was in the process of becoming public. Two of the schools are located in low-income districts (one of them, in particular, is located next to the historic centre of the city) characterized by poor public services and high rates of violence. Two other schools are in "lower middle-class" neighbourhoods, but have a highly diversified student body drawn mainly from low-income households. The remaining two schools are located in different middle-class districts, one commercial and the other residential. One of these latter schools is exclusively for boys: it offers a technical curriculum and excellent physical and organizational conditions and is well equipped technologically. The course of studies is divided into areas of specialization, including one relating to systems (from which the subjects for that school were selected). We selected groups of boys and girls in grade 10 from each of the six target schools (which went up to grade 11). Of those responding to the questionnaire, 54 were male and 20 were female, and their average age was 16 years. A focus group of about 12 users was formed at each school. Slightly more than 70 percent of these completed the navigation sessions and the series of extracurricular group discussions.

## The overall inventory

It has been calculated that Latin America will have an Internet coverage rate of 12 percent by 2005. Comparatively speaking, this rate is fairly low (Valdiosera 2001). Colombia currently has 1 percent of its population online.[8] Most of these people, 55 percent, are upper-class, and 40 percent are middle-class. At the beginning of 2001 the country began to implement a flat rate for connection and to reduce taxes on equipment purchases, as part of a programme to lower the cost of Internet connectivity and expand its use. In the education field, the capital city has experienced a real take-off since 2000 in the REDP programme, intended to provide public high schools with Internet connection facilities.[9] The way this big network was implemented has been criticized by the education community, and in many of the institutions we found that perceptions as to its impact varied from satisfaction to frustration. The last major educational meeting devoted to the issue of computers in city schools showed clearly that introduction of ICTs was well behind schedule, despite the great enthusiasm and high expectations that people had about the programmes that might be developed. Using this information, the contacts we made, and the observations and interviews from

our fieldwork, we were able to establish an overall inventory of profiles showing how the Internet is functioning in a fair number of public schools in Bogota.[10]

## Institutional profile

Using the information obtained from the institutions, primarily from the principals and teachers, we established an overall inventory of problems and possibilities with respect to Internet technology. Preparation of the profiles relied largely on the perceptions of the players themselves, rather than on any empirical testing, which was not our objective.[11]

### Problems

Lack of equipment and slow and inefficient maintenance service are major problems. The equipment is frequently offline because of minor problems that often take months to fix. Much equipment was lost to theft in some of the crime-prone areas. Apart from the REDP programme computers, most of the equipment is obsolete. The current official programme has had to postpone equipment delivery repeatedly, and this has led to uncertainty and scepticism in the institutions. Organization and management of the equipment in the schools is very inefficient. The equipment is often kept locked up and unavailable for use, for fear of damage or pilfering or because of administrative complications.

Resistance and fears, hidebound teaching methods and the lack of teacher training have conspired to produce institutions with no educational concept of using ICTs. Given the fragmented nature of the curriculum, a project design with no real applicability, and an average of three or four students per computer with only two hours of computer time per week, the institutional setting is not very conducive. The crisis in staff management and professional tension between the central agencies and the public schools are part of the organizational constraints facing work with ICTs. Teacher training has been focused on handling office suites, and the virtual training sessions that are now beginning to be offered have not been very successful, either because of the way the system is organized, the content and methodologies used, or the fragility of the software in use. This means that in schools where the technology has recently been introduced, even though it falls far short of needs, it is underused. The cultural perspective of teachers with respect to ICTs, generational differences and the difficult and complex environmental, community and working conditions in which they must operate have produced a group that is very leery of working with ICTs. Internet penetration prior to the REDP project was minimal and was not sufficiently documented. Despite a few isolated efforts at innovation, the few experiments that can be observed are still in their initial stages and are reduced to viewing the Internet

as a source of information only, ignoring the possibilities of its other, more "collaborative" resources. The contrast with high-quality private education is glaring in terms of projects, equipment and Internet teaching. The current approach of REDP is still tenuous and has a number of shortcomings, and despite the government's intentions it has had minimal impact on conditions in the schools, large numbers of whose students live in conditions of poverty, violence and social marginalization.

### Possibilities

The great expectations that institutions have for the new equipment, the tremendous and sustained effort that the city's education authorities are making, the teacher training plan and, above all, the open and innovative attitude of most of the teachers make up what we might call the "available capital" for improving teaching conditions and institutional projects for incorporating ICTs creatively into public education.

## Working tools

We started by conducting an overall survey of the way the Internet was being used in some 120 public high schools. With this information, we conducted direct observations in 30 schools.[12] Our main objective was to select a group of 6 institutions with significant Internet activities in terms of appropriation, equipment, student experience and functioning connectivity.[13] We then set up focus or discussion groups with which we delved further into the most significant aspects of the study. As a result of frequent technical breakdowns and shifting school schedules, we found that in order to find a room with proper Internet equipment we often had to work with the students in places outside the schools.[14] We pursued a participatory process of observation both in the school and in the extracurricular sessions. We interacted with the children through chat rooms over the Internet, and in several cases we arranged for audiovisual self-reporting on the progress of their navigation.[15] The Internet work itself was divided into "guided" and "free" navigation sessions. In the guided sessions, students carried out activities proposed by the researchers, while in the free sessions they could devote themselves to navigating without any restriction on the contents they were accessing.[16] We created a web page for publicizing the project and collecting information from participants through free and open chats. We also posted a daily newspaper on "my experience with the Internet", and we prepared collective stories on technological life and conducted an online survey of teachers and students.[17] We interviewed teachers and students in depth on a number of issues relating to the context, the institutions and their personal experience.

The most important, reliable and meaningful information came from the interviews, the discussion groups and the navigation sessions: we organized that material into a group of narratives from which we could detect emerging

categories, and we classified the most important themes in order to establish trends and interpretations.

## Presentation of results

This report presents most of the main findings from the study, although for reasons of space we have had to pass over some that were just as significant.[18] The presentation is divided into two settings: the "school context", defined by the significant frameworks that the school imposes on representation and the use of the Internet, and the "horizontal context", which refers to the way the Internet inevitably functions in interrelation with non-school thinking and spaces. The classification of these contexts is of course analytic[19] and, in the end, their dynamics and meanings are constantly intersecting.

## The school context

Every school is a microcosm of relations and conflicts, each of its spaces consisting of ruptures and continuities, diversity and uniformity. We have a public school that is conservative but heterogeneous, insufficiently connected with its surroundings and facing a real crisis in defining its goals. It is a school with enormous organizational problems and a fragmented pedagogical perspective. The fact that the student body is low-income and urban gives it certain identifying traits and leads to a series of essentially shared experiences. There is no single type of school. Nor is there any one way of being a teacher or student, much less any clear and consistent approach to producing learning. Nevertheless, the problems in terms of organization, teaching and interpersonal relations show degrees of continuity and similarity among the different public institutions examined in the study. Digital technology is being introduced, then, into a school that finds itself in a profound organizational and pedagogical crisis. The Internet has arrived in its midst, as did earlier technologies, as an imperative, without any textbook for understanding it and with only an abstract promise of resolving fundamental problems. This has generated excessive expectations, considerable dismay and recurrent frustrations. Once the object was there, available, exuberant and tangible, it offered a number of possibilities: the process of trying out alternatives created doubts, resistance and disappointment. Digital technology, as a relational space, has arrived in the school and is transforming it: it will serve either to reinforce the school's traditional experience and making its crises more visible, or to foster innovation and institutional development. With this technology, the school will either renew itself or break apart, it will think of itself as a unified project or it will disintegrate as an institution. These are the two possible extremes, and between them some significant variants emerge. Although the Internet is a very recent technology for the country's public schools, its impact can be seen at various levels of school life. The complexity that the school world represents, the symbolic forms it takes and experiments

with, and the ideas and practices that give it meaning constitute the key places where the transforming impact of "Internet technoculture" makes itself felt.

No tradition is intrinsically inadequate. It is only from the perspective of modernity, with its symbolic flows of constant change, that tradition comes to be regarded as an experience that must be overcome. The school world represents a contradiction in this respect: even in its modern form it has served as a place for conserving traditional practices. It is the tradition of the teachers, of the organization and of the community itself that has defined what the school is to be and how it should conduct itself. This is in fact a major part of its mission as a cultural organization. We may say that contemporary society looks to computers, much more than to other technologies, as a source of renewal. When introduced into the cultural space of the traditional school, into its universe of practices and rituals, technology has a number of impacts. In every institutional setting the introduction of the Internet is producing a dynamic in which various viewpoints about Internet technoculture converge. We shall go further into the main impacts that the Internet produces in school culture. The set of dynamics described represents an interpretive structure. And although we have based our interpretation on trends, it is not always easy to identify, in the practice of each school, the pure characteristics of a single class of behaviour in the face of the educational and cultural process produced by the introduction of a digital technology. On the contrary, we frequently find the school swinging between different dynamics in its relationship with the technology.

## The meaning of the school

In thinking about the meaning of the Internet in the school, we must first think about the meaning of the school itself. School culture, its codes and representations, is certainly not the most important thing in the symbolic space in which students move. The media and peer groups have increased their power as a socializing frame of reference, one with which the school is frequently out of tune. "Youngsters", in the various social and cultural manifestations of this heterogeneous group, have begun to bring their own symbolic capital to the school, and the school is often unprepared for it. Children want to behave as kids in school, and yet the school seems to have room only for "students". One teacher in the school that had the greatest sociocultural problems in the study said something very revealing in this regard: "It is here that kids find their vital space because they cannot find it at home. They don't come here to learn – that is the last thing that interests them. They come here because this is where their friends are. When a kid is expelled from school, it is a fatal blow. The worst thing that can happen to a student is to be expelled – they will put up a real fight, they will weep; it's really striking. Or for a student to be told that he's not going to pass is the end of the world because he won't be there with his classmates at graduation. Kids feel that this is the only promotion they are ever likely to have in their lives, it's the only time that they will be putting on the cap and gown" (T-1).

The most meaningful aspect of school life for youngsters is not the learning experience or their role as students but the fact that they are "kids" together. It is a place where their relationship with their peers and their shared cultural codes are the central point of reference and give meaning to their lives. More than for any other player, their role is ambiguous and under constant tension: they are at the centre of school life and at the same time at its margin. Perhaps our school does not yet have a way out of this dilemma: we have more accumulated knowledge about what youngsters need in terms of school culture (how many basic subjects mastered, how many minimum codes, how many skills, etc.), but we do not yet know what the school needs and can handle in terms of youth culture.[20]

We frequently meet youngsters who have learned to structure their life's goals outside the school or despite it. Even if they do not actually drop out and abandon school, institutional life holds no meaning for them in the terms that the school has set for itself. For them, the school is not a meaningful world of knowledge – on the contrary, it is often viewed only as an abstract requirement for some future that they will never achieve and that has for them ever less credibility. While for most of the children in the schools we studied school life had little meaning for the future they saw for themselves, in one school the discrepancy between schooling and future prospects was especially sharp. A teacher at that school, well informed and well respected in the education community, told us: "When I arrived, I found myself in a completely new world. I found myself among a group of kids who wanted to get through school but for whom school had no meaning. I had the impression that they were coming to school because there was nowhere else to go, and that schools like these did not meet their expectations. . . . They come from very poor backgrounds, where their family, or whatever they have by way of a family, does nothing to create sound habits and does not see the school as holding any possibilities for personal or academic growth. The only thing the family hopes for is that the kids might one day get a diploma that would allow them to find a better-paying job than their fathers have, but what we have found in fact is that the kids end up doing the same kind of work as their fathers, and under even worse conditions" (T-4).

Teenagers have constructed various spaces of "symbolic recognition" that show how the modern school has lost its meaning for them. Music, sports, the media, social affirmation within their age group, their audiovisual consumption patterns and their strategies of social expression constitute a parallel world of knowledge and in many cases stand in contradiction to school culture. One youngster told us: "It's a real sacrifice for me to study because I would much rather be out in the street fooling around with my friends. I like to do things that are fun, but when I buckle down to studying I am always bored" (S-37). The hedonistic tendencies of youth, the way they manage their time, their focus on today and their strong preference for being in a group constitute symbolic records of what concerns them most in their lives.

For other social sectors, where for the most part children are enrolled in private education,[21] the school by contrast represents a place that is well

articulated with its social setting. There, youngsters' plans and ambitions for their future life are woven tightly and coherently into their social structures and they have no difficulty in projecting their futures. This is the counterpart to the "school in crisis" that we frequently encountered in this study. For two groups in this study, in particular for one hybrid public–private school, school life represents a place for achievement, recognition and real social advancement. And this happens for several reasons: because of the school, because of the sense of self that it communicates (through its practices and ritualization), because of the fact that there are sectors of the community, family spaces and middle-class cultural contexts that value the school for everything they believe to be true about it, or because they have found in their own lives that the school has been a positive factor for social advancement.

## The Internet in the school context

Every age experiences its own outlook, which, at each social moment, constitutes a "field of vision", of objects that are discovered and objects that are hidden. The contemporary field of vision that is being built in the life of the Internet is multiple, disorderly and fragmented. It has gained in depth, territory and angles, while it has lost unity and has become dispersed. There are today a greater number of objects to look at and various ways of looking at them. And youngsters represent the Internet to themselves in this way, as a space where everything can be seen and everything can be shown. It is frequently represented as a space without censorship, available to anyone who wants to fantasize by looking at objects of desire. One girl told us: "With the Internet, you have nearly the whole world in your computer, and you can investigate a lot of things that you never thought you could . . . , even the Sea of Japan, which is way over there" (S-23). As a result of this "symbolic availability" with which they represent the Internet, youngsters see it as a space where everything is visible to the navigator, whether he goes looking for it or simply stumbles across it. Increasingly socialized in an audiovisual culture, kids find in the visibility that they attribute to the Internet a space of great cultural gratification. This representation of the Internet's visibility is consistent with an elemental experience in the urban cultural life of these kids: the city's shopping malls. Regardless of their social group, their institution or their interests, most of the youngsters in the study said they were frequent visitors to these places. One girl boasted of how familiar she was with them: "My favourite places are shopping malls, I like to go there a lot, even if just to look, I just like them, I can't say why, they enchant me. I feel good and every time I go I find something new, I know where everything is and if I see that they have replaced a pair of jeans with new ones, of a different colour, say, well I take that all in" (S-27).

The symbolism that the shopping centre radiates is: "Come on in, see it all!" It is built in such a way as to enhance the visibility not only of things but

of people too – it is the perfect place to "see and be seen". Children see each other, they show themselves off, they form circles of mutual recognition and social interaction, they ogle the wares, imagining them their own, they rekindle their fantasies of possessing them – but since they have little money, they rarely buy anything. In a place dedicated to consumption, youngsters who have no real purchasing power reinterpret the consumer dynamics of the mall, converting it into a place for socializing and interrelating with others. Now on the Internet they behave just as they do in the shopping malls – they want to see and be seen. In the chat rooms they seek out relations and advertise their own availability for a relationship. They surf through the pages of brand products that identify them as a generation of consumers, even though very few of them have ever bought anything over the Internet.[22] They indulge in the fiction of buying online, even while they complain of the advertising overload that swamps web pages.[23] From this viewpoint, their experience has much of the "intentionality" that Barthes (1985: 158) attributes to media culture: "Mass culture is a machine for showing desire. 'Here is what must interest you,' it says, as if it has guessed that men are incapable of finding what to desire by themselves."

Just as in the shopping centre, children navigate without any fixed direction – every object is a "possible desire", every place is a point of reference. They have no starting point and no goal to reach, only ceaseless to-ing and fro-ing. It is this sense of drift that shopping centres were designed for: every corner of the place invites us to linger, to wander from one spot to another without ever leaving. On the Internet, every link is a temptation to move on to another link and to stay online, to find ever newer and more enticing objects of desire. As one boy put it, "You reach another site and you find it interesting navigating in another theme. Let's say you're looking for stuff on football. Then you find something that sends you to another page and you end up learning about tennis or something else. If you're really keen, you'll stick with football. But sometimes you start out looking on the Web and you find something more interesting and you think, well, football isn't that great, so you forget about it and move on" (S-13).

In this "logic of the visual", the Internet functions as a vast and opulent shopping mall of planetary scale, and yet this exercise of looking at things on the market, which identifies them as a generation of young consumers, also reminds them of the limits imposed by their own poverty. The abundance of "other people's objects" is the mirror of what they themselves do not have. "We have information overload", said one boy, "and it really opens your eyes. The Internet gives us the chance to be better informed and to appreciate more clearly how little we can get here, locked away in an underdeveloped country" (S-25). The things that can be seen on the World Wide Web serve to highlight what is unavailable locally. The globalization on which the Internet is built becomes a symbol for the limitations of one's own space. The user's gaze is expanded to embrace other territories, a wider place, desired objects that are beyond reach and available only in the "developed world"

of others. That distant and hardly imaginable space is the space of abundance, of greater pleasures and desires, with objects that "we never dreamed we could explore" (S-23). Their own space, compared to the wealth of others, is suddenly seen as poor and underdeveloped. Their relationship with the technology recalls an old progressive legacy: we look at ourselves in the mirror of the journey that someone else has made and that serves as an "example" for what we want to do.

From this perspective, the Internet represents for youngsters an enormous shopping centre where "others" exhibit an opulence that they can only contemplate and dream about. One of the differences that the children cited most frequently about their contacts in other countries had to do with the objects that those people had, including technology. This probably reveals the logic of "being through having". Experience differed significantly between the study groups. The differences were directly related to cultural capital and social position. For those higher on the scale of cultural and economic capital, the world of the Internet is less inaccessible and more familiar. In contrast to teenagers from poor backgrounds, who pass through the shopping centre without consuming, these children have been socialized as effective users of the products and services of a city that, in the neighbourhoods they inhabit and frequent, is fully transnational. For these children, the Internet is a space for reaffirming their identities as consumers. The fashionable clothing, the latest recordings, the first-run movies and the designer tennis shoes they seek over the Internet are all at hand. As they see it, the Internet functions as a source of information about their daily lives.[24]

## The digital Aleph: Omnipotence and simultaneity

Jorge Luis Borges, in a suggestive piece, related the story of the Aleph. This is a point in space where we can experience all times, all places and all knowledge simultaneously – terror and beauty in the same instant. The Aleph is a frequent metaphor and, for many users, a near-perfect description of the Internet. One of the most frequent representations of the Internet that youngsters constructed was very similar to the Aleph.

It was common for the children, in their stories, to reconstruct the image of the Internet as a limitless space inhabited by all available human knowledge, as a reservoir of infinite objects. This representation has some peculiar characteristics. One youngster translated the image in these words: "The Internet is like a huge library, the library of life, of the world, the library of the whole world; we can look there for whatever we want and this is good for the sake of humanity. For example, you see something that you know is far away, something you really like, something you had always wanted but you thought it was for when you are grown up, that you would have to wait your whole life to get there and do those things, but now you can get there in a flash through your computer" (S-41).

Together with the representation of the Internet as a source of abundance, something instant and visible, there emerges the image of an object that

embraces everything and is therefore omniscient. Every culture creates its places of wisdom and gives certain people the role of sages. For the school, wisdom used to be found in books and it was administered by the teacher. For these technoculture kids, the digital Aleph of the Internet is the place to find contemporary wisdom and it is available at their own initiative. "There's a tremendous amount of information that you can find on the Internet," said one boy. "We find information of every kind, about schools, universities, professions, all fields. That's what keeps us informed about everything that's going on in the world" (S-25). The wisdom of the Internet, its capacity to contain everything that is humanly available, has a profound implication for youngsters: it keeps them informed about what is going on in the world. In this respect, the Internet functions as "a symbolic device for connecting to the world". This is the logic of a youth culture that is focused on the present. "Current" information becomes one of the fundamental values of their audiovisual and digital consumption. Much of this information is useless and irrelevant for practical purposes, but other information becomes indispensable material for their social relations. With their data on sporting events, the romantic adventures of their audiovisual heroes, musical hits and new outfits, children build "networks of conversational interchange". They turn information into an object of daily relations with others. In their stories, edited and rewritten with material from their technological imaginings, the children confirm their social and cultural identity. In their chat groups they discuss their media tastes and their favourite songs and personalities, or they argue the prowess and prospects of a football team. Information makes it possible to relate socially with their peers. And in youth culture, this has great symbolic meaning. That is why it is so important to keep themselves informed – in this sense, the wisdom of the Internet is uniquely and irreplaceably useful: not only does it convey information, but the source itself is often a sign of prestige. Untiring in their pursuit of social relations, eager to enter into multiple relationships, to explore the world of others and to demonstrate the "specialness" of their own, youngsters identify the Internet as an object that, because it is all-knowing, is increasingly all-powerful. "For the future", said one youth, "I see the Internet as the greatest source of information, much more than television, and certainly much more than radio or the press, they are no use, there is only the Internet, soon it will be the main thing" (E-26).

This representation of the Internet probably corresponds very closely to what we might imagine the Aleph to be. But in one important aspect the match is imperfect, or at least it suggests a variation to the metaphor. That aspect is time. The Internet meshes very well with temporal space, with youngsters' preference for focusing on the present. Immersed in the symbolic ambit and dizzying pace of the audiovisual media, adept at decoding the codes of fashion, they see in the Internet the image of things that have no past. The original version of the Aleph embraced both the present time and all times. The version of children today focuses on what is now and what is new. The Internet is not a story that can be told in the past tense. "The Internet", said one student, "shows kids. There are no pictures of old people,

the Internet doesn't show outdated things, it shows everything in colours" (S-33). In the present, nothing is accumulated and yet there is abundance; it is a context of constant transition and mutation. In many cases, the quality of a web site will be measured by the timeliness of the last update. Nothing can be old on the Internet. To be out of date is the worst thing that can be said about something on the Internet. Since everything is transforming, updating and renewing itself, the Internet signifies for youngsters a place of perpetual motion. "The best thing about the Internet", said one boy, is "the ability of the technology to keep up with trends – the Internet is 'with it', it's constantly being brought up-to-date, it keeps pace with everything, if you're on the Internet you're really plugged in because you know everything that's going on right now in the world" (S-33).

For many young users, the Internet is the realm of instantaneity. The computer industry has constructed a culture where everything can be replaced by an updated version, which is always better than the previous one. A program can be updated, supplemented, perfected. There is always an "updated" version of a program, but there is never a "final" version. Or if there is, it means that the program has failed and the company making it has disappeared. "In the digital world everything is perfectible." This rule applies with special force to the Internet. Current and immediate are the criteria for judging the importance and truthfulness of what exists. "Truth", a value that school culture promotes strongly, comes to mean for the youngsters "the latest". On this point, one girl said: "If you are looking for up-to-date information on Colombia's economy in books, you won't find it because books only show things the way they were when they were published; but if you look on the Internet, you'll find things the way they are right now, not the way they were three years ago" (S-23).

Not only is the book – the school object par excellence - seen as a symbol of the past, but the Internet is the technological space of the present. The Internet is constantly being updated and producing "more truth". For a young student, three years is an eternity. As in video games, time is a record to be beaten. The speed of the technology is one of its commercially most significant features. Digital objects have been advertised as products of the greatest and swiftest change in the history of the world. In three years the most popular computer operating system can go through two versions, or a spectacular new software company can appear, and each new generation of chips doubles the capacity of the previous one, and so on. Nobody can doze off on the Internet – and this is not only because the chat rooms never close or because of time differences between the hemispheres, but rather because users demand and producers supply a new version of the object and the old one instantly loses its value.

## The crisis of administered knowledge

The public school in this study tends to be a traditional institution, with a vertical division of roles and an administered distribution of knowledge. The

linear curriculum is the most tangible expression of its approach to knowledge. Through it, the school culture defines what children must know, in what order, in what quantity and with what emphasis. School culture is a clearly delimited space and the school as an institution imparts the knowledge that society believes should be taught. It is into this organization and this form of social time that the Internet is being introduced. The relationships, content, formats and ways of conveying this technology are far from uniform. Its accessibility, its many expressive codes, the information that it conveys, the communicative experiences that it evokes, and its contextual relationship all function in a way that is opposed to the organization and timing of knowledge in school culture. This opposition produces varying experiences in relation to the administration of knowledge offered by the school.

Giving voice to what many of her classmates have experienced, with classes of more than 40 students, dissatisfied with the traditional offering of her school, complaining of examinations and teaching methods, one girl told us about her daily routine: "We study and they assign us four or five pages of this textbook or that, and the books come and go, but I'm not very impressed. All that information, and by mid-year we've forgotten everything" (S-22). This school experience signifies a routine approach to study, learning a text, filling in the blanks, passing a test – academic work is seen as nothing more than acquiring arid knowledge that is confined to the pages of a book. Resentful of having to perform monotonous, repetitive and meaningless tasks, these youngsters – who are used to the heady pace and varied fare of audiovisual media – see the school, with its rigid and limited teaching approach, as an experience that runs counter to their media-acquired knowledge, their pace of learning and their needs for new connections with their environment. In this context of dissatisfaction, the Internet appears, with all its new, instantly available and manipulable objects, to reinforce the audiovisual codes they have developed. As a symbol of connectedness to the world, to "today", the Internet breaks down the logic underlying the school. In the first place there is the territorial symbology. The classroom, where the teacher rules and where knowledge is exclusively organized and imparted by him, is confronted by an object that is outside the classroom, that opens a window on the world, that connects to the environment and contradicts the inside – outside dichotomy. The Windows interface, which since the late 1980s has become the most popular digital iconography, contains a permanent representation of viewing space. A window is always a design for communicating spaces – when placed on the walls of a school, it is a symbol that breaks down its boundaries, a "centrifugal object". For a teacher, a child perched by the classroom window gazing out impatiently at the playground and waiting for recess is the most discouraging spectacle because the child is in the classroom but wants to be outside. The teacher finds this incomprehensible – such behaviour is simply not allowed in the orderly setting that school learning requires. Once digital technology arrives in the classroom, cloaked with educational authority, thanks in part to the advertising it carries, the activity of this same student, seated before the virtual window of his

computer, seems much more legitimate for the organization of the school, even though he is still seeking an escape and indeed is looking much further than the school yard. These are two distinct windows, the first reprehensible, the second undefined and not yet controllable but undoubtedly more centrifugal and powerful as a means of escape. "Contact with technology", said one boy about the Internet, "opens new horizons for a student to learn because if you're sitting there with the teacher writing things down on the blackboard and saying, pay attention and copy this, it's no use, you have to work with a computer and then you can see further. Outside school there is a lot of useful stuff" (S-24).

Sensing that the school is teaching them content out of context, anachronistic and fossilized knowledge, the children take to the Internet with the gusto of someone who has finally found what he was looking for – the "outside world". This is one of the tensions that the Internet introduces into the restrictive space of the classroom. It places youngsters in an ambiguous position with respect to the boundaries between the school and their surroundings. On one hand, we might say that those boundaries are expanding and that the school is becoming more connected with its environment, that bridges are being built between the school and the world. With the Internet, we have a school that is "less school" and "more world". This meets one of the most ardent desires of youth: to know about the contemporary world. At the same time, we could say that the ambiguity that the Internet produces in the boundaries of the school has to do with a redefinition of two key notions about its symbolic space: the "inside" and the "outside" of school life. Although these categories have been the subject of much debate in postmodern literature, it is important to consider their meaning in relation to our project. On one hand, redefining the "inside/outside" dichotomy of the school has to do with the type of content and experiences that enter into the school when the Internet is introduced to it. When a student secretly joins a chat group or listens to music during class, this means that a fragment of the "non-school world", with content that means nothing in the current definition of school, has now penetrated it. On the other hand, if a student practises a second language through a letter-writing program, this is quite legitimate in terms of the school–world relationship. In terms of the current self-definition of the school, it is not always clear at what point the Internet is really introduced into its culture, even if it is physically there. With the earlier technologies that were introduced to the classroom, it was easier to manage and place limits on what was "school content" and what was not. If students were watching a football game on television, it was clear that this audiovisual experience had no place in the school, except perhaps as a special innovation by some teacher who wanted to show the impact of mass events on society.

With the Internet, this division is not always clear, at least for the groups covered by our study. We must ask, then, when the children are navigating with a computer in the classroom, whether they are really in school, or rather whether the Internet is really there. The situation becomes even less clear if

the teacher fails to do what is normal in the classroom: to control the organization, supply and assimilation of content, conduct evaluation tests, lay down guidelines to prevent his disciples from scattering, and impose discipline on a large group within a cramped and uncomfortable space. The navigation experiences that the youngsters reported with the Internet betray a general pattern of control by the teachers. Contrasting Internet use at school with their independent navigation during our study, students were in agreement with this view: "In school we're not allowed to join a chat room, we have to go to educational web sites and it has to be something that has to do with our project – they give us no time for chatting, and if I want music or if I want to chat I have to do it outside class time, I have to ask for permission and it absolutely has to be something for school, it can't be anything else" (S-18). Judging from their navigation habits when there is no teacher to control things, students tend to navigate in their favourite subjects, and these have little to do with education as the school sees it. In the navigation surveys, the percentage of academic topics covered was very low, compared to an 80 percent rating for musical themes. Without a teacher, without homework to do or without a test to worry about, children are no longer really in the school world when they are allowed to navigate independently at school.

It is in this sense, then, that we may reconsider the transformation of the school/world boundaries, or redefine the meaning of "inside/outside" school. What difference is there between navigating in a cyber café and navigating in school? Navigating the Internet in school does not imply, in principle, that the Internet is in the school. Rather, we could say that the Internet has introduced the "outside", that it has brought the "outside world" in, but no pedagogical plan has been articulated to define its educational nature. It is not a question, such as is generally posed in the school, of what kind of content is or is not considered educational. With the earlier audiovisual technology of television, much of its crisis had to do with the view that realizing its educational potential boiled down to producing educational television. Given the evident fact that children and teenagers learn more about ethics from the moral dilemmas facing a character in a drama, a soap opera, or a made-for-TV movie than from educational programmes about values, we need to reconsider whether content control is really the best way to take advantage of the Internet's pedagogical value. If we listen to the stories of the youngsters in the study, Internet technology is in many aspects the least "scholarly" experience these children have had. The Internet school is less a school and more "juvenile Internet". In other words, it has more to do with the outside world, with audiovisual codes, with the consumption of market symbols, with socializing with their peers and simply having fun. In other words, there is less administered knowledge, less tedious homework, less seriousness, less uniformity, less claim to infallibility. In the end, there is less effort, greater facility and more pleasure.

Judging from their more frequently observed navigation practices and their own stories and interviews, it is clear that for youngsters the Internet is

a pleasurable context. By contrast, the school has become a space that normally encourages sacrifice, rewards dedication and discipline, lauds efforts to overcome obstacles and regards learning as a difficult goal. The school long practised and gave legitimacy to the learning regime as an activity divorced from pleasure. Even the most hedonistic descriptions of school life look upon play as a "tool" whereby learning will be more effective and attractive, but still "difficult". The principle that every student has to memorize is that things that are worthwhile have a cost. The curriculum has been designed to administer increasing doses of difficulty. Revealing this Internet/school dynamic, as a kind of reflection of contradictory voices, one student said: "Before we had computers, when we had an assignment we had to go to the library and spend hours and hours going through books for a task that I can do in one hour with the Internet. The Internet has made my life a lot easier. My parents tell me sometimes that it encourages mediocrity. But when they were in school they had to spend a whole weekend finding information and reading it, while I simply look on the Internet, find it, copy it and it's done" (S-25).

When it is introduced to the classroom, the Internet produces ambiguous tension at the school/world frontier, tension that has begun to show up in the line taken by teachers and parents. Since this is a technology that arrived with tremendous pedagogical prestige and yet still is so little used and appropriated by adults in the school, the reaction it produces in them is ambiguous and changeable. For the school, accustomed to supervise and manage what is tangible, the "escape" that children experience through the windows of the Internet is something that is still too intangible to be regulated and controlled successfully. At most, the school can impose censorship based on a heteronomous image of the student: since he is incapable of governing himself, and since there is no learning structure that will allow him to do so, decisions must be taken for him.

"From prohibitions you can tell what people normally do – it's a way of drawing a picture of daily life," says a character in one of Umberto Eco's novels (1995: 80). The school bans games, pornographic pages, music and other amusements with the Internet and computers. From this it is easy to deduce what children do when they are allowed to navigate freely, or when the teacher is not looking: "At first", said one youth, "they told us we could go anywhere we want, as long as it was not pornography or Satanism, and then when we started to visit chat rooms what happened was they imposed a rule that said we could not go there and we could only visit educational sites, which meant of course no X-rated sites and such, but in fact it is the teacher who decides what is course-related, and what he says goes" (S-18). This story opens a further set of questions. On one hand, there is the issue of what happens when censorship is imposed – children come up with resistance strategies. According to one student, navigating outside school was "much better because we can surf freely, while in the classroom, when the teacher comes, we have to switch windows quickly with Alt-Tab" (S-18). In even the

most strictly controlled areas of the school, students develop mechanisms of resistance, and censorship over Internet content is no exception. As we shall see later, for young cybernauts, "prohibited" subjects are hard to avoid because they are so abundant and tempting on the Internet. Bypassing certain content poses a complex psychosocial challenge: not only is the prohibited object all the more seductive and enticing, but viewing it becomes a matter of group complicity and solidarity. A group plot to elude the teacher's control is easier than might be thought, not only because schools generally have or use no software to block access, but also because outwitting the censor becomes like a video game, a challenge to see who is the most skilled in getting around school restrictions. Finally, the generational difference in technological abilities plays in favour of the students, who swiftly learn or invent strategies for escaping the teacher's visual control.

With teachers and adults so intent on monitoring the content they access, concerned on one hand to fulfil the Internet's broad pedagogical promise and yet alarmed by all the imaginary perils they see it, the school has begun to encourage a split in the use of the Internet. The Internet is the least "scholarly" thing about school. When the school introduces the Internet with the knowledge control and management habits to which it is accustomed, the Internet comes to represent an object from the past, a library for doing homework, a huge database, or a boundless book that must be administered. The Internet comes to be represented as exclusively an information database. It has little association with communication, interaction or shared intentions. Around this form of appropriation there emerges a fundamental dichotomy with respect to the Internet. The Internet becomes a source of tension between "what the kids want to do and what they have to do": the homework Internet and the amusement Internet, the Internet from which homework can be lifted and the Internet that offers chat rooms, the Internet that is a chore and the Internet that is fun. One girl summed up her two-sided experience with the Internet: "The teacher came and said do this and that, and we started to do what we were told, although nobody wanted to; when we navigate alone, all I do is chat and chat and then it's fantastic because I get to know more people and customs" (S-5). This split encourages two possible dynamics with the Internet at school. In the first, the Internet, viewed as something aestheticizing, seductive, multicommunicative and entertaining, transfers its logic to the pedagogical dimension: it hypermedializes and diversifies the school. In the second dynamic, the Internet comes to be an experiment in control, divorced from pleasure and serving merely as a huge library. In this case, the Internet is inserted within the traditional school culture. The latest technology, then, can be made to behave like the most traditional of objects of the pedagogical world. The second dynamic would seem to be the more frequent, given the experiences and practices examined in this study. The first is not excluded, but it is less apparent in the youngsters. At times, the two intersect and reinforce each other, or produce tension. In any case, the dichotomy is there, and the Internet as a relational object, despite the school's declared intentions, is not yet a clearly pedagogical experience.

In place of the tension between what is educational and what is not, we are left with a problem that is more difficult to resolve – above all, if in general what the school is trying to control is access to advertising material that portrays the latest fashions over the Internet and which young cybernauts tend to explore. A quick glance will only reveal the juxtaposition of two social discourses: that of the school and that of advertising. Advertising, although understood today as a complex device that sets the stage for cultural interaction between the symbolic world and the economic world, between collective desires and the productive apparatus (Pérez Tornero 1998), is viewed by the school as nothing more than a vehicle for the alienation and manipulation of consumers. This way of looking at advertising is most evident in the instrumentalist view that the school has of television in particular and of the media in general. Sticking to the old paradigm[25] of the "all-powerful and manipulative" media versus the "passive and manipulable receptors", the school makes the message of advertising into an object of criticism, contempt and suspicion. Yet, despite that, advertising continues to infiltrate through the countless interstices of the school–media–youth relationship. Despite the school's declared opposition to advertising, its symbolic heart (i.e. the image) has penetrated and conquered the school world by different routes. Students have seized many of its messages and reinterpreted them in light of their own cultural structures, using them as spaces for self-representation. One youth said, "I really like the advertising slogan for Sprite - it says a lot. Even though what they're trying to sell is a brand, in fact it says a lot. The image is nothing – I can see a physically beautiful girl in the street, but she may be empty inside – so the image is nothing. Unless I know someone, I can't give a clear judgement on that person" (S-28). The representation of the advertising image in the school is ambiguous and tension-ridden. Its commercial message is viewed with suspicion, but at the same time its semantics is used extensively and rationally and treated as profound and vitally important.

In today's media culture, the image has become an omnipresent communication code (Jameson 1997). The image gives tangible meaning to social reality. With the overwhelming flow of visual signals through the media, reality can only be presented through visualization. Social and anthropological studies of the city have found that many of the most basic urban experiences, such as the concept of place and the collective feeling of belonging, are being mediated by the power of television (García Canclini 1995). Although visuality has been a growing force behind the construction of Western culture (Jenks 1995), it is with the surge of media images that its greatest symbolic protagonism and its anthropological power over urban life are generated. It has involved one of the most characteristic social phenomena in constructing today's sphere of communication, the intense and generalized deployment of aestheticization in the different communicative agents of society (Jameson 1997). Politics, sexuality, private life, the city, the economy, among many other fields, tend to be staged in an aestheticized way. Even wars, wherever

they occur, have become the object of direct broadcasts and careful media explanations, complete with graphics and typically cinematographic simulations in order to catch the viewer's attention. Technological devices, their design, their user interfaces and the organized activities they imply are obviously designed to be "enjoyed", and to be first and foremost "visually seductive". Of course, it is not only the media but social and political life as well that have reappropriated and dramatized this dynamic.

Socialized by aesthetic advertising through the media, youngsters find different lines of continuity and acceptance of digital technology in the school. With the Internet, its visual availability and its growing colonization through advertising, youngsters find a space that is very familiar to them. "In school", said one girl, "we have had access to the Internet in the library, and that is great, because with the Internet we have all that information at our fingertips, and it's really incredible, it's just divine, our work goes really well, super well, and when we present a job on the computer it looks really pretty, we can put in little cartoon figures, in Word, in Excel, we can give slide presentations, it's great to interact with technology and it helps me tremendously" S-27). This view, peculiar as it may be, crops up quite frequently in the arguments that children use about the power of digital technology. For many students, much of the Internet's value lies in its capacity to be a huge reservoir of graphics, illustrations and caricatures for making conventional schoolwork look better. Similarly, although they often complain about the number of "banners" on the Internet, some of them confess that one of the reasons for visiting and staying at the web site is the richness of its graphics, its visuality and the attractive advertising it offers.

Although it may seem merely a prosaic gesture, in fact it reveals the ambiguous nature of a paradoxical relationship between the media world, digital technology and the school. As we can see from the social representations and practical uses that children make of the Internet, introducing the Internet traces new lines of continuity and tension between various views of school culture and popular culture. The institution swings back and forth and, without wanting to, builds bridges to its environment while removing frontiers, which swiftly disappear through the escape windows of the Internet and the navigation practices of its young users. If this ambiguity is seen as a problem of competition between the school and its environment, it will not be readily resolved, especially since it involves confronting experiences that occur in the complex structures and dynamics of cultural life. On the other hand, if it is approached within the current framework for incorporating the Internet into the school, as part of the effort at renewing education, it will probably be easier to resolve, by making the possible relationships explicit more in terms of an alliance than of competition.

It is also essential to build within institutions an attitude that is sufficiently sensitive to the organizational, cultural and pedagogical changes that the Internet can mean for a school. The difficulty that can arise from "schoolifying" the Internet, under the current approaches described here, would imply losing

much of its educational potential. Similarly, reducing the possibilities of the Internet to a mere information mechanism is a questionable association. This is a difficult issue because, for the school, the debate over content-focused education is not new. If the Internet can do no more than provide access to content, however new and varied, the debate will get bogged down in arguments over the type of information that should be accessed. It is not that the question of content is useless or secondary, but rather that to regard it in this way ignores the possibilities of the Internet for generating relationships, cultural logics and communicative processes.

## The avatars of the "hyper-reader"

The debate over the importance of content in schooling leads us inevitably to the problem of reading and writing in relation to incorporation of the Internet into the school. As can be deduced from our ethnographic work, reading skills among students are passing through a stage of crisis and transformation. Assessments of "academic skills" in various areas of schooling, including language, reveal a key problem in the city's public education. The results of these tests show very low success rates. Even more alarming results have been produced in national tests, where mathematics and language skills among the school population are clearly inadequate.

The traditional school has a central object that defines it: the book. School culture is book culture. The book has functioned as the object of knowledge. It concentrates the most valuable knowledge that the school can offer. But for the school, the book has a special function. It has become a cult object. It is static; it sets and preserves limits. From whatever viewpoint we choose, it is, and has been, the standard for evaluating the acquisition of school knowledge. The school as an institution has been supported in the appropriation, circulation and cult of the text. This has long been the space of certainty for teachers. It has guided their path and calmed their doubts. More than reading, it is the book itself that has defined the meaning of school life. The growing distance that separates youngsters from the world of book readers reveals a number of phenomena that in some cases contradict the explanation of reading deficiencies. The relationship with the media, just as with the new digital objects present in the classroom, allows us to see that the crisis in school book culture has to do less with the book and more with the relationship with reading that the school, through the book, insists on.

## A reading crisis or a relational crisis?

For youngsters, the schoolbook is the symbol of a compulsory and unpleasant task. Even among those at a higher sociocultural level, reading is not a frequent practice. At school, the book becomes an imperative for learning. Those who do not read will be cut off from knowledge. Similarly, the book is an object of permanent pedagogical control. Students are tested on the basis of books

and their contents. Students look upon books as something with which they have an uneasy and disagreeable relationship. "I don't know why, but books bore me," said one boy. "I know there are some terrific books, but on the whole I say, what a drag!" (S-31). This feeling about books becomes even more critical because, through their control, children exercise little autonomy in organizing their own learning. The relationship of pedagogical control that books represent in the school produces in students less autonomy and more subordination. Students frequently feel that they would "like" to read a book until the time when they "have" to read it. All it takes is an order from the teacher assigning a book as a task to kill any desire to read it. We might ask, what would happen to book culture in a school where reading were not compulsory?

On the other hand, the experience of one young reader suggests that the crisis is less one of reading and more one of the way textbooks function in the school. "The only thing I read is gossip magazines, ***Shock*** for example, where they have chic girls in the latest fashions, or ***Soho***, or magazines like that, worthless stuff, silly stuff, the kind of thing that you walk into a newsstand and pick up and start flipping through, there's no content, it's just junk, but it's the only thing we dare read, we don't even read it, we just flip through the pages" (S-14). A number of studies of lower-class reading habits suggest that identifying book reading as the only legitimate kind of reading tends to devalue other reading practices in the eyes of the readers themselves. There are clearly many interconnected reasons why children do not read, but one reason is that they do not identify themselves as readers when it comes to certain material. The crisis of the written word is not, then, a crisis of reading but rather a crisis of its relationship with the school. With the arrival of Internet technology, the picture becomes even more complicated and yet it helps us to understand more clearly that the crisis in reading habits refers more to a process of change in decodification rather than to any loss of a particular skill. As one student put it, "I think that just looking at a white page with black letters is a big bore, while the little characters that appear on the Internet screen with colour writing in all sizes, that can really catch your attention. After all, people only read what interests them, and then you have these little characters that pop up, where at least it's amusing, but you don't have to sit there reading line after line and then finding that you are lost and saying, hell, I didn't understand this, and having to read it all over again, since on the Internet you only go to stuff that's interesting and you don't have to sit there all alone reading page after page, you can be a little more relaxed" (S-14).

This story helps to explain several aspects. First, the aesthetic character that differentiates the printed word from hypertext on the Web. "Hyper-reading" on the Web is accompanied by various registers of decodification: diversity, interlinkages, the possibility of self-regulation, the self-construction of navigation routes – these are the most decisive features that allow children to experience a bond that is totally opposed to the book object. Youngsters feel a great familiarity with this new hypermedia format because they have

had prior training in the process of decoding with audiovisual media. Much of what young people do with the Internet involves using it as a kind of "televisual reading", i.e. treating it like television. This brings us back to the question of what reading means for youngsters. One of the advantages they find in the Internet compared to their reading experience is the nature of access. "The Internet is great", said one boy about his experience, "because for me it's a lot better than going to the library and consulting all those fat books, and then you don't find what you're looking for and you have to go back and stand in line with five other people and ask how do I get this" (S-27). Access means more than just facilitation. It has to do with the relationship with reading that is established in school culture: not only because training readers requires a lot of social support and cultural capital available in familiar and communal settings, but because the dynamics of education have made the book a symbol of a kind of school that is "not connected" and also because the written text has been represented to have a value quite different from that of the mass media. Evidence that there is alphanumeric decodification in "hyper-reading" can be seen in the fact that many children make a practice of downloading and printing material from the Internet so they can read it later.[26] This not only shows us how readers have redefined their habits with digital formats, but it also suggests that access to electronic reading is seen as quite different from book reading (not so much because of the kind of decodification as the context of reception). When they are on the Net, children no longer think of themselves as readers but as "navigators", "explorers" or "cybernauts". The "hyper-reader" see themselves as technologized; the same cinematographic imagination that goes with their social representations about technology gives them a new image of themselves that bears little relationship to the self-image they had when they were using printed books. With the Internet, children have fewer teachers imposing reading assignments and so it is easier for them to find points of escape, to plot their own routes and explore the Net at random. To a large extent, then, we may say that youngsters read via the Internet because they don't realize what they are doing.[27] Their own representation of reading as something boring does not jibe with the emotionally attractive and active experience of navigating the Web. Their devotion to chatting - textual chatting – also shows the vigorously active side that breaks down the reading/consumption paradigm and establishes that of textual productivity. The problem of what they are reading or how much they read and what kind of material they read is also an important aspect since, with the hypermedia formats of the Internet, not only does the relationship with the written medium change, but the representations of what young navigators find and produce in their new "hyper-reading-writing" spaces are redefined.

The book-centred school used to teach about a "distant world", presented as remote and incomprehensible. From the perspective of these youngsters, Internet technology has reinvented the notion of space, allowing children to imagine that the most distant places and cultures can now be accessed more

readily with a simple click of the mouse than with all the (often fruitless) effort involved in going to a traditional library for information. External reality, "the world of others", was, in the textual style of the school, a kind of knowledge that was narrated and retold in solemn, terse, precise and uniform formats. It is the kingdom of the sacred and infallible book, which for kids of this pleasure-seeking generation is a synonym for boredom. A book narrator, omniscient and impersonal, with a language in which the narrator himself disappears, talks about the geographic features of the Pelopennesus or about Hindu philosophy. With the Internet, impersonal intermediaries tend to disappear and give way to protagonists in the eyes of youngsters. Speaking out loud in hypermedia register, the colonialists lament the domineering and bloody-minded attitude of their predecessors, the nationalists talk proudly and fondly of their pre-Hispanic wealth and Orientals tell their own version of history. And although children spend less time on geography, science and history and more on horoscopes and sports, hearing the actors' voices and seeing their bodies is an experience that is invaluable for distinguishing between how they learn over the Internet and how they learn in the school of books. As one student put it, "I can look at photographs on the Internet, I can see videos, I can listen to sounds, I can do a lot of things, I can get written information from people who have lived through these situations and that makes it very easy for me because nearly everything is there" (S-23).

## Pirates of the old texts

As we have seen, the Internet behaves in different ways within the school. Sometimes it is inside, with its young navigators, sometimes it is outside, captivating them and taking them beyond the bounds of the school. The kinds of "schoolification" that happen over the Internet produce "traditional" uses of the new, expressive formats of the Web. In a school focused on learning from texts, many youngsters have developed a negative image of books. And since the book, despite their resistance, is a fact of daily life at school, children have also learned to put up with what they cannot avoid. A sign of this is the way they copy fragments of books and hand them in, unchanged, to the teacher as their homework. "Research", as students normally call it, is nothing more than plagiarizing from various books. To a large extent, the book-centred approach of their teachers has made these children "turn off" from the wisdom to be found in books. In this respect, one boy told us, "When the teacher assigns us some project for research, and we just talk about what we think of the topic, the teacher doesn't like that at all because for him the only thing that matters is what's in a book and not what we think about the topic" (S-22).

In the book-oriented culture of the traditional school, the most difficult thing was to find a book to copy. Now, from the viewpoint of those who see the Internet as merely a gigantic library, copying is an easy matter. "I think", said one girl, "that the Internet offers a lot of facilities, but that depends on what you want to make of it. If I want to be lazy, I just download something" (S-23).

Teachers also recognize this phenomenon: "For example," said one teacher, "a student may be working on a written assignment and he will go and copy something and hand it in, but if you ask him anything about the project he has no idea at all" (T-36). Although the Internet may occasionally inspire feelings of guilt (which youngsters overcome readily enough), it is becoming for youngsters a synonym for the book, offering knowledge that they simply have to copy and paste, but which they do not try to understand, not only because they don't want to but because they feel they cannot. Because they have problems with independent interpretation, plagiarizing books becomes for them a kind of practice where knowledge is always "someone else's knowledge". And since this results in infallible knowledge, a youngster who copies from the "Internet book" becomes almost paradoxically a pirate of old texts.

Up to this point, we have been examining some of the redefinitions that the Internet introduces through its hypermedia structures into reading comprehension and decodification. The relationship with traditional reading has been substantially modified and different practices are emerging, together with the notion of the "hyper-reader" navigator. Yet this is not to say that youngsters' experience with the Internet is giving rise to a generation of more critical and better-trained readers and decodifiers. We do not have enough information to say that - indeed, taking our observations of navigating youngsters, we find considerable continuity between media consumption and cybernautic practices which would seem, in principle, to point to the creation, not of more critical readers, but rather of more hyperactive consumers. The fact that they may be dissatisfied with what they find in the media, that they may be turned off by excessive advertising over the Web, or that they are disgusted with "consumerism" does not imply the development of more analytical, thoughtful and active readers in the face of advertising devices and the big media and communication corporations. This is not to say, of course, that youngsters' relationship with this space makes them more docile or submissive. On the contrary, whatever the intent of the output of these big communication companies, we find in the culture of students, and in the school, major currents of "resignification" of the symbolic content of the mass media and digital technologies.

## The mediation of the teacher: proximity and distance

The Internet is beginning to produce a particular redefinition of the pedagogical relationship with knowledge in the culture of the traditional school. With a technology that offers amusement, the Internet gives youngsters the possibility of learning without books. Learning with the Internet, even if it involves reading what is there, is still learning without books. This method of learning is deeply disturbing to teachers because it has a considerable impact on the identity of the book-oriented school. One teacher said, "The kids don't even use the library . . . they were not raised in a book culture . . .

they find it very difficult to look for information, to go to libraries, they don't know how to handle them, they don't know how to do research" (T-34). For teachers trained in book-based teaching and pedagogy, these new dynamics represent a threat to their educational competence. In the first place, many of them are unable to see the pedagogical meaning of the Internet, or of computer culture in general.

In this respect, a cardinal aspect that we observed in our study was the generational difference between students and their teachers. Although many of the low-income students in the public schools have no direct, intense or early exposure to digital technology, they were born into a society where computers are a naturalized representation associated with youth. However novel the computer may seem to youngsters who come to it later, they can relate to it much better than can many adults. The situation is different for teachers: the computer appeared only when many of them were adults, when they were already thoroughly steeped in the book-oriented school and had little exposure to technology. For nearly all of their school life, they learned from linear texts and their relationship with the media, the technology closest at hand although outside the school, was mediated by the paradigm that discounted their educational possibilities. Those who were exposed to the computer in the early days of its development did not find it a gratifying experience because the interface with it was so difficult and unsatisfying to handle. This probably explains much of their unfamiliarity and discomfort with computer technology. For many teachers, this generational difference is clear. One of them summed it up this way: "These kids are living in the heyday of the computer; they were born at the same time as this technological revolution. When I started to fool around with my first computer, I was already 35; and here are these kids in grade 8, only 13 or 14 years old, and they are already navigating" (T-36).

## Fears and resistances

The generational difference in technological skills induces tension in teachers. In the first place, youngsters see themselves in their own self-representations as "explorers" of their own lives, and this sets them apart from adults. The difference becomes clear in relation to digital technology. "The teachers are stuck in a rut, and I don't think they ever look back to when they were kids, when they too needed to see things differently, they are too serious about things and they won't admit that someone might need to see things differently" (S-27). The search for difference and the pursuit of novelty are codes that youngsters adopt as distinctive trademarks of their identity. Their great affinity for the Internet lies in the fact that it offers a wide spectrum of objects and up-to-date symbols and things that can be "explored". In this juvenile representation, the Internet represents change and novelty and it is precisely these qualities that they find lacking in adults, whom they see as "stuck in a rut".

For the teachers, nearly all of whom are at least twice as old as their students, this difference sparks an initial fear: the fear of losing control, the fear that technology is not their terrain, and that they will be overtaken in terms of knowledge. It is the fear of being shunted aside. In a school built on a scheme of someone who knows and someone who does not know, this is sufficient reason for teachers to keep their distance, particularly because they see it as an attack on their identity and on the role that the school has traditionally assigned to the teacher. Moreover, since technology is frequently associated with youth (in the media and among the kids themselves), many adults feel that venturing into technology means losing "control". Similarly, the representation of technology as subject to constant renewal generates significant resistance in the teaching culture. Although the teaching body itself may have doubts about it, pedagogy is hardly a field of constant innovation – youngsters are much more likely to have had a conservative educational experience than an unconventional one. It is not easy to reconcile conservative pedagogy with an object that bears the social stamp of invention and uncertainty.

On the other hand, the collective representation that circulates over the Internet occasionally introduces frightening images into the social scene. "Adults look at computers in a certain way, fearfully," said one youth, "because the media tells us every day about some new fraud, some new virus, some X-rated page, and so on, and there are a lot of scary things on the Internet" (S-33). Seen in this way, as the unruly offspring of television, full of dangers and strewn with unsuspected traps, the Internet becomes something to be controlled, to be censored and to be handled with caution. It is a common psychosocial reaction to the unknown to feel an emotional and cognitive void that is generally filled with the most negative images available. This polarized representation of a cold, dehumanizing, dangerous technology that will "conquer the human species" is one of the reservoirs of the popular imagination that provides the most fuel for these ways of seeing the Internet.

## The archaic predigital technology

As a technology, the Internet was preceded in the history of the school by the introduction of different media. In the days before the Internet, the audiovisual media, primarily television, created great expectations about the impact they could have on school culture. If we examine the technological history of the school prior to the Internet, we see a picture of technological uncertainty: "Educational technologies," said one teacher, "which were the first to be brought into the school, were never assimilated by the school itself, not even in terms of infrastructure, and certainly not from the viewpoint of teaching. Now they have brought us the computer, the Internet. Without knowing how to use the movie language of television or video, nobody knows it, nobody has any interest in it, they don't use it and they don't care about it. People continue with the traditional classroom approach, expository, verbalist,

or they exchange it for constructivist practices such as workshops"(T-4). Generally speaking, we found in our study that the school is not technologically well-equipped and that what it has is poorly maintained. Despite a significant institutional effort, the school is far from achieving an adequate level of infrastructure. Moreover, quite apart from material shortages, the school has made little progress at incorporating the media into its teaching approach or into any organized educational philosophy. Attempts by the teachers to explore the media have not met with great success. In part, this is because their professional training was lacking in this respect, in part because the culture of the book-oriented school has stood in opposition to the mass media. For the school, the media have had a negative image: they have been viewed as manipulative, as "anti-educational", as discouraging sound reading habits and as producing violence in student behaviour.

Despite the sound commercial strategy used to proclaim the educational benefits of the Internet, many teachers and adults in the education community see it as a synonym for "another massive object" that carries with it dangers and creates negative habits that are bad for school performance and the sociability of students. One student told us: "Many people think that because a kid has the Internet he won't go out, he won't go to the library, they say you just give him a task and he will send it back by e-mail and he will never leave the house, he will just stay there hibernating in front of the computer, and they think that he's going to become totally dependent on the computer and that he may even become addicted, and this is what scares them" (S-33). As the depository of new fears about "the foibles of youth", the Internet becomes a place of suspicion that must be controlled. This is not only because it "makes things easier" for students, something that is severely frowned upon in a school that prizes hard work, but also because the technology is also seen as something that dehumanizes, isolates and individualizes the student. Ignoring the overwhelming tendency to seek relationships through chat rooms, adults and teachers imagine that young cybernauts have broken with the social bonds that keep them human and have become part of the machine.

Under current circumstances, for many of the institutions we studied, the Internet has arrived in a technologically archaic setting. Although we should not think that the media must be introduced in sequence, starting with the book, moving on to television and finally arriving at the Internet, it is clear that the preceding technologies have not created a healthy and appropriate context for receiving the Internet. It could be that the best strategy is to generate a communicative circuit in which the Internet can be introduced. The audiovisual media can still do much to improve the school pedagogically and, in association with digital technologies, their potential should increase significantly: perhaps, then, the best way of using the Internet would be to do so through a "technological network of various media". For developing countries, the cost of doing this is prohibitive, but even with the low level of equipment available in the schools of countries like ours it is possible to imagine many other possibilities for using the Internet together with the media

available. It is worth noting that none of the institutions studied had any sense, technological or pedagogical, of the linkages between technologies. In a way, even though the Internet is recognized as the "medium of all media", it is still seen in the school as a distinct communication or information tool, unrelated to its predecessors in the technological landscape.

## Teachers and the Internet: inconsistency and diversity

Although our research did not focus on the theme of teaching culture in relation to the technology, the teacher's role as mediator, remote or visible, turned out to be a fundamental element for interpreting the processes that the Internet introduces in the lives of young students. When it comes to understanding, handling and using the Internet, there are among the teachers many different attitudes and positions. Some of these are more widespread than others, none of them are stable, and there may be intersections or mutations between several of them. Our classification is provisional, but it can help us to visualize the diversity of reactions to digital technology in the school. In the first place, we shall consider the results of an online survey of teachers, some of whom belonged to the target institutions.

### Statistical paradoxes

Our findings led to a paradoxical conclusion about these teachers, in the sense that we expected them to take a higher profile in introducing the Internet into the school. The survey was answered by 34 teachers, evenly distributed by gender, with an average age of 35 years. We may assume that most of the teachers in this survey were familiar with the Internet and used it at least at an intermediate level. Most of them were teaching computer science and language subjects. These teachers scored high in handling the computer, and yet the variety of activities and the diversity of programs they used were not substantially different from those of any average user. Most of these teachers were users rather than producers of software, and very few reported engaging in programming work or using multimedia tools. For this group, the principal difficulty in introducing the Internet to the school was the negative attitude of their colleagues with respect to computer technology.

In terms of usage, these teachers shared many of the habits of their students. They distinctly preferred chat rooms and e-mail to other Internet resources, and very few of them had a web page. Nearly 60 percent had a computer at home, and half of these had Internet connection; the others, those who reported no access at home, gave the cost of service as the principal reason. With more than four years of Internet use, and with the high ranking they assigned to its educational importance, it was surprising that only 20 percent were using the Internet for teaching and that most of them (66 percent) should say that they had no pedagogical plans for the Internet. We were also

surprised to find that of these teachers, who had the most experience in working with the Internet in school, only 6 percent were using the Internet to seek information on education. Even fewer, 2 percent, reported exploring the Web for information resources.

Although the survey could be improved as a tool, both in terms of the construction of the sample and its applicability and technical construction, its results are an important aid in understanding some of the difficulties with the Internet that we observed in the school culture.

## A provisional typology

The following typology has been constructed from our field observations and from the narratives of students and teachers. It is not an exhaustive classification since there may well be other possible types. We have tried to focus on those characteristics of teachers that could be explored directly. On the other hand, each type is more a metaphor than a uniform category.

### *1. The transient passenger*

"Using a local network," said one teacher, "they provided literacy training for the teachers, for all of us, and it lasted about a year, during which the teachers could come and work alone in the computer room. They started giving courses on MS Office, computer use, everything to do with informatics, all the basics for making the computer useful in our daily work. There was much enthusiasm initially, and great expectations, yet after a while attendance dropped off and finally no one came" (T-36).

Computer technologies, presented and accepted as something "revolutionary" through campaigns for "digital literacy", create excessive expectations in the schools. Even if it makes no claims to the status, teachers see the computer as a "teaching panacea". Yet, very soon, various factors conspire to work against this. The courses are reduced to formal and technical rather than pedagogical training. Moreover, organizational and professional tensions emerge and affect the process of teacher training. Despite the good intentions of the city's education authorities, there are crucial shortcomings that quickly discourage the teachers. Despite government concern about informatics, there have been some enormous failures.[28]

Such failures tend to generate the prototype of a teacher who is easily excited by the technology but who, without any visible, concrete and creative applications to educational practice, soon becomes unable to relate actively and structurally to digital technology as a tool. These teachers speak positively about the use of the Internet, but they quickly forget the intentions and, as transient passengers, they get off halfway down the road and return to their magisterial and inactive teaching habits. At best, they may complete the journey, but it will be very short.

*2. The teacher-librarian*

We have already referred to this type of teacher. He sees the Internet exclusively as an enormous computerized book bank. For these teachers, the Internet is the best tool for "documentation", perfect for preparing long exercises to be completed on paper. For them, the computer is nothing more than a sophisticated paperless typewriter or a cheap and very attractive slide projector. And although they praise the virtues of the Net, their teaching approach is merely a traditional variant with a modern tool. These teachers may well have been "transient passengers" at one time; and although they have not abandoned the digital train ride, they are moving at a slow pace in the most conventional wagon of Internet pedagogy.

*3. The teacher who thinks computers bite*

The generational differences to which we have alluded in terms of the way certain teachers relate to the Internet, combined with the teacher training process itself (with little appropriation of digital technologies), have produced the image of a teacher with little interest in digital culture. For this type of teacher, the computer is a complicated and sometimes magical thing that is extremely difficult to handle. These teachers frequently point to the "marvels" of the digital world as further proof that the computer is inaccessible and unintelligible. Some of these teachers betray their fear of digital culture through defiant rejection, arguing that the computer is an alienating object. On occasion, they will pin the blame on the Internet for the poor performance and "intellectual laziness" of their students. Their relationship with computers usually progresses from fear to technophobia: an object that creates fear is an object to be rejected.

A clear example of this type of teacher was described in one interview: "A characteristic of the official teacher is that he is very apathetic to change . . . the greatest problem in public schools is a negative attitude and even fear on the part of teachers. For example, I have here two computers that are available whenever they want, but very few come for them" (T-10).

*4. The "techno-apologist" teacher*

This type of teacher is midway between the pedagogue and the technophile. He may be enthusiastic about all kinds of technology, proclaim them publicly, justify them and, in a haphazard way, try them out in his teaching practices. Generally, he tends to focus his interest on the technical dimension of the tool. His goal is to have the equipment in his classroom. Although he does not view computers in pedagogical terms, he may innovate with them and his efforts may be successful, more because of their novelty and his own enthusiasm than for their consistency with any structured teaching approach or any concern for sustainable development. Since his educational intentions are focused more on objects than on processes, this type of teacher is usually abreast with the latest developments in technology but not with those in pedagogy.

*5. The teacher of the oral tradition*

This is one of the most common teacher types found in the schools. He represents, par excellence, the magisterial classroom, the blackboard, oral performance and, of course, the textbook. This teacher is usually viewed as something of an anachronism by his students, who see him as representing the survival of an outdated school culture. This type of teacher is not bothered by technology and the Internet, he is not afraid of them and he does not disparage them – they are simply a dimension that does not exist in his pedagogical world.

One student, who seemed sufficiently informed to be able to assess the technological abilities of his teachers, referred to several types, including the teacher of the oral tradition: "The trigonometry teacher wants nothing to do with technology, he uses only the blackboard and chalk, we don't understand anything; on the other hand, the chemistry teacher brings slides to class and we understand her very well because she knows how to make us understand her; the physics teacher brings films, but the trig teacher is totally out of date" (S-22).

*6. The expectant teacher*

This type, together with the next one, would seem to be one of the most promising in defining the Internet's future in the school. It embraces those teachers who, although they have not worked with the Internet, have high expectations for it. Through the media, institutions and their own explorations, their curiosity has been piqued and their imagination awakened. This type of teacher is the one that needs the most attention, since any disappointment in their growing but still-undefined interest would turn them into sceptics or even technophobes. It is usually, but not always, the younger teachers who have the most open minds, not only towards digital technology but towards the possibilities of pedagogical renewal in general.

*7. The ideal: the "suicide" teacher*

"In the future," said one teacher, "my role as a computer science teacher will have to disappear, it will have to become that of a facilitator for involving other teachers and resolving teaching problems – the teacher as such will disappear; I can see that I will have to disappear."

This type of teacher has a refreshing attitude to digital technology. He tends to understand that his goal must be rethought. He accepts that technologies like the Internet will result in less teaching and more learning. Aware of his students' technological skills, this teacher encourages them to collaborate and explore. He understands digital technology as a means and not an end, and he is more concerned with pedagogical problems than with technical problems. He is in effect "suicidal": he will kill off the traditional teacher inside him to give way to a new one, less bossy and more collaborative, less "teacher" and more "learner". He will be working in a school where progressively less is being taught and more is being learned.

## Horizontal context: is there life after the chat room?

"At one time," said one teacher, "they allowed us to chat in school. But then there was a revolt; the girls became addicted, they broke the window in the door to the Internet room where there were 20 computers, all that the school had. So there was no more access. The children became Internet addicts. At lunchtime they had access to the room and they could work on different things. There was a time when they were allowed to chat, but then they became addicted and the room was no longer open when it should be; they put locks on it and you had to have a card to open the door. One day they broke a key in the lock because so many girls were trying to get in, and they were so excited that they broke a window. Then we said, no more computer room, and the room was closed for about three months" (T-23).

When we began our extramural navigation sessions during this research, there were two types of children: those who chatted regularly and those who did not. The first group, who spent more time on the Internet on average, served as evangelists and quickly initiated their classmates to the pleasures of real-time typed conversation. Once they were all in the same setting, after a few sessions it was hard to tell which of these two groups was spending more of its computer time in chatting. Suffice it to say that, for most users in this study, chatting was what they spent the most time on, after music (although their access was often limited by teacher control at school). Those who had a computer at home, the minority, were used to chatting. Whether through enthusiasm, curiosity, boredom or a fighting spirit, the children believed that the chat room was "a pleasure trap" from which they could not, and did not want to, escape. Once they were aware of the fun to be had, the relationships they could establish, the youngsters could not imagine any other resource that could connect them so effectively to others. And if that resource were to disappear, through the vicissitudes of technology or some lethal virus, many of these children would have trouble conceiving of life after the chat room.

Because this habit is so ingrained in young cybernauts, we offer below an ethnographically documented approximation to some of the main dynamics, structures and communicative rituals that the participants in this study exhibited in Internet chatting.

## The "hypersociality" of digital tribes

Belonging to different groups is a social trend of modern urban life, something that Maffesoli (1990) has called "neo-tribalism". This differs from conventional tribalism in the fluidity and instability that characterize the makeup of its groups. Affective experience, the level of contact and the sense of belonging are the constituent elements of the new tribes. Each tribe constructs an "aesthetic ambience", i.e. an internally shared way of feeling. This new tribalism is expressed in the multiplicity of groupings that are produced in daily life and it is woven with symbols from a great variety of cultural

backgrounds. As Maffesoli says, "What characterizes our age is precisely the flexible intertwining of the multiplicity of circles whose articulation defines sociality" (1990: 143). The dispersion, segmentation and fragmentation of urban life produces, under various contexts, the establishment of a multiplicity of shared spaces. One youngster interviewed put it this way: "You can catalogue things in several ways. You can catalogue classmates and friends in the school. In our course there are more classmates than friends . . . there are also other spaces, what we call ***roscas*** or cliques. There is a little clique of repeaters. They don't mingle much with us. Or there is a little group that is lagging behind in the course . . . they tend to look out for each other" (S-19).

With surprising frequency, youngsters participate in multiple symbolic spaces. They are used to shifting from one context to another, from one identity to another, from one time to another, from one chat room to another. To belong to a symbolic space is, in a sense, to be incongruent with any other of what used to be or still are symbolic spaces of belonging. Belonging to one reference group does not mean breaking with another group, but rather mixing and combining the meaning of each. With respect to a reference group, "the coefficient of belonging is not absolute, and anyone can participate in a multiplicity of groups" (Maffesoli 1990: 251). Groups are understood here as symbolic complexes that may occur in various everyday settings, including the Internet. The new tribalism of youth, superimposed over the Internet, produces a mosaic of cultural voices, of supportive encounters and conceptual relations. Each tribe establishes itself within a specific territory, assumes a role and wagers its "cultural capital" on it as a sign of differentiation and identity.[29] With this "neo-tribal" perspective, the concept of what is collective about the Internet becomes more open and unstable. What young navigators have "in common," what their unity rests on, is more a set of shared intentions and symbols than the existence of any so-called "youth" group. The common element that they seek and offer over the Internet is more a multiple and changing object than a solid and tangible legacy.

In the chat room, youngsters are constantly reestablishing their "affective contracts" with the symbolic group to which they claim to belong. Daily life is a favourite emotional setting for youthful tribalism, whereby they surf and talk about music, singers, sports and horoscopes. With these themes they build "niches of recognition" for contacting each other, for reaching out and touching each other, with the "symbolic tactility" of the Internet because, as Maffesoli (1992) says, we are living in an era of tactility where everything urges us to proximity and to contact – hence the importance of the festive and the aesthetic as identifying signs in youngsters' conversations in their chat rooms. To the extent that they are shared forms, they become bonds for establishing relationships with others. In the chat room, children tend to seek each other out through a primordial affective tautology: "because" ***porque sí***. For youngsters, the social bond is constructed through affectiveness, which can function as a strong bonding agent but also, of course, depending on the nature and intention of the relationship, as a trigger for the "pitched battles" that often break out in chat rooms over the Internet.

What kind of life, what kind of experience must a youngster have had for an event of anonymous communion in the chat room to be so attractive? The chat room becomes for youngsters the place where they can act out many of their dreams and imaginings, something they find very special; but this perception is possible only because the chat room generates an internal relational dynamic such that one of the main effects is to produce an emotional openness to their interpersonal relations and to their subjective world – a subjectivity that breaks through and shows a youngster an enormous and unexplored potential within his internal world. As one girl put it, "In the chat room we can do things that we could never do face-to-face . . . . You can go half crazy, at least that's what happens to me, I go on chatting like a fool, I say things that I could never say in public, like we get all emotional, we can drag out things from inside ourselves that we would never display to the whole world" (S-23).

The emergence of subjective experiences comes in a sudden eruption. This would seem to suggest the emergence of a "contained subjectivity", which becomes visible because a youngster finds two basic conditions that allow it: an affective bond with others and a place where he does not feel censored. His subjective experience in the chat room becomes a menu of possibilities through which he can show "what he is and what he wants to be". An anonymous space emerges that offers a variety of opportunities for identity, as a virtual experience without censorship, to reveal itself. In this respect, the chat room becomes a place for the youngster's "internal" exploration. This exploration in turn leads to the discovery of a "youth identity", an identity that relates to "what we kids like", where enjoyment tends to function as an aesthetic criterion for saying who one is; a space of "aesthetic identity" with which youth defines itself as such. After two or three hours on the Internet, one boy said, "We were chatting with a Mexican girl . . . and things clicked, we found that the things she likes are the same things that I like, the rumba, music, discotheques and such, and then we got into a real chat" (S-10).

The chat room, then, presents itself as a "menu of aesthetic experiences", a place for expressing pleasure, where there are options for sensitivity, where there is appreciable cultural and symbolic capital available, the product of shared experience in audiovisual consumption, in the symbols of globalization and the cultural industries. Of course, for people with other cultural heritages and different expectations, the chat room is likely to contain quite a different symbolic capital, with a different scale of emphasis. Nevertheless, for most of the youngsters in this study, the experience offered by this Internet resource represents an attractive menu of symbolic possibilities for exploring subjectivity and constructing social expressions of their identities. The tribal feelings, the identary experiences, the affectively charged language and the proximity that children experience with each other are associated with a practice that is just as relevant: the representation of the chat room as a broad space of relationships. "In the chat room we are more at ease, everyone is willing to recognize everyone else, something that does not happen in the street" (S-18).

Because they see it as crucially different from the other spaces, these youngsters are always eager to enter into a relationship, to get to know new tribal spaces and different options for relating to each other. Even in the most esoteric chat groups, there is always someone willing to make contact. The most popular sites that children visit at any time of day, or even early in the morning if they have a computer at home, tend to be peopled by children seeking or offering a partner. "No one can be lonely on the Internet", and this is something of great value for children who are tremendously eager to make contact. As one boy said, "In the chat room it's easy because there are a lot of people you can talk with, we can have groups of 30 or even 40 people and then we can strike up a conversation with anyone" (S-13). Under different circumstances, the structure of contact, the social filters and the ritualism of personal interaction would make it much more difficult to do what they do in the chat room: to enter into a relationship with each other without any preliminaries or excuses.

The promise of "an abundance of relationships" makes the chat room a prime setting for revealing the neo-tribal nature of youth. Yet the hypersociality of youngsters reveals itself even outside the Internet, although in relation to it. Among the rituals of computer use is the chat group: "It's more fun to chat in a group", said one girl, "because in the group you can imagine saying more things. If someone asks how things are going in the country, you're not going to lie. And the other person will understand and think that makes sense. It's terrific!" (S-23). The physical placement of computers in the schools fosters this kind of collective navigation. Whether for engaging in verbal battles or for winning someone over to the group, children tend to de-individualize use of the terminal – not only because they want to but because there are usually at least three students for each computer, and more in some schools. As well, as part of their tribal behaviour, children are used to grouping together to "plug themselves in" simultaneously to various objects of the "media circuit" (radio, television, computer). Music or televised sports events are a good opportunity for doing this: "Since the game was to take place that morning," said one boy, "we brought a television set and hooked it up in the classroom and we sat there watching the game and at the same time chatting with children in Bolivia, dumping on the Peruvians" (S-18). These neo-tribal encounters via technology make clear the strength and ease of circulation that exists in the mass-media communication structures. This in itself reveals the daily interrelationship that occurs over what we might call the "techno-communicational macro-net", and it shows how the Internet is not only displacing the other media but allying itself with them to play a more effective role within the multicultural entertainment business.

## The rituals of online interaction

In conventional daily life, encounters between individuals are usually mediated by different rules of interaction. Psychosocial research (Moya 1994)

has identified what happens in the first moments of contact between strangers. The first reaction that serves to identify the other person for us involves the emotional interpretation of his state of mind. Gradually we configure a profile of that person, using available information (appearance, intonation, attractiveness, etc.). Next we will make a "causal attribution", i.e. we will attribute intent to the other person. Depending on our identification of the cause (politeness, hostility, deception, etc.), we will respond in different ways. The entire process allows us to configure the scheme of thinking within which we will classify the other person with all the information that we judge, on the basis of our own experience or knowledge, to be most relevant. There are many such schemes that every person adopts for situations, individuals and feelings under different circumstances. The essential point in the process of relating to another person is that we are always interpreting and, on that basis, predicting possible courses of social action and, in general, we understand the other person as a subject of intentionality. With what we know of affectiveness, intentions and behaviour, we interpret the other person by analogy to ourselves. This was clear in the way one youth imagined his chat partner: "What I always imagine is that the person I'm chatting with is right in front of me, in the same situation as mine" (S-20).

This process reveals to us a complex map in the interactions of face-to-face encounters. When it comes to relationships in Internet chat rooms, there are important similarities and differences in the way the interaction is ritualized. Our perception of other individuals in the chat room is based on indicators. We interpret others through their written marks and we then draw our own conclusions, as we would in guessing that a truck has passed by because there are tyre marks in the snow, its "footprints", except that on the Internet we have real-time footprints: we interpret them at the same time as they are produced, and we are aware that we are producing footprints in the same way.

Among the activities attracting the youngsters in this study, chatting was well in the lead. Consistent with the image of the chat room as a great virtual field for cultivating their "hypersociality", youngsters engaged there in a ritual of interaction that was frequently the same among different groups of navigators in the schools studied. We can identify a structure of interaction within the chat room that resembles a labyrinth of options, where in moving from one level to the next we pass through a kind of filter that allows us to decide the next step in the conversation. The first point of decision is the selection of the chat room. The most popular ones are in Spanish and are found on commercial web pages. Children will be aware of these addresses through their friends, or through radio or television tips. These children are not great readers of the press and, apart from "reading" the city's bulletin boards, they never reported visiting a site because of printed advertisements. Having made their choice, they go to the site – and among the topics explored, they opt nearly always for the same thing: love or romance.

In contrast to other social spaces, where acquiring communication skills is a long and laborious process, the chat room is a place where even the least experienced can quickly learn the keys to the ritual of interaction. Once inside, the children start to use an interactive repertory with which they are very familiar. As one student said, referring to his feelings in the chat room, "It's really refreshing because I already know what they're going to ask and I know more or less what I am going to answer, I have a stereotype of what we're going to say, what questions I will have to answer: How old are you? What's your name? What are you like?" (S-18).

The chat room is like the Golem of Borges: "In the letters of rose is the rose and all the Nile in the word Nile." The first indicator that the other person gives of himself, the footprint that defines his identity, is his name, his nickname. Through it, youngsters reveal a first mark of identity that they want to communicate. When it came to selecting a nickname in a chat session, one girl said: "I believe that it goes along with everyone's personality; for example, if I call myself "Ugly Betty",[30] I'll be looking for a Pancratius or something like that, I like that name, my chat partner's name would be something modern" (S-10). Borrowing the names of popular personalities, movie stars, cartoon figures or sports heroes, children try to economize in their language so that communication of the identity they want to portray is as condensed and brief as possible. Besides being a symbolic footprint, their nickname contains essential information for establishing interaction: their sex. If their gender cannot be readily identified, this will evoke a negative or suspicious reaction. On this point, one student said: "What happens is that in the chat room they can use a name, well let's say a man is writing and he uses a girl's name, and then you get confused and the conversation goes on, for example they use pseudonyms in the chat room, like Crave, and you don't know whether that's a boy or girl, you have no idea" (S-10). In our observations and interviews, very few youngsters reported chatting with people of the same sex. Boys and girls alike preferred to establish heterosexual relations, which is understandable if we consider that romance is one of the most popular topics among our focus groups.

Once we are through this naming filter, we come to a radical selection criterion, which is age. This is generally the first question, sometimes even before the greeting. Many children, when entering the public space of the chat room, throw out questions such as "Is there anyone here under 14?" "I'm looking for a girl of 15", or simply "Hi to every guy who's 16". Boys and girls both use age as an initial selection factor. Most of the time the relational range is one or two years, maintaining the cultural tradition that matches younger girls with older boys – but only slightly older, in chat rooms. There are of course exceptions of various kinds. One boy said, "Once this funny thing happened, we were talking with a lady who was 40 years old and as soon as we said we were 16 she said bye-bye and she cut us off" (S-18). In some cases reported by teenaged boys, the relationship with adults is viewed

pragmatically as adding to an "affective database" of persons who have the experience to "instruct". As one of them put it, "When we talk with an adult, we talk about work, about what we're doing, what we're studying, what we like, why we like people, and such things" (S-10). Once they have established gender and age, the children proceed to strike up a conversation. In many cases, more often involving girls talking to boys than vice versa, they ask whether the other person is married and confess their own marital status. The answer to this question seldom varies: girls and boys tend to say that they have no boyfriend or girlfriend and no commitments or that they have terminated or are breaking off a relationship. In terms of what we know about the participants, however, this was far from true in many cases.

For methodological and technical reasons, we were not able to observe in-depth and systematically the content and progress of conversations, especially since once they got into the chat room most users engaged in private conversations. Once they are through the brief and fleeting filter of the above decisions, they launch the conversation with a "ground reconnaissance" exercise of topics, seeking similarities and compatibilities. Questions such as "What do you like?", seeking shared symbols, or "What are you studying?", looking for common school interests, are used to assess whether the potential partner shares certain spaces that are vital to youth culture.

Similarity or difference of interests provides a defining thematic criterion for continuing the conversation. Although they may talk about love or war, the fact is that most youngsters use a highly exclusive criterion that we might call the "amusement rule". Given youngsters' representation of digital technologies as a place for fun, chat rooms are unlikely to admit any topics that are not "amusing". When asked why they liked to chat, the typical response was, in one boy's words, "We chat because it's fun just to talk about things, not about the state of the country, for God's sake. There are specialized chat rooms, of course, but to look for them or create them is, like, really boring . . . the very commercial chat rooms are only good for amusement, nothing more" (S-10). With apologies to Postman (1986), then, we may say that in the chat room the rule is "have fun or die".

There is a great diversity of topics, of course, but those that are considered "serious" are banned from the chat room. This does not mean that there can be no serious or in-depth chat about an amusing topic. "One of my friends is always carrying on in a style that makes the subject exciting and fun" (S-18). Yet it is the social character of the dialogue that typifies chat topics. Love (or its want), pleasures and hobbies, the meaning of identity and of life will crop up in fragmented and interwoven patterns in the course of a wandering dialogue. Some children will keep on chatting with a number of people, while others will zero in on just one partner. One particular group of children, those with the longest experience in chatting, had a special ritual: they treated the chat room as a territory to be conquered. When they were surfing as a group, in a special and well-equipped room, they saw their mission as that of tribal conquistadors, with the trophy going to the one who could amass the greatest

collection of telephone numbers in a session of some two hours. Each little list of numbers was a sign of inter-peer prestige. In a similar way, the pleasure of group chatting was enhanced by little conspiracies and games of seduction shared by the group. Chatting in company, they could turn themselves into their interlocutor and corroborate the data that the others had obtained. They could also identify the different roles that each interlocutor assumed with each of them. The children engaged in this exercise frequently in the navigation sessions we observed, as they did at home (those homes with a computer and Internet connection) or at school, at times when they could escape the teacher's gaze.

## Post-chat fictions and realities

There is a dimension that we might define as the final chapter in the ritual of online interaction, and that is the face-to-face encounter. In some cases, there was a significant difference between groups of schools. It appeared that the less experienced youngsters or those with more modest technocultural capital tended to see the post-chat encounter as something beyond their reach, that they could hear about but would never be able to experience. "I never thought I would meet anyone from a chat room", said one boy, "because they live, say, 'way off in the United States and here we are poor, we're not going to go there and they're not going to come here, so all we're going to do is talk, just talk, talk about romantic things" (S-10). Another student, more experienced and from a higher sociocultural level, explained: "Generally speaking, what we're looking for in a chat is to make friends and have the chance to get to know someone physically, and then when we enter a chat room we already know the others, at least those from our country" (S-20). Among the users who hoped to meet their chatting partners in person, a majority preferred to stick to chat rooms from their own city or country. Although at the outset they tended to navigate indiscriminately, the best way to make friends was to find chat groups where others in the same geographic area were navigating. These users, middle-class and with a symbolic capital more appropriate to a certain image of the "reality" behind the Internet, were the ones who reported the most personal contacts with friends that they had made through chatting.

These real encounters tended to be preceded by a number of steps, usually in quick succession: a few telephone calls, a greater level of confidence, a declaration of emotional compatibility, identification or rejection through a certain tone of voice, and then a personal meeting by mutual agreement, preceded by very high expectations. Having had plenty of time to idealize the other person, they arrived at their first meeting expecting to find "the object of their desires". One girl spoke of her post-chat experience: "I got into a chat room one day, and I was looking for friendship. I gave this guy my telephone number, and I talked with him all the time, we made a date, we got to know each other. The first time we chatted, it was great because we didn't tell everything, we didn't look each other in the face. But when we got

to know each other personally we found that both of us had given somewhat different data" (S-23). At the post-chat meeting, the children find themselves in a situation where, depending on their previous level of communication, their control skills and the way they handle personal stereotypes, the bond they have established in the chat room and over the telephone will be reinforced or shattered.

These rituals that flow from interaction in the chat room exhibit variants and singularities – what we have described are the principal trends that we found in the group we studied. It is interesting to note how aware youngsters are of their repertory of interaction. Many of them assume a high degree of "modulation" in their behaviour, their questions and their responses, and they may even find some excuse ("I typed it wrong", "I didn't understand you") to make changes that will please their interlocutor. One girl said: "Of course I don't usually tell lies. But sometimes I will change things just a little, the things I say to the other person. After all, who's going to know whether I'm in university or in high school?" (S-23). This level of knowledge responds to the need to act with a certain "instrumentalist" strategy, especially for those who want to establish real bonds with their interlocutors. In the end, to get hard data, a mailing address or telephone number, is the goal that determines behaviour, although we cannot say that the interaction always takes place in this way. What we can say, however, is that every conversation goes through the different stages with distinct affective tones, with varied degrees of emotional and informational depth. Although all interlocutors can become deeply involved, there are some chatters who readily jump from one relationship to another, giving only the barest of data and the skimpiest of information on themselves in each case.

## The digital self

> "Is it so hard to believe? Your clothing is different and the hollows of your body have disappeared. You have hair again. Your aspect now is what we call a residual self-image. It is the mental projection of your digital self." (*The Matrix*[31])

What we are has to do, in a very basic way, both with the representation of our own image and with the image others have of us. We always construct ourselves in relation to someone else. The "self" is an entity in relation, as Gergen (1996) puts it . For Lacan (1981), taking the psychoanalytic perspective, image plays a key role in constructing the identity of human beings. In his travels, every navigator wants to recognize and be recognized. Every trip is the history of his searches and every object found is, in a sense, a reflection of what he is, has and desires: a reflection of himself, of the "self" constructed in the infinite sea of Internet symbols. Man is a species that needs to mutate, and he "suffers if he does not change", as Bachelard wrote (1987: 18); and in Internet space, transformation and reinvention are daily occurrences. The "self", made up of mutations, changes and instabilities, is the "digital self" of

the cyberspace navigator: a self that projects desires and limitations, a self that exists in relation to the Internet, even when it is not connected to it. In a very essential way, although a youngster's life takes place outside the Internet, the linkage to its symbolic space can remain open. "We are outside the direct relationship with a technological object, but we are not foreign to the symbolic world it mediates for us, above all because, although we are outside the Net, we remain connected to the media circuit of which it is part."

The digital self is a symbolic construction, a representation that is constantly updated within the cultural practices of users of the media circuit. With the singularities inherent in their relationship with the Internet, within the symbolic space created with it, youngsters seek an opportunity for expression. Each of their experiences is an "identity avatar", a search for being, the kind of transaction between the tensions that define what the digital self desires and what it finds in its daily navigation, particularly in chat rooms. These tensions are present because limits and desires move and intertwine. Each of our young navigators is open to new experiences that allow him to redefine his identity and the ways he represents himself (as will be discussed below).

## The textual pleasures of the non-book generation

> Language is a skin: I rub my language against the other. It is as if I had words instead of fingers, or fingers at the tip of my words. My language trembles with desire. The emotion derives from a double contact: on the one hand, a whole activity of discourse discreetly, indirectly, focuses upon a single signified, which is "I desire you", and releases, nourishes, ramifies it to the point of explosion (language experiences orgasm upon touching itself); on the other hand, I enwrap the other in my words, I caress, brush against, talk up this contact, I extend myself to make the commentary to which I submit the relation endure. (Barthes 1985)

The first identary experience that children have when chatting has to do with representation of their existence through a textual record.[32] It is a practice that is closely linked to the linguistic meaning of the processes by which the human identity is formed. Language is the primary structure through which an individual makes sense and order of the world. As Lacan (1981) sees it, we enter into the human world, with its subjectivation and the possibility of relationship, when we enter into language, which allows us to put a name to the Other, to be named by the Other, and to recognize ourselves as subjects in that naming. Language is the first, and probably one of the most essential, of collective structures. To be inside language, "to be in language", is to be inside the most complex and primordial web of bonds woven by our species in its process of humanization. "Through relational coordination language is born, and through language we acquire the capacity to make ourselves intelligible. Thus, the relationship replaces the individual as the fundamental unit of social life" (Gergen 1996: 309). As a being in language, the individual

is relationship. As an individual, his identity has been constructed in the relational language and his identity is therefore a narration, a historicization of what we have been, of how our relational microcosms have been constructed or destroyed. We recognize ourselves in language and we narrate/constitute ourselves through it. Relational life, which is structured in language, is the sign of an inevitable alienation, the "primordial alienation", which constitutes the subject (Lacan 1981). Before being "self" or subject, one is Other, because we use the Other's language, because we are the Other's language, because we name ourselves in it, because we move in its world of meaning, and once there, named and namers of the world, we are the Other, the Other of the "relational self" to which Gergen alludes.

Language introduces us into a cultural order, into rules for the construction and circulation of meanings. To be in language is to have a place in the world. A vantage point. An angle. A way of observing. "Beyond", "disorder" and "nothing" are words that begin to order the human view. "I look from language": the word allows us to see. We frequently find ethnographic examples that help to reveal this: for certain Inuit tribes, snow has as many as a dozen shades of white. Their language has many expressions for "seeing" the snow. There is a decisive connection between language and the way we view the world. "It is commonly held that language is the representation of the world. I would like to suggest the reverse: that the world is an image of language" (Von Foerster 1994: 100). And even if that were a solipsism, it would be absolutely correct for the world of chat rooms.

While the romantic writers in pen and ink of the 19th century were astonished when they explored their own subjectivity in depth, for today's youth those long mornings immersed in the digital text of the Internet reveal their hypersociality, mediated by the haphazard and disorderly words of the chat room. We have a generation of talkative chatters who are passionate about electronic text, not only in chat rooms but in e-mail and the romantic ads sections of the Internet – chatters who have perhaps never darkened the doorway of a post office and are now turning the mail into an institutional species on its way to extinction.

The writing that youngsters produce in the chat room is fractured, hurried; and its fragments have to be completed by the interlocutor. They believe in economy of language; and even when they stay online for long hours, they are aware of the fleetingness of time, of the possibility that their partner may disappear at any moment, and that they have absolutely no power to detain him. Short statements, monosyllables, succinct questions – these are the dominant features of chat room writing. The children are not used to developing their ideas and they start from a broad basis of shared assumptions. Being recognized as part of the media circuit saves them from providing great quantities of data on themselves. With little information available and with merely ritual questions as their tools, the youngsters must use the skimpy data they have to construct the image of the other person: in these circumstances they ask what they consider the most essential questions for

identifying the partner: What do you like? Have you listened to this? Have you seen such-and-such? Do you like the rumba? Video, music and parties are the identifying codes of a generation that is completely caught up in the media circuit that crisscrosses their daily life.

With its short and fragmentary texts, chat conversation signifies not written projection but "communicative intensity". In several sessions, many of the habitual chatters reported that they "talked for the sake of talking", that when the session was over there was nothing left, they had simply experienced the fleeting pleasure of the passing word. It is an anonymous conversation, and the next time it will begin all over again at point zero and for many it is likely to end there as well. In this sense, chat communication is prolix and, beyond its content, it reveals the importance of relationships, of entering into contact with others. We also find reiterative chatters, who always use the same predefined structure of brief communicative formulas. This type, more common among boys than among girls, finds in chatting that kind of creativity that invents not words but relationships. These children will usually write the same messages to all their partners – what counts is not the creativity of their words but the invention of a relationship.

For a generation of youth that is frequently taken to task for distancing itself from the culture of writing and books, it is surely paradoxical that one of the most frequent practices of young cybernauts is textual chatting. To a large extent, as noted earlier, this is because chatting is an experience that is not represented as a reading–writing exercise, and much less an academic reading – writing exercise. Yet, in our view, it is also because chat language is clearly not a written language, at least not in the sense that youngsters understand writing, and even less in the way they construct that language.

## A special-effects language

If we look in greater detail at how chat language functions, we find a great similarity with the functioning of a communicative code that children have thoroughly mastered: that of audiovisual consumption. Chatters type out quick messages composed with the predefined letters and symbols available on the keyboard, repeating letters and words, playing with acronyms, mixing upper and lower cases, and taking advantage of the infinite possibilities of combining characters. They frequently accompany their messages with predesigned images as well, in the form of little icons (a heart, a smiling face), or the participant's nickname. On the other hand, their brevity of style and the need to capture the partner's attention require a language focused on establishing contact, on creating a link, and so chatters use a kind of "special effects" language to keep the partner alert and interested. And every chatter has the same assumption: if someone enters the chat room, it is for amusement; and knowing this, everyone assumes that to keep the chat going it must be amusing for the partner. One boy said: "When we go online that means we're not very busy, which is usual, right? So if you're not very busy, you want to

amuse yourself with something and it's very nice because when we go online and start to amuse ourselves everything goes very well, right? Because we're not committing ourselves to anything, we're just doing something that will make us laugh and that will be fun" (S-23).

Determined to amuse and to be amused, to have an impact and to feel one too, to experience an intense emotional involvement, the children use simple typing games and ready expressions, constructing in this way a "special effects" language. If we observe online conversations, we will find no lengthy narratives with elaborate metaphors – on the contrary, everything is concise and fragmentary. "What the youngsters like about chatting is not writing but communicating." The intensity of the communication lies not in its length but in the imaginary context of the relationship. Their shared cultural capital and the constant assumptions they make about each other help turn the chat room into the stage for an emotional relationship, either to entice the other party or to fight pitched battles online.

## Tensions and shifting digital identity

> "The chat room", said one boy, "Is also a way of letting off steam, and then hiding when people look and say you're really awful, I don't like you, I don't want to chat with you . . . in the chat room you can cut loose and say what you want . . . or if you want to seduce[33] someone over the Internet, or anything that occurs to you, you can do it, and if someone suddenly says, hey, you're mean, you're gross, well fine, but nobody can kick you out, nobody can say, hey, scram" (S-14).

Although in daily life there is no explicit consciousness that "we are bodies", we often think about our body, in the way we present ourselves and in the way we act in front of others. Our body is an exclusive or inclusive sign, and in interrelationships it functions as a symbol of different degrees of attractiveness depending upon the group and cultural standards of socially accepted beauty. We are probably most aware of our body when we are in an affective interaction. Youngsters who are just emerging from an adolescence in which corporality has great social meaning feel their body either as a bridge or as a boundary, something that either unites them to others or separates them. When they are chatting, they become progressively more involved in their words and, in the opposite direction, there is a symbolic process of "psychological disembodiment". In a sense, the "textual existence" that the chatter acquires implies a shift in his communicative relationship with his body: in chatting we are less body and more language.

In comparing personal communication with what happens in the chat room, one boy said: "There are some people who say everything they can . . . they say all kinds of things, they open right up and they say anything and then later when you are talking personally, they shut up, they become more timid, but let's say in the chat room there's an atmosphere that makes us feel expansive, like free" (S-20). In daily life we judge people from what we see. On the

Internet, the digital realm of the visible, where children can "let it all hang out", it is paradoxically impossible to see the body of the other person. This experience has two important consequences. The first is the perception that there are "no limits". Without physical limits, the children feel released from self-censorship of the kind that governs their communication in other spheres of social life. In their daily lives, individuals think more than they say, but their ingrained social regulation creates degrees of self-control that facilitate interrelationships. In the chat room, children lose many of the characteristics of normal social interrelations: first the body, then self-censorship. The limits on communication dissipate, or rather become wider. The youngsters who admitted to having weaker communication skills in their daily life expressed this most emphatically.

The second consequence of "psychological disembodiment" is the perception that one's interior world is expanding, an experience that emerges with great expressive force. Feeling themselves freer and uncensored, young chatters communicate the things they feel most deeply about in their personal life. After passing through the bonding filters referred to earlier, they begin to represent themselves as two essences in contact. With no body to be seen or criticized, with their imagination excited by the notion that the other person is the object of their desires, they plunge quickly into an ambience of strong intimacy and subjective exaltation. In the world of fragmented speech, chatters communicate in a way that is almost mystical, with intense contact and strong sincerity. Normally, online conversations become a complex process for exploring subjectivity. One youth narrated how chatting led him into unexplored dimensions and facets of his identity and subjectivity: "It's like knowing about another facet of yourself, if someone is not there in front of you, you can say some pretty suggestive things (such as ***papito***[34]) and get away with it . . . we did this once and had a lot of fun with it! We all have a creativity that is, like, impressive. So I think that we suddenly get to know ourselves, we can unburden ourselves of something that we have kept very close, and we know that the other person is not going to tell anyone" (S-23).

In this expressive and expansive atmosphere, young chatters can explore a wide range of possibilities for their digital identities. Without pretending to an exhaustive classification, we may organize the identities represented in the chat room into three basic functional forms. First, we have youngsters who prefer to represent themselves with the same self-image they have in their daily lives. These are the children who say they are "really themselves" when they are chatting. They are the most likely to achieve a prompt and advanced degree of intimacy with their interlocutor. Second, there are the youngsters who represent themselves by what they would like to be, with a certain image that they would like others to have in imagining them. Chatters of this kind like to engage in role-playing games where they represent people with features that represent their ideal. A third category of chatters relates to those who present an identity that they think their interlocutor is seeking. These children are experts at modulating their personality, jumping from

one role to another to meet the demands expressed by the partner. They train themselves to interpret schemes typical of the partner, they are aware of a wide range of possibilities, and they expect each partner to act more or less in a certain way. They are the most versatile of our three types since they have to constantly reconfigure their representation of their digital identity to adapt to other people's expectations.

Although we may imagine a broader classification, this one is what emerges most clearly from our observations of student behaviour in this study. Each of our chatters can exhibit these three ways of representing himself, separately or in combination, even during the same session. What most commonly happens is that the children will assume one of these types depending on their motivation, the places where they are navigating or the relationship they have established in their chat. For example, if they are seeking someone to play with and have a few minutes' fun, they will jump right in and start communicating without worrying about content or downstream goals. When they are navigating at school or at home, in the company of their peers, they will tend towards tribal behaviour. Demonstrating courage and inventiveness becomes a reason for going online to represent personalities and play role games that will fool the other person. As amusement, this practice serves to win recognition among their peers, and the same is true with acts of courtship. Boys more than girls (although girls too do this more often than they care to admit) seem compelled by tribal feelings to convert the search for "virtual conquests" into a kind of competition.

## The strange logic of truth

"When I'm good I'm very good, but when I'm bad I'm better." (Mae West)

Role-playing, fiction and identity games are recurrent practice in the chat room. Testing how far one can push the invention of "self" leads to "a strange logic of truth" in online conversations. One boy declared: "If you're there in a chat, first you don't know whom you're talking with. Second, you don't know if everything he says is true. So you can talk with him and tell him your version of things and then he will do the same, but you don't know if it's true. It's fun to talk, but you can't be sure that what they are saying is always the truth" (S-23).

From their own experience with chat rooms, children are suspicious that others may be lying to them. And having done it themselves, they are aware that truth in chatting is always fragile and relative. The analogy of understanding others by what we ourselves do is common in everyday interpersonal interpretation. In constructing the truth about others, there is an implicit reciprocity. On this point one student said: "Maybe I wasn't telling the truth, but I wasn't sure whether they were telling me the truth either. So I just talked normally" (S-23). In the chat room, children construct truths and fictions at different scales. Assuming personal characteristics that they consider

desirable, they may tell falsehoods to entice the other person and to establish a subsequent relationship. Or they may pretend to the opposite traits in order to annoy and insult. In this case, the common practice is to pretend to be a person of the opposite sex from that of the partner: boys pretend to be girls and girls pretend to be boys. The game ends when the deception is finally revealed to the other partner. It is a demonstration of aggressive power in the face of a partner who is "presumed" to be sincere. There is of course a paradox in the logic of "truth in the chat room": it means assuming the other person's sincerity in order to deceive him. In this sense, then, we must put parentheses around the notion that chatting always involves lying.

In the game of representing the other person that takes place in these cases, there is an evident deviousness that implies being able to assume a role as well as possible. Starting from the premise that everyone may be a liar in the chat room, the youngsters know that in principle the others are on guard against being deceived. In representing their personality, then, they make a great effort to appear sincere. When they assume a "good" personality, they will say everything imaginable that is good; at the other extreme, when they are simulating an "evil" person, they will dredge up everything they can think of that is bad. Finally, one way in which the paradox of this strange logic of truth becomes clearest is when the children, guessing that they are being lied to, decide to be profoundly sincere. How does this happen? In one narrative, quoted above, a girl said she behaved very sincerely, although knowing that people might be deceiving her, because she knew that if she said something very personal, something that she would soon be sorry for having confessed, she could always say it was not true whenever she wished. This made her feel more comfortable since she could be as sincere as she wanted, even if everyone might be lying to her.

## Teenage chatting: snippets of love talk

> What love unveils in me is energy. Everything I do has a sense to it . . . but that sense is an inaccessible finality: it is no more than the sense of my own strength.
> (Barthes 1985)

An age-old theme, as old as our species, jumps out at us from the chat sessions. "I got into this chat site", said one boy, "because right up front it says love and then I think, wow, love, and in I go" (S-10). At every online chat site there will be channels called "pink zone" or "for lovers", or "seeking a mate" or simply "love". At most of the chat sites used by youngsters, these rooms are classified by international geographic zone and by city for each country. Of course, the chat room does not have to be defined by its creators as a place for love talk in order for children to seize upon it as such, promptly and massively. Many chat sites carry ads in their interfaces offering free electronic greeting cards that carry love messages. Some sites offer a repertory of cute little love sayings, available for instant use. As well, the most popular

chat pages on the Internet offer dating and matchmaking services and sources of advice for the lovelorn.

Love sells – there is no doubt of that – and Internet companies know it. Users, for their part, find in the Internet a place to find and fall in love. Chat rooms are thus a popular place for seduction. Although both sexes like to seduce, it is the boys who seem to be more active at it. It is generally the boys who welcome girls to their conversations. In the chats we observed, at least during daytime navigating hours, girls, or at least female nicknames, show up in fewer numbers than males. When a girl joins a group, she is likely to be welcomed by many male chatters at the same time. This structure would seem to make girls "rare commodities" and thus highly sought after. We rarely found this in the case of boys. Probably for that reason, it is the boys who take the initiative to make contact with several female chatters, hoping that at least one will respond. The chat room seems to become a marketplace for seduction, a place where everyone can desire, where everyone can seduce, but it is swamped by messages from boys and the "hard to catch" behaviour of the girls reestablishes the normal active–passive ritual.

Most of the students in the public schools had no computer or Internet connection at home, but those who did had a favourite time for engaging in love talk: "For kids, Internet love is nocturnal." "At my cousin's house last night, we went online at nine o'clock and we got off at five in the morning," said one boy (S-29). When they have access, the best time for sharing love talk would seem to be at night. While the censor at school is the teacher, at home it is the parents – and they are more worried about the cost of the connection than they are about what the children do online.

The nature of love talk on the Internet is similar to the textual forms described earlier. The narrative style swings between two extremes: the classically romantic and the explicitly sexual. In the latter case it is the boys who say they are the less inhibited. The girls, while hardly indifferent, insist that they reject such content. The two kinds of love talk can be interchangeable and one may "morph" into the other. Similarly, "cyber romances" (limited to the Internet) are less frequent than post-chat encounters. Even boys who never thought of a "real" encounter as a possibility seemed to have no interest in a relationship conducted exclusively over the Internet. It may be that Internet-focused love relationships arise because of geographic distances, or because users are just beginning their relationship with the Internet, or perhaps, as we have seen, because they do not believe that other people can be more real than the fiction of their written words. We think, nevertheless, that it is geographic distance that in the end determines how long it will take for a virtual relationship to become a face-to-face one. Perhaps it is not very satisfying to have a "cyber girlfriend" living in the same city. On this point, one girl related her experience: "It was when I was just starting on the Internet, and I really wanted to visit Argentina because I like Argentine boys . . . so I went and I got to know a boy and we started to talk, and he sent me e-mail and I sent him e-mail. And then we got engaged over the Internet, we became

"cyber fiancés." And that went on for some time, then we stopped sending e-mail" (S-23). For a relationship of that kind, where affection can grow over time, if the partners had lived closer to each other, a personal meeting might have been the most feasible denouement.

Idealizing the other person in the midst of amorous discourse is something that occurs frequently in online conversation. When youngsters imagine the other party, they set up in their fantasies idealized objects with all the socially accepted beauty features: "The Internet would seem to have no room for the homely." "Many times", said one girl, "we imagine something ideal, OK? So if I want that other person to idealize me, I will say, no, I'm not tall, I'm about this size" (S-23). In this way the chat site functions as a place for updating and projecting the stereotype of one's object of desire, not only because one is seeking it but because each person can appear there as the most desirable partner. This "erotic dynamic" of chatting also has its counterpart: the public display of hatred and aggression. In several sessions and in the interviews, the youngsters, more frequently the boys than the girls, related situations of group aggression on the chat line. The boys had various strategies. When they could do so at school, they arranged among themselves to join a specific chat room and began as a group to insult selected participants in the public section of the site. They did the same thing when they set a time to join a chat room from home and began throwing insults. They functioned exactly like a tribe of warriors. This situation was highly analogous to that of video games that pit teams against enemies with one clear goal in mind: to kick them out of the chat room. One boy said: "Take the Argentines, for example. Those guys are really conceited, even on the Internet. So we pepper them with insults. For example, we will throw back the same words they use, for example the word ***boludos*** (jerks)" (S-20).

Although Internet site administrators are exerting increasing control over these situations, users find ways to keep on fighting each other (e.g. changing their name after it has been withdrawn). The target of their attack is not random: it amounts to constructing "Latin American regional stereotypes". Functioning nearly always at the country level, the youngsters in this study constructed a ranking of nationalities in which they respected some and insulted others. In the logic of these battles and in their representations of others, there is a particular geography. Colombians look down on Peruvians and insult them, and yet, reluctant to venture into unknown territory, they respect Mexicans, whose quirks they do not understand. Venezuelans simply do not exist. Hispanics in the United States are something new, and Colombians are ambiguous about them. They despise Argentines and try, unsuccessfully, to ignore them. It is interesting to note that, whether because of cultural relations, shared media symbols, language barriers[35] or geographic proximity, the youngsters prefer to chat with partners from Latin America, whether to insult them or to seduce them.

As can be seen, in the chat room love goes along with dislike and aggression. The outcome depends on different variables, many of which have

nothing to do with the express intention of the navigator since, as in a video game, even those least disposed to do so end up involved in the amorous logic of love talk or in the excitement of verbal "video war".

## The chat room: online psychotherapy?

In the 1960s various kinds of group-based psychotherapeutic encounter techniques became popular. Among these was the T-group or therapy group.[36] The dynamics of this kind of encounter group are characterized by a strong feeling of community, high levels of sincerity, great subjective and intersubjective exploration and an openness to emotions of different kinds. Such groups were conducted in exclusive and confined spaces. They generally had a very strong personal impact. Yet, for their critics, they had one crucial weakness: by constituting themselves as a special space, they made themselves remote from the everyday life of participants and, although the experience might provoke spectacular changes in them, they proved to be fleeting and unstable. In short, the encounter group was an intensely emotional experience that tended to fade quickly once the therapy was concluded.

If we examine the space, the relationships, the content and the emotional settings that are created among youngsters when they enter a chat room, we will find important similarities with the behaviour of encounter groups. Their communicative openness is similar. The predominance of the affective dimension and expressive openness are factors that both spaces share. They also share one characteristic that was identified as a weakness of the encounter groups: the fact that they were divorced from the daily lives of participants. Chatting tends to function as a symbolic space that is disconnected from its environment. As a result of "psychological disembodiment", of identary experiences that idealize the self and others, youngsters experience the chat room as "a world apart", one that they enter, enjoy and then leave. It is not easy to say just how far the practice of chatting really intersects with the transformation and development of behaviours and personalities, yet from the data at hand, it would seem that online conversations occupy another of the "fragments of daily experience" that may or may not be articulated with the living space of each student. Although we must not assume that life is a coherent set of experiences (quite the contrary), the description of the chat room as "a world apart" lets us identify the behaviour of youngsters on the Internet as a fragmented experience.

Moreover, youngsters' clear preference for chatting is due to its potential for social relationships. As one boy put it, "Chatting is the only way we have of meeting more people, whereas if you enter a common and current page the only thing you can do is participate in a few forums or such, but there is no possibility of meeting more people" (S-22). With their hypersocial style, youngsters seek out spaces for contact on the Internet and although there are more communicative possibilities, compared to online conversations, they prefer the chat room, not only because they are unaware of other resources

or have technical limitations that impede access to them, but also because chatting offers a primordial possibility: there is always someone available, and available instantly. Without any waiting time, with cultural codes focused on the here and now, chatting represents an immediate and effective link to others.

Whether the experiences described here are desirable or not is beyond the interpretive claims of this study. Yet it is worth noting that an experience like that of the chat room can have both positive and negative aspects. What will in the end define the quality of the impact of digital technology on this population group is not the direct relationship with the object (which is rarer than we would like) but the environment and the meanings with which cyberspace culture relates to their everyday lives. What happens to a youngster when using the Internet has to do more with what happens in his life as a whole than with what he does in his determined and excited navigation through the chat rooms.

## The media circuit

The mass media and electronic networks function as a symbolic interconnected circuit. In that kind of techno-communicative macro-network, the Internet exists in a "media circuit" where practices and meanings are exchanged. Each ICT relates to other media and to itself, as a highly complex symbolic circuit. Communication technologies have an inter-referential and omnipresent existence in the fabric of social life: advertising comes alive on television and video, the Internet sells us stations and music that we can hear on the radio, while the radio tells us about the great informational value of the Web. But this media circuit does not stop there. Our conversations feed upon advertising slogans and vice versa: the media throws our own language back at us. To repeat what one boy said, taking his words from an advertisement, "I really like the advertising slogan for Sprite – it says a lot. Even though what they're trying to sell is a brand, in fact it says a lot." The media circuit reaffirms, with the participation of spectators and users, a space of symbolic interaction. The "macro-network" of the media circuit is not only technological, it is above all cultural. In other words, before the Internet we were already connected to the "macro-net", to the media circuit of contemporary technocultures.

Today's space is like Alice's mirror shattered into bits. With the multiplicity of images of the world produced by our relationship with the media, we do not know exactly where reality begins and fiction ends, or whether that division is even valid. Before the digital networks and the audiovisual media, in that time that we can no longer imagine, we obtained our images of the world from primary groups and our local environment: they were few and clearly defined. The lifestyles that we observed were primarily those of our surroundings. This restricted setting was readily knowable. Life was based on order: everything had its name, nearly always an everyday name. There

was only one mirror in which we could see ourselves. But that mirror was broken. Mass ICTs were invented and they began to produce images that overwhelmed the human capacity to process them. These technologies, directly or indirectly, now inhabit our daily lives. For the generation of youngsters in this study, who were born when the Internet was already 15 years old, their surroundings, however humble, have been peopled by objects, by communication structures, by relations and by meanings constructed within them.

The Internet emerges in this space, where youngsters have suffered a process of "technological socialization". The audiovisual media have been the greatest technological sensitizers of youth. While a society's media circuit is articulated with various communication systems, when it comes to youth there are two systems that are fundamental: music and television. At the wrap-up of one discussion group with youngsters in the study, one of them commented on his work on the topic of the media: "Well, we took a kind of survey among those of us who were discussing this topic, where we could see how often we used each of these communication media - we saw that the telephone gets used between 45 minutes and an hour, and when we have no telephone this affects us but only to 50 percent; television we use on average for 12 hours a day, and if we didn't have TV it would affect us to 90 percent; as for the radio, we listen to it an average of 8 hours a day, and if we didn't have it that would affect us to 80 percent" (S-14).

Youngsters not only consume long hours of television time, but they are aware that they do so. Through television they have steeped themselves in some of the principal logics they now use on the Internet. To some extent we may say that many young television viewers navigate over the Internet in the same way they do with television: the youngster who surfs through the ads on the Internet and navigates in multiple windows at random has long been familiar with the effectiveness of "zapping" through television channels.

When it comes to music, it occupies a social space with a complex symbolic structure, the principal scenario for which is the radio, another of the main components of this media circuit. Radio is a market of signs, types, groups, rituals, daily practices, entertainment, tastes and aesthetics. In the mid-1980s, with the great popularity of the media and the transnational growth of record companies and the mass marketing of musical video clips, youngsters came to recognize the music of the market as an identifying object. Radio, for which there is a wide audience in the country, began to establish a style based on "musical interaction" with young listeners. In the beginning many broadcasters offered youth music programmes and later "musical variety magazines" for youngsters. This meant simply that the station allowed listeners to set the programme by calling in their requests. What made (and still makes) these programmes successful was their "interactive" nature. They in fact set the style for the next decade. The 1990s saw a burgeoning of a type of radio programming based on cultural codes that were deeply shared by youths. The children would call up the station, interact with the hosts and respond to

other listeners. Besides gratifying the wishes of their young listeners, these programmes appealed to them with questions about their private lives. The rumba, infidelity, love, betrayal, sexual initiation – such issues were frequently addressed over countless stations of this kind.

Radio, music and television are the main elements that shape what is a space of reception, a media circuit, a space for cultural appropriation of the Internet. Yet youngsters also find differences that, except for the cost of access, work in favour of a more "positive" representation of the Internet. The main difference lies in their perception of the Internet as a more manageable space, one where they feel more in control over content and events. "On television", said one student, "you have the programmes they are offering, but on the Internet we can look for other things that interest us, something we might want to learn, or you might have some curiosity you want to investigate, whereas with TV, well, you watch programmes" (S-30). The fact that they feel the Internet to be more open to their own decisions and that they see depth in its content creates in youngsters a feeling of greater autonomy than what they experience with the remote control unit for their television.

On the other hand, the relationship of the media circuit with the Internet also opens a space for differences that, according to youngsters, work increasingly in favour of the Internet. Those perceived differences are important: they relate to format, scope, organization, and, above all, the depth of information. On the Internet, in its representation as an "unlimited object", a space open to view, youngsters find greater depth and therefore more credibility. "Let's face it," said one boy, "television sometimes lies, you can hear a lot of lies on the news programmes, and then the next day you look in a newspaper and you find more information and you realize that's not the way they were painting it, because the communication media are already in cahoots, whereas with the Internet we can find a lot of things, you can give your own opinion, and that's great because there you can see your own point of view and what you believe, and not what the newscasters are telling you" (S-27).

In another respect, relating to the gender of users, the media circuit has important differences. Comparatively speaking, our study found that technical skills in using the Internet and handling the computer itself were greater among boys than girls. The processes of technological socialization have produced an image where men can control machines. In everyday life, women have less chance to explore technological objects. This socializing style can also be seen in the approach to the Internet, and power is redistributed over a scale that ranges from the simplest objects, the television screen, to the most complex ones like the computer: boys work with computers and girls watch television. On this point, one boy said: "I spend nearly my whole day at the computer, and the one who watches television is mainly my sister" (S-22). There are differences, too, in navigation practices: the girls will visit things like horoscopes, while the boys prefer sports; the girls go for singers, the boys for online games. Yet when youngsters find themselves with homework tasks that require Internet searching, many girls are more at ease with this than are their male classmates.

The Internet has integrated itself smoothly into the media scenario, mainly because it has affinities with its predecessors in the areas that children use most. In the media circuit, including the Internet, youngsters find a way of keeping in contact with their generation. The great capacity of fashion (an important focus of the media circuit) for informing youths about the behaviour, emotions, values and symbols accepted by other youths is what makes it so central to their lives. The latest song, the sports scores, the horoscopes, the fashion models, the special effects and the latest software are just some of the many things that circulate through the media circuit. For youngsters, the information contained there has to do with the world that is important to them, far more than the daily routine of school, family or tradition. On this point, one youth observed: "The communication media teach everything, everything a person can learn: vocabulary, teaching, learning" (S-21).

## The need to prohibit reading

> To show you where your desire lies all I have to do is prohibit it a little . . .
> (Barthes 1985)

A frequent concern of teachers when they leave students alone with the Internet is that they will visit pornographic sites. And of course students confirm their teachers' expectation. For youngsters, the prohibited sites are the X-rated pages. Visiting them awakens tribal emotions of complicity, praise, delight and other shared states of mind that arise when navigating through "porno" pages of the Web. The awareness that they are breaking a rule, that what they are doing is prohibited, makes them even more determined to navigate through censored sites.[37] In this respect, one student stated: "There are lots of things on the Internet that are prohibited, and so they have a real cache. Anything that is prohibited is going to be even more exciting when you can finally get to it. If political pages and such were prohibited, then everybody would be rushing to political pages to see what they're all about" (S-25).

Applying the logic of this narrative, it will be clear that if we want to achieve a certain goal we must first "prohibit it a little". The act of jumping over the bounds of prohibition has two principal aspects, in the context of our research. First, the function of accessing pornographic material is a form of confrontation against school regulations. In many cases, the main reason for visiting "X" pages is to enjoy the thrill of being disobedient or rebellious. "At school", said one girl, "what happened is they used these screen savers of girls, naughty girls all bent over, and they said they couldn't sleep at night because of the scandal the guys were causing" (S-12). The second aspect relates directly to the complex process of personal development in a cultural setting that makes a strategy of exhibiting the body as a visual product. That issue is beyond the scope of this study, but we may say that in their psychosocial development these youngsters show signs of vague but real cultural stress over their sexuality. The off-limits "X" sites in effect make the Internet a

place where the things they are forbidden to look at are on full and open display. If the principle that everything can be shown on the Internet brings with it censorship, then the "X" sites become really seductive: if something is prohibited in a realm where everything is visible, the children will have all the more desire to see it. In any case, amid all this visual abundance, the "X" sites are equations that are solved by the "order of desire" that a culture constructs.

## Epilogue: the strategic importance of the Internet extends beyond it

Because of the way the images of ICTs are disseminated in our countries, they have been converted into an oversignified object, more imagined than real, an ambiguous cultural object that is both desired and feared. As "technophiles", we are dazzled, enchanted and seduced by computers; as "technophobes", we look upon them with scepticism and suspicion and are quick to denounce the dehumanization to which they are leading us. Perhaps we are not at either of these extremes, which apply to many objects of human technology; perhaps we are in some intermediate and shifting position. Perhaps not. For some people, digital technology could be (and this is merely a hypothesis) the representation of a globalized world, modern and hyperwired, from which we as a peripheral country are excluded; for others, that technology is probably something magical, inexplicable and anthropomorphic lurking in some recess of their daily lives. Whatever our attitude, it is impossible to be indifferent to it, and we are bound to construct some image of what it is, even if we have not tried it yet.

In the fields of work and communication, computer technology is a tool widely recognized for its potential for increasing productivity. In the world of education and in everyday life, its possibilities, as we have seen, are still limited and unexplored, at least in our country. In our context, existing technology is inequitably distributed in the midst of an educational structure that is notably segmented and socially differentiated in terms of quality.[38] Recent studies of public education (Parra 1995; Castañeda 1996; IDEP 1999) have shown that the educational structure is very weak, with an undertrained teaching staff, rigid school organization and dynamics, systemic instabilities, discontinuity in planning, and education policies that have little impact – as well as a chronic lack of funds, which are increasingly being siphoned off to fight the guerrilla war or to mitigate its consequences.

Similarly, various academic achievement tests administered to students in mathematics, formal reasoning, maternal language and foreign language skills (which are essential in view of the spread of English as the predominant language of the Internet) have shown enormous shortcomings in the development of the country's children and youth. Given the limited degree to which ICTs have been incorporated in the schools and the problems of appropriating them culturally, there is a need to rethink the strategies for

using ICT in education, starting with primary and secondary schools, which are the least-served levels of the system in this respect. This is of course a problem of huge scope that can be viewed from many angles – to start with, by analyzing the problem we have addressed in this study: the psychosocial experience and cultural practice of students with the Internet. In a world that seeks to become a planetary society, where the circulation of knowledge and communication are the keystones of its functioning, "technocultural skills" must be a fundamental issue for the education agenda of all Latin American countries, especially when we recognize that the unequal appropriation of ICT is having an ever more decisive impact on the international scene.

Moreover, the impacts of the new ICTs that we have attempted to examine here need to be recognized in rethinking social policies for ICT, reorganizing the school system and developing training policies and refresher courses for teachers. Current educational thinking is assigning the teacher a new role, one that is highly promising in the debate over ICT in education. The United Nations Education Agenda declares: "The teacher is increasingly a learning facilitator, a skilled mediator between multiple educational opportunities and the motivations and expectations of students" (Gómez Buendía 1998: 229). If the teacher is to be a facilitator and mediator, there must be a more cooperative relationship between students and instructors. The generational gap in technological skills can complicate the pedagogical relationship, because teachers are not always well trained in the use of digital tools, but it can also be a valuable opportunity to share knowledge, to redefine teaching–learning roles and to foster a climate of cooperative exploration between teachers and students.

When it comes to the appropriation of ICTs in the school culture, we must question the frequent representation of that process as simply having a "machine" and learning to manipulate it. International experience and the results of this study show that technology, however complicated, sophisticated and accessible it may be, requires a suitable context for appropriation. If it is disconnected from planned education projects, from organized experiences, from systematic cultural and pedagogical designs, it will have little chance to produce innovations that will improve the quality of education and promote social equity. Technology "is not just a question of working skills". In the case of the Internet, as we have seen, the inability to take full advantage of it stems from the social relationship in which it is introduced. The success or failure of the Internet, whether in the school or in society, will depend on the cultural space of appropriation: the best technology can disappoint in the context of an unstable social, cultural and educational relationship.

## Notes

1. Besides the lead researcher, this study involved advisors and research assistants in the fields of psychology, anthropology, systems engineering and pedagogy. The following were members at various times of the interdisciplinary team: Rocío Rueda, Elizabeth Castillo, Ivanna Castaño, Mauricio González, Paola Pardo, Paola Agudelo, Andrés Pérez, Elkin Garavito, Marcela Ortiz and María Fernanda Otero Hernández.
2. See <http://glca.org/mellon99/rheingold.shtml>.
3. Of course, in addressing the cultural practice component that is also implied in the question, we are thinking in terms of an assumed link to "cultural studies": culture is understood here as the realm in which meanings are produced. To understand the "meaningful practices" in which culture operates is to recognize a highly visible fact: the urban dynamics that characterize contemporary culture are strongly tied up with the new forms in which cultural meaning is produced and communicated.
4. As we shall see in this study, such "resignification" does not mean placing all the emphasis on the user's autonomy in order to indicate his capacities for freedom, strength or resistance with respect to the Internet. Although we keep a healthy distance from viewpoints that treat the media as "powerful, omnipresent and manipulative", we also steer clear of the opposite pole of "total resignification", which assumes that the audience is just as "resistant", free and autonomous as we would like it to be. What is certain is that subject–technology relationships take shape within a complex web of interplay between technological objects, meanings, contexts and users from which multiple directions, determinations and reciprocities are constructed.
5. Of course, the concept of cultural capital is of a magnitude and complexity that far exceed the bounds of this study. Nevertheless, as an interpretive tool it has allowed us to approximate the cultural dynamics essential to our research goals.
6. The different versions of its origin that circulate over the Internet all agree that from its earliest days e-mail and bulletin boards were among the widely used resources, the content of which typically referred to the daily lives and personal relations of scientists, academics and military personnel, who were the principal users at that time.
7. In the first exploratory phase we sought information on a sample of about 120 public high schools.
8. Data for Colombia were taken from marketing research by M. Puertas, published in *El Tiempo* Bogota, October 15, 2000, Section 4.
9. This programme includes an equipment component and a training component for teachers and education officials. According to its own data, REDP is to be implemented in three phases: in the first, 200 schools will be connected, in the second 492 and in the third 35. An operations centre has been established to administer and run the service. Schools were equipped in accordance with two scales, ranging from 3 to 10 computers each, the latter cases including a server.

10. We should point out that, apart from the REDP figures and project implementation data, available information on the previous status of the Internet in Bogota is hopelessly inadequate.
11. The global inventory also highlighted how social representation plays a key role in ICT efforts in the city's education system. Indeed, the problem lies not only in what happens but also in how it is viewed: for one school, getting 2 computers could be the answer to its dreams, while for another the 20 new computers it has just received might fall far short of its expectations.
12. A few of the schools were private: they were selected because certain similarities and variables such as experience and gender made them interesting to explore, and particularly because they offered useful information that could be generalized to all the target schools. A well-equipped private girls' school, with a socially mixed student body, was the principal source of information on how girls behaved with the Internet.
13. Paradoxically, despite the broad sample we started with, we had great difficulty in selecting our focus group because the information mechanisms on the education system are sketchy and highly disorganized in this respect. There is no consolidated information available at the central level, and not enough is known about experience in the schools. Moreover, outsiders face considerable hurdles in gaining access to the schools.
14. This experiment was crucial in observing how the school setting, which is more symbolic and physical, affected the representational dynamics of the Internet among the students.
15. With a video camera focused only on their screen, the children talked about the steps they were taking in their navigation. Despite its tremendous potential for capturing direct information, this tool was not very useful to us because of technical difficulties and the fact that the children frequently neglected to record their doings.
16. As one might expect, it was the free navigation sessions that were most in demand.
17. The student survey was open, but it covered only information from the target schools. The teacher survey was administered to each teacher on a voluntary basis and included the non-target schools. Although the interviews were not as systematic as we would have liked, they did shed some interesting light on basic aspects and thereby helped to confirm our qualitative interpretations.
18. We preferred to be focused rather than exhaustive in presenting our findings. The CD-ROM that was prepared as part of the research contains more interactive and in-depth ethnographic information, in video, audio and text formats.
19. In accordance with our ethnographic approach, the report is designed to highlight the players' own voices. Their stories, recast to make them readable in written form, are identified as follows: S or T, followed by the number of the ethnographic database file in which the story is recorded. "S" refers to student and "T" to teacher.

20. There is also another possible option: the difference in the two cultures may be sustainable and perhaps the "resignification" of school means that the school must differentiate itself and enhance its identity, i.e. it may be that the learning experience it offers is so significant as to be not the exclusive space for knowing and learning (in today's society there are many other contexts where intense knowledge and learning experiences can be had) but rather the place for a particular kind of knowledge and learning that is not out of tune with students' cultural surroundings but complements them and allows the students to represent them differently.
21. In this study one of the six institutions selected offered a good example of a school that is integrated with its cultural setting. Another one came close; and although it was a public school, its geographic and cultural setting coincided in general terms with those of a middle-class institution. Some students in a third school belonged to the middle class and had some real sociocultural possibilities. Most of the other schools in the preliminary phase of the study fell under the category of schools in crisis, as described earlier.
22. Commercial transactions over the Internet were reported by only a few students from the school with the highest socioeconomic level and by one student from a public school, whose well-off parents had participated in online auctions.
23. They navigated with skill and enthusiasm through the sites of their favourite singers and actors, the web sites for their favourite television programmes and online magazines, and yet, paradoxically, both in the interviews and in the discussion groups, the students complained openly about excessive advertising on the Internet.
24. In the course of planning their careers, some of them have been looking to foreign universities to pursue their postsecondary education. A boy from the highest-income school, with a "technological imagination" fed by living in his well-equipped high-tech home, said: "Most of us want to study something related to mechatronics. There is no way to do that here in Colombia. I know already that I am going to study in Spain and that my parents will foot the bill" (S-19).
25. There is an extensive literature on this point. For a synthetic summary, see Hernández (1998) and Martín Barbero (1996).
26. One student told us how she reads with the Internet: "I download the information, I print it all out, I look at the pages of the magazines and I print some of them, and I have an album of everything I printed out, everything that I have looked at" (S-23). Incidentally, electronic magazines are among the pages most frequently visited by the students we interviewed.
27. For its part, the school tends to ignore this "hyper-reader" exercise in its "reading–writing" component.
28. The teachers reported a recent negative experience with a massive virtual training course, which aroused great enthusiasm among teachers in Bogota but, because of the technical and pedagogical weaknesses of the software, generated frustration and rejection within the education community.
29. For the notion of cultural and symbolic capital, see Bourdieu (1985, 1990).

30. From "Betty la fea", a popular Colombian television series (translator's note).
31. ***The Matrix*** is a 1999 film produced by Warner Brothers, written and directed by the Wachowsky Brothers.
32. The observations and statistics in this study indicate that the only kind of chat in which the youngsters engaged was in written form. Video and voice sites (even a predefined voice selected by the user) did not enter into their experience in navigating the Web.
33. ***Levantar*** in youth slang.
34. ***Papitos***, flirtatious compliments with a heavy sexual undertone.
35. One of the questions in the survey used for this study asked about knowledge of English on the Internet. The students generally scored quite low, perhaps the lowest for any question. If we are planning the rigorous introduction of the Internet at school, we will quickly run into a still-unrecognized problem for the public school: the low level of second-language skills. In the national tests given to students in the last year of high school, English was the subject in which scores were the lowest throughout the country, both in public and private schools.
36. For our discussion of encounter groups, we have relied on Dreyfus (1977) and Schutz (1973). Dreyfus reviews the literature and the classics from the heyday of the encounter group, while Schutz, a proponent of one of its currents, addresses the topic from his own psychotherapeutic perspective.
37. As well, there is an element of gender differentiation. Boys are more likely than girls to be interested in pages with explicit sexual content.
38. The differentiation of the new ICTs in Latin America is growing. For Finquelievich (1998), ICTs have split the city in two: a rich one and a poor one. This division is not new but, in the big cities of Latin America in particular, a new duality has emerged together with the intensification of knowledge and information activities.

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# Introducing new information and communication technologies in two rural schools of central Chile: An ethnographic approximation

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As the development of the information society is increasing the opportunities for access to data and facts, education should enable everyone to gather information and to select, arrange, manage and use it. (Delors 1996: 23)

## Introduction

In today's globalized and wired society[2] certain ideas about "development" have become so socially ingrained that they appear to have moved beyond debate. In countries like ours, where on a daily basis broad segments of the population face poverty and lack of opportunity for improving their lives, we can discern formulas that have taken root in the social imagination of our region as ways for resolving these problems. One of these solutions is to seize upon education as an engine of social mobility, providing the only possibility for the bulk of the population to improve its living standards. "Education in the so-called postindustrial society – which is so complex and ambivalent – seems to be the preferred means for achieving tomorrow what we lack today: a productive dynamism with social equity and a democracy based on citizenship without exclusions. Inherent in this expectation is the risk of future disappointment since such objectives can only be achieved through a broad, systemic effort in which the education system can play an important role but can in no case offer the 'keys of the kingdom'" (Hopenhayn and Ottone 2000: 34).

To this we may add the conviction that one of the historical and structural conditioning factors that have perpetuated the backwardness of our region is the low level of technological development of its productive apparatus, which instead of fostering innovation and creating added value is in fact merely a secondary receptor that simply serves to maintain this underdeveloped economic status.[3]

Thus, we are faced with two utopias, the educational and the technological, both of which hold out the promise of overcoming poverty, if only we will make a sufficient and determined wager on them. The first utopia nourishes the belief that if people at the bottom of the socioeconomic ladder are given a better education they will have greater social mobility and access to more tools for coping within a society in constant change. The technological utopia, for its part, sees underdevelopment as something that can be overcome through greater use of technology, both in production and in information.[4]

We face a problem when these "wagers" or decisions, which have a social and historical character (and are reflected in public policies), are given the seal of absolute and unquestionable truth. At the very least, we need to adopt a more critical stance towards them. Our research, which examined some of the contradictions and mistaken assumptions involved in introducing information and communication technologies (ICTs)[5] in schools, is intended as a contribution in this direction.

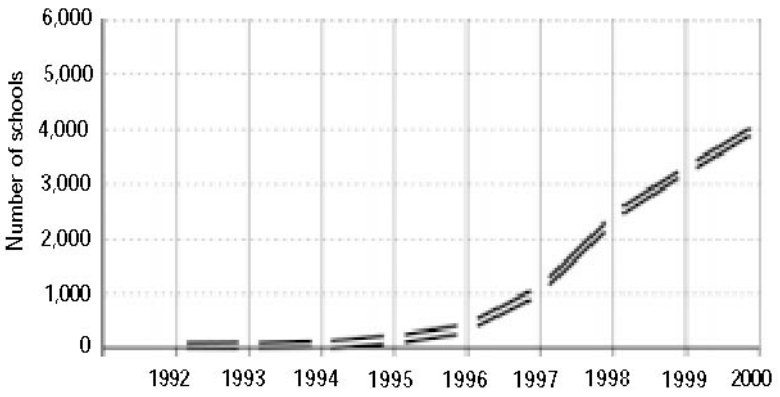
## The Red Enlaces project: objectives and basis assumptions

As a first step in explaining the concepts underlying the Red Enlaces, we shall provide a brief chronological review of the steps that have been involved in this process. The beginnings of the initiative can be traced back to 1992, when the Chilean Ministry of Education declared the need to build "a National Educational Network linking all government-supported public and high schools in the country". This first stage included a pilot plan involving a dozen schools in the capital city, Santiago, which was later extended to the Ninth Region (the political and administrative division with the largest proportion of indigenous peoples), where a total of 100 schools were enlisted in this initial development stage. The testing phase ran until 1995, when a real growth plan of national scope began to take shape. By that year it was considered feasible to make ICT resources (equipment, software and Internet connections) available in all Chilean schools within the next five years. Consistent with this plan, an exponential increase in coverage can be seen from 1996 on as the programme became truly national in scope. By 1998, computers were already considered an integral part of the secondary school curriculum, with the status of a "horizontal objective", i.e. it was recognized that the implications of working with ICTs extended to all aspects of the training imparted to students. The following graph charts the progress made with the Red Enlaces:[6]

According to Education Ministry officials, these figures speak of outstanding success in transforming the education system through this initiative for mass access to ICTs.

Given these results, it can be argued that the effort to equip Chilean schools with computers, software, Internet access and peripherals has been broadly successful.[7] Although there is still a noticeable imbalance in the availability

**Growth of wired schools**




Source: Ministry of Education of Chile, 2000

of these new technologies between schools located in major urban centres and those in more remote rural areas, it is equally clear that rural schools are gradually being incorporated into the plan and that these discrepancies should be overcome in the medium term. Generally speaking, we can say that in one way or another ICTs are becoming a normal part of the school landscape. This is confirmed in the wide media coverage that has been given to the entire issue of introducing ICTs into society and in the consequent expectations of teachers and students alike.

Clearly, this modernization of education is based on a concept that relates technical work, such as establishing a computer network, to the goals, needs and challenges currently facing education. Such a large-scale investment would be inoperable without an ideology that defines exactly what are the basic parameters guiding the entire Red Enlaces project as a government programme.[8]

These guidelines address some of the main questions that have emerged with the introduction of technology into education: for example, deciding the pedagogical orientation to be given to ICTs once they are in place in the classroom, what kinds of new knowledge and skills students can obtain through ICTs, how school management can be improved through the use of computers, and the idea that the teacher can use resources available over the Internet as a supplement to classroom instruction. Moreover, one of the conceptual underpinnings of the Red Enlaces project "considers information and communication technologies (ICTs) as a tool in the service of individuals, the main players in the process of teaching and learning: students, teachers,

principals, supporters and officials of educational establishments. . . . The goal is not only to equip the K-12 schools with computers, but to integrate them into an educational network through which they can communicate with each other and with the world, exchange ideas and experiences, regardless of the region or town in which they are located. This is consistent with one of the key objectives of the education reform: to achieve greater equality of opportunity for children and youths to gain a better education" (Ministry of Education of Chile 2000a: 11).

From the above description, we can detect an assumption that, while not explicit, sets the direction that this process of technological change is intended to take: we are referring to the tremendous degree of confidence that information technologies have for a self-activating potential for change.

This presumed quality of ICTs, when transferred to the education sphere, should enhance its quality and make it equitable as soon as all students have the same "window of access" to the world that the Internet offers, and it should turn students into "world citizens" with the capacity to understand and participate in the process of globalization. As the planning unit for the Red Enlaces project sees it, ICTs are not only a tremendously important teaching tool but are also related to the lifestyle that the boys and girls now learning this technology will experience. "This educational revolution has to do with lifelong learning, distance education and ICT-based education. Countries that fail to make this change will be widening the knowledge and technology gap that separates them from the more dynamic parts of the globalized world and will find themselves cut off from the knowledge-based economy and the information society (Brunner 2000: 214). According to these arguments, the introduction of information technologies in the education system is an answer to the urgent need for Chile's education system to adapt to the requirements of globalization.[9]

Consequently, this research was driven by questions such as these: Is this technology really being incorporated as a new teaching tool in schools? What cultural impact does the introduction of this new, globalizing technology have on the rural environment? What happens to the teacher–student relationship in a rural school when information technologies and their related teaching innovations are introduced? How do students react to this new educational resource?

These questions apply to both the theoretical and the practical aspects of the assumptions underlying the Red Enlaces. We believe there is a need to look beyond the claims, based on figures showing coverage and number of teachers with ICT training, that significant progress is being made in improving the quality of education and that ICTs are tools that really make it possible to overcome poverty. In fact, if ICTs are to have a true impact in reducing the equity gap, they must be given a more cultural dimension as well, and we must understand thoroughly the real social and practical uses that are made of ICTs in schools.

## The context: the commune of Maule and its socioeconomic characteristics

Our research was conducted among low-income groups in rural areas, where we attempted to identify social practices linked to the use of ICTs. We selected the commune of Maule for this purpose because it met the requirement of having elementary schools integrated into the Red Enlaces project. In our ethnographic work, we were therefore able to approximate the daily use made of ICTs in two local schools.

To understand the context of this research, it is useful to review some aspects of the commune of Maule. It is located in the Seventh Region of Maule, along the south bank of the river of the same name, some 288 kilometres to the south of Santiago. The regional capital, the city of Talca, is about 20 kilometres to the north and only 15 minutes by highway from the main village of the commune. The commune has 13,769 inhabitants, of whom 11,007 are in rural settlements; the one "urban" settlement accounts for the remaining 2,762 people. Because it is so close, Talca, as the economic, population and political centre, exerts great influence on the development of the commune of Maule. It is fairly safe to say that the future of Maule, as an administrative entity and a human settlement, is closely linked to movements to and from Talca.

The municipal government has its headquarters in Maule, which functions as the political centre of the commune. This locality has the greatest number of public services (a polyclinic, the largest communal school, the civil registry, the post office, the fire department and a police station) as well as the beginnings of a commercial centre. Human settlement in the commune can be described as dispersed among small centres. This means that, within the broader territory representing the Municipality of Maule, there is a long list of small localities with intermittent public services (health posts, schools and sometimes police) and a great number of shantytowns or ***ranchos*** scattered haphazardly along the roads that run through the commune. Among these poor villages we may mention Duao, Colín, Linares de Perales, Callejones and Numpay as examples. The interesting point here is that the area covered by the communal administration is very large considering its relatively small population, which is scattered among several very small centres. These features make it difficult to provide adequate coverage of public services, particularly in the winter when heavy rains can severely disrupt intra-communal travel.

As noted earlier, the local economy is heavily dependent on activity in Talca. Most of the commune's farming output (which represents the primary source of income and work) is sent to markets in the regional capital. This means that the constant fluctuations in Talca's demand for agricultural products translate structurally into higher or lower incomes for people in Maule and its surrounding areas. Moreover, as an urban centre, Talca represents a much bigger commercial and labour market than does Maule,

which means that the local economy remains very weak if we evaluate it in terms of its potential for generating incomes and benefits for its inhabitants.

Maule, then, is marked by high levels of poverty: 42.4 percent, with an indigence rate of 13.6 percent.[10] It is sufficient to say that, according to figures in the latest UNDP ***Human development report***, the Maule region has the worst performance. Moreover, in the 1998 human development index ranking (UNDP 2000: 25), communes of this region fall in the lowest quintile.

The extreme poverty in which most of the people of Maule live can be laid to a number of factors: the high adult illiteracy rate, at 13.7 percent (although this trend is being reversed among children, thanks to expanded educational coverage); poor health conditions reflecting inadequate sewage facilities; the low value placed on manual labour, which keeps family incomes low; and the high degree of local dependence on social assistance from the municipality. Such a situation can exist only when the local population has very low incomes and, far from being able to pay municipal contributions, requires whatever direct assistance the local authorities can deliver.

Despite the foregoing, living conditions are nowhere near as bad as those frequently encountered in the marginal zones of major cities such as Santiago. In this respect, the rural poor have in their hands a number of mechanisms that, to some extent, mitigate the disadvantages of living below the poverty line. One of these, and the most obvious one, is the immediate availability of food on the farm. Despite the concentration of land ownership and the use of practices such as sharecropping, farm work still provides a stable source of family income and prevents poverty in these localities from being even worse. In addition, proximity relationships and cooperative networks are much stronger in small rural communities (in contrast to the cities, where they are extremely limited) and these qualities of sociability in the rural world offer an additional channel for obtaining resources. Local people are able to stabilize their living standards by resorting to small favours and exchanging work for food, among other strategies.

## The daily school routine. An ethnographic approximation

"Any ideas you want to express?" We want more computer time! The teacher keeps promising. We want to work more with computers. These were some of the most frequently heard comments from the children we spoke with. Their eagerness to get into this room, so distinct from the other schoolrooms, is evident in the pushing and pulling in the waiting line and the speed with which the children cover their feet with plastic bags so as not to dirty the computer room (this is a requirement for entering the room). Several times we watched this ritual, which takes place before the computer class begins. At some point it becomes impossible to hold back the crowd of boys and girls clustered around the narrow door, which reads "Computer Room", with the "Schedule" posted below. The teacher in charge of the group tries to

maintain some semblance of order among the students. Finally he gives the word that they can now enter the room, with the warning that they must do so "calmly". The students immediately scatter to the equipment: this previously quiet room, especially outfitted to house the Red Enlaces project, is suddenly converted into one with a swarm of children moving chairs about to form groups with their friends, some complaining of the selfishness of a student who refuses to share "his" computer, fiddling with the keyboards to start up the computers; while others, with a sense of frustration, are left to sit at the tables arranged in the middle of the room. Thus begins yet another computer class in one of the schools of the commune of Maule, part of the Red Enlaces sponsored by the Ministry of Education of Chile.

The social space that provided the setting for the issues on which our research focused is the classroom that functions as the "computer laboratory" in the rural schools in question. In addition to passing on knowledge and serving as a socializing institution (activities that are common to urban and rural schools alike), rural schools perform certain "complementary functions" that are not present to the same extent in the cities. We know that, as an institution, the rural school is expected not only to impart formal knowledge but also to transmit values associated with national identity. The rural school, then, can be understood as an extension of the national state, and the teacher has a greater degree of social authority in his relationship with the community in which he is serving. Representation of the state as a political entity is clear in the teaching of national history, in the celebration of national anniversaries (for the most part commemorating military events) and in national holidays, for example. Thus, compulsory school attendance (which was recently extended to full days) is superimposed on the community's own dynamics, where children's work in the fields illustrates the extent to which the school fulfils its function. Now, since the introduction of ICTs in the classroom, we may ask ourselves: how are the schools adapting to this new scenario marked by technological change?

With these concepts, we focused our ethnographic research primarily on observing the various dynamics that manifest themselves within the room housing the Red Enlaces project. This is not to say that we treated this room in analytical terms as an "airtight compartment" without any relationship to the surrounding administrative, social and cultural contexts. But, in our view, this was the best locus for defining and investigating the uses, expectations, practices and representations associated with the introduction of ICT.

In this connection, it is very useful to look briefly at how ICTs have been integrated into the practice of teaching. The facts described below are intended to establish a continuum, the purpose of which is to provide a frame of reference as the basis for the discussion at the end of this article. This is very important for the critique that we intend to level against most of the commonplace arguments in favour of initiatives for introducing ICTs into society: our research is based primarily on direct observations. Through our

ethnographic work, we have tried to identify firsthand the social representations concerning ICTs that make themselves felt in the classroom, thereby inverting the traditional order of things, which in Latin America always ends by imposing public policies "from above". In our view, this tendency has pushed the assumptions surrounding the introduction of ICTs to their limits, to the point of adapting reality to the requirements of those policies.

## The school routine and the use of ICTs

We may begin our story by looking at the preparations that are made before the actual instruction session begins. Generally speaking, initial instructions are given in a normal classroom. There is a practical reason for this: the class has to be divided into two working groups before the session begins. Since the number of computers available is inadequate, the only way to keep the number of students working at each computer to a reasonable number is to resort to this approach. What this means is that the time allocated to use of the computer room is in reality cut in half. While the first group goes to work on the computers, the second group is confined to watching from the middle of the room or is kept in its regular classroom working on some activity that the teacher has assigned. Once the teacher has explained the tasks that the children are to perform, the first group goes to a room that has been specially equipped for the Red Enlaces project. There they are made to line up in front of the door. As described earlier, the children become very anxious as they await the chance to go in and start using the computers. Here, in front of the computer room door, we can observe the practice that produces the greatest perplexity, betraying an attitude that treats the equipment as something sacrosanct. We are referring to the custom of forcing the children to cover their shoes with plastic bags before they enter the computer room: in fact, the session will not begin until all the boys and girls have followed this order. What is the sense of all this? From the teacher's perspective, this room has to be kept especially clean, and the students must be prevented from tracking mud onto the carpet installed in the room.

As we see it, this scene is not just a simple anecdote but reflects much of the apprehension that most of the teachers feel when they are faced with having to master the tools of information technology. It is natural enough to expect that children will track mud into the room, especially in a rural setting, but the interesting thing is to see how this simple order by the teacher reflects the special status accorded to the computer room. We must not forget that the computer room is a special place where normal standards do not apply, starting with the broad U-shape arrangement of furniture, which already suggests an attempt to modernize the traditional classroom layout. Traditional classroom control is ignored (at least for the moment) and disciplinary standards are relaxed (the children talk loudly, move all over the room, show

off their achievements to their fellow students, trade their latest findings, play jokes on each other, and so on) – one might almost think it was recess time. Moreover, we must remember that in most cases the other half of the class is kept waiting, either in the laboratory or in the classroom, for its turn to use the computers. Under these circumstances the teacher's ability to enforce normal classroom discipline is seriously undermined. The children are very aware of this, and they take maximum advantage of the opportunity to "push the limits" beyond the rigid rules that govern behaviour in a normal classroom.

Returning to our description of a typical class, when the teacher gives the go-ahead there is a stampede of boys and girls racing to grab the best spot in front of the computer screen. And when we say "the best spot", we must recognize that the limited number of computers means that these spots are limited, despite the division of the class in two. When the class begins, then, we may see three or four students sharing the mouse, the keyboard and the screen. At this point, the teacher has already given the final general instructions linking the subject of study (science, mathematics, history) with the use of ICT. We must remember that the official curriculum treats ICT as a tool that must be inserted into each of the subjects that the children are studying. This leads us to wonder what level of utilization, knowledge and integration of ICTs is possible under the working conditions that we have described.

Our class continues with the use of the available educational software. Of the programs used as teaching resources, the most popular one with teachers (and, to a lesser extent, with the students) is certainly La Plaza.[11] As the teachers see it, the environment that La Plaza delivers makes it possible to switch from one subject to another without great difficulty. In other words, it can be used for a mathematics class or for a science class. It works in this way because the program itself is designed to combine the main content to be covered for each course in a "common space", and it also allows for communication by e-mail through special applications. We may say, then, that La Plaza is the starting point for much of the routine coursework observed. This does not mean, however, that work in the computer room is limited solely to using this software since there is quite a wide variety of programs available.

The key role assigned to La Plaza reflects the fact that it delivers a wide variety of content within a single set, where much of the content is already processed and virtually ready for application in the classroom. This feature is greatly appreciated by the teachers since not much of the available computer time needs to be spent on detailed programming. The instruction "Go to La Plaza" is repeated constantly in most of the courses we observed, and it is clear that the work that the children do with this program is not very differentiated. In fact, there is a curious uniformity in the way they work with this program, and most of the children spend their time moving from one section of the program (museum, library, hospital) to another without any clear order or direction. At this point, it would seem that the principal

criterion for using La Plaza, and in the end ICTs, relates primarily to the children's own preferences. We frequently found children visiting the various features that La Plaza offers with no apparent motivation other than to amuse themselves with the pictures and sounds offered by the multimedia format of the program. This is another finding that needs to be examined further – the disconnected, random and essentially recreational use the children make of computers – in light of the requirements of each specific subject.

In fact, La Plaza (as a homogeneous set of applications) offers a wide variety of content that can be used for any subject matter in basic education. All of this is contained in a very attractive multimedia architecture that readily captures children's attention, to the point where it becomes their favourite and most-used program (a point that takes on greater weight when we realize that the children are completely free to select the application with which they are going to work during the class). With all these features in its favour, why aren't all the possibilities that it actually offers exploited? There are several reasons that may help us understand this shortcoming in the use of this educational software. In the first place, we found on repeated occasions that the teachers were rather lax in their supervision of students' work with ICTs. This was reflected in the lack of clear and precise directions for classroom work. Far from assimilating the content that this software offers, the children quickly began to surf the different sections available in La Plaza, mainly for their own amusement. The video images, sounds, puzzles and drawing boards fill up the time that each student has for working with the computer (remembering that there are three or four children for each computer and that the other half of the class must patiently await its turn – this is another weakness that we shall discuss further later). The problem lies in the way the students use La Plaza[12] – the program is essentially a series of sounds and images that grab the children's attention but do little to transfer knowledge.

A good example is the "anatomy centre", a window in La Plaza that offers very good graphics representing the different systems of the human body. At first glance, no one could dispute the quality of this material, the versatility and variety of which should be a great help in teaching natural sciences. The contradictions become evident, however, when we note that the available multimedia resources do not represent a school assignment in the conventional sense. The images and the memory puzzles, the purpose of which is to explain through play the organs and functions of each of the systems of the body, end up being used simply for entertainment, and the students are incapable of going beyond the immediate excitement of the game to see that there is some knowledge that the "anatomy centre" is trying to pass on to them through play. That, of course, is positive in itself, but this admission is far from saying that learning and the transfer of knowledge should be not merely relegated to the background but completely banished. Our assertions may seem fairly radical, but they are based on our classroom observations, where

we frequently found that memory games, which are supposed to provide graphic support to the teaching of natural sciences, are reduced in their scope to the status of simple games, which in the end are stripped of their educational content. This criticism is intended to strengthen the use of ICTs in ways that will reinforce learning. The words of Nicholas Negroponte (1995) are highly illustrative of this point: "An important part of learning, no doubt, is achieved through structured teaching – but it must be sound teaching imparted by good teachers. An even greater portion is achieved through exploration, 'reinventing the wheel' and discovering things for oneself. . . . Since now virtually anything can be simulated by computers, there is no need to dissect a frog in order to learn its anatomy. Instead, we can ask the children to draw a frog, to construct an animal that behaves like a frog, to change that behaviour, to simulate the muscles, to play with the frog."

Beyond the doubtful plausibility of such an assertion in rural schools in a country like Chile, it is still interesting to see how such intensive use of ICTs in education can undermine the status of the teacher as an authority in knowledge intermediation. In rural areas, a teacher's performance is frequently judged not so much by the formal knowledge that he can transmit and teach, but rather by his ability to control and win the respect of a group of students under his responsibility. To help appreciate this statement, we need to take account of the fact that the dominant social representations in a rural setting like Maule tend to stress the concepts of paternalism and authority, the demonstration of which requires practices consistent with these ideas. In other words, we could say that there is an "authoritarian personality" that, as a cognitive system, stamps the construction of the social system and therefore establishes the basic coordinates that govern the relationship between teachers and students (from the community viewpoint, of course). These concepts are deeply rooted in daily thought and action, and no social researcher can afford to overlook them if his purpose is to formulate public policies consistent with the social spaces in which they are to be applied. Under these conditions, to speak as Negroponte does, "constructing a frog instead of dissecting one" will not happen automatically but only after a lengthy process of acceptance.

In light of the above, one of the great obstacles that is slowing the introduction of ICTs in the schools lies in the plethora of rules and regulations that many teachers impose on their classes when the time comes to visit the computer room. Carried to an extreme, these regulations transform ICTs into a disciplinary tool. In this respect, we may note, for example, that in some cases children are punished for bad behaviour by forbidding them access to the computer room, which means that the computer is basically perceived as something for children to play with for their amusement, rather than as a learning tool. This is a good example of the way teachers view the role that the computer assigns them in the educational process. On this point, we may cite a passing comment made to us by one teacher, which helped us to appreciate directly the relationship that is established between the teacher

and the student through the presence of computers in the classroom. We were discussing children's complaints about how strict some teachers tended to be when it came to the computer class. The children complained about the excessive rules and the steps that had to be followed in booting up the equipment and settling themselves in front of the screen. This was the message that we were trying to convey to the principal, in terms of a very real complaint by students who wanted more freedom of action in using the computer. Interestingly enough, the principal immediately and spontaneously admitted to us that some of his colleagues were excessively strict when it came to the computer class. The principal's comment was this: "I already know whom you're talking about. What happens is this teacher gets very uptight. She insists that the cover has to be folded in just a certain way. I tell the kids not to worry about it and to pull off the cover any old way. I do it myself lots of times. I'm not going to worry about silly things like that in using the computer."

One very important element in this comment is that there are at least two ways of approaching and conducting classes in the Red Enlaces room. On one hand, the use of ICTs is taught and transmitted from a strictly formal viewpoint related to basic operations (booting up, using the mouse, opening the program, closing it, shutting down and covering the computer) without much possibility for experiment and learning through the conventional (and very useful) "trial and error". The other approach, the success of which remains to be seen, would be to allow children more flexibility and more room for experimenting in using the computer – assigning tasks and giving a few general instructions on the topic for the class so that the children themselves can decide how to find the actual information required by the teacher.

During the course of this fieldwork, we observed sharp differences in the structure (and the attitude) of the class, depending on the teacher. As we became more familiar with the internal dynamics of each school, these differences stood out more clearly. In fact, each teacher's approach is different, depending on his accumulated knowledge of ICT use, his skill in transmitting it to his students, his willingness to incorporate ICTs as a classroom resource, the type of relationship that he has with the class, his ability to organize a group of children in an atmosphere that differs from the traditional classroom layout, etc.

These factors taken together reveal enormous differences in the structure of each class conducted in the Red Enlaces room, ranging from extremely rigid teachers who will not allow any use to be made of the computer if it deviates from the instructions initially given, to the opposite case where, as it seemed to us, the teacher took no interest at all in what was going on between the students and the computers. In the face of these findings, it might be argued that these differences are nothing surprising and that they are to be expected when we consider that each teacher has a different way of running a class, based on such factors as personality, professional background, formal training, etc. Yet we were struck by the clear discontinuities in something

that was defined as a "horizontal objective" of education, where the teaching and transmission of skills and knowledge in working with ICTs were supposed to be subject to minimum standards and should not deviate significantly.

## Discussion of the results

With this brief description of the introduction of ICTs in the schools, we may now turn to some considerations that emerged from our field observations. To illustrate the elements discussed in this section, we thought it useful to focus the discussion on a system of opposite pairs, to take into account the various practices, valuations, representations and expectations that surround the introduction of ICTs in these rural schools. By establishing these opposing themes of analysis, we can give some order to the major considerations that arose from our research and thereby provide a basis for a critical discussion of the impact of ICTs.

### Theme 1. Familiarization vs. specialization: the computer as a technical device vs. a technological tool

Another viewpoint from which we may consider the data collected relates to the way in which computers are used in the schools. This duality (familiarization vs. specialization) seeks to explain how the schools can exhibit two approaches for dimensioning the relationship that teachers and children establish with the computer and also how the computer has been introduced in the schools – whether it is integrated into the daily dynamics of the school or, on the contrary, constitutes something entirely strange and foreign.

The first point to consider here refers to the opportunity that the children have to make use of the computers in their school. From the outset, we noted that access to the computers was restricted: they were located in a special room (the computer room) well away from the children, thereby producing an isolation that was both spatial and symbolic. The computer room in fact is separated from the other rooms and, very symbolically, it is located close to the principal's office,[13] quite apart from the places normally frequented by the children. It is not, then, a "children's room",[14] someplace where they go every day, but rather a "special" room, for which special behaviour is required (such as covering their shoes with plastic bags so as to keep the room clean). It is also the only room with carpeting and with all its windows intact, and the arrangement of the chairs and desks is different from that of the normal classroom: they are set up in a U-shape, instead of in rows facing the teacher. The computer, then, is located in a place with special features that set it apart as something different and remote from everyday life.[15]

The very idea of setting up a computer room implies restricting the computer's presence in the school milieu and controlling access to it. In fact, the computer room is not always open and the possibility of using it outside

regular school hours depends on the willingness of another person (the computer custodian, who is generally a teacher). This means that each student has only minimal access to computer use, a fact made even worse by the very little time that each student gets during computer class to work with the machine. Clearly, from this viewpoint, the computer represents a special element in the school milieu, and this makes it difficult for a child to identify with it.

For their part, the teachers also have to cope with the novelty of the computer's presence and its impact on teaching dynamics, and the way they do this has direct implications for how the computer will be accepted in the school. Broadly speaking, we can identify two approaches that relate directly to how the teachers accept the presence of computers in the school. On one hand, some teachers see the computer as a device that has to be handled very carefully, and so they restrict the use that children make of the computer for fear that they may break something. This is a fear based on a lack of confidence both in the computer (which is seen as something extremely delicate and fragile) and in the children, and it frustrates any attempt to establish a bond of familiarity between the student and the computer. This approach stands in contrast to another one that takes a less respectful view of the computer and is more comfortable in interacting with it, as reflected in the case described above, where the principal of one of the schools, in response to students' complaint about a teacher insisting that the cover be folded in a certain way, told the students to pull off the cover any old way. This case provides clear evidence of the contrast between the repressed (and repressing) approach to computer use and the approach that accepts the computer as just one more element of daily life.

As noted earlier, the way the teacher accepts the computer (and of ICTs in general) as a tool that will help him in his work will have an impact on the dynamics of the computer class.[16] On this point, we found, broadly speaking, two forms of class structuring. On one hand, some teachers apply a ***dirigiste*** approach where the atmosphere in the class is extremely strict, with the teacher dictating and controlling each step to be followed by the students (from when to boot up the computer and how to move the mouse to an almost pathological concern with how to fold the cover): the teacher's presence here is a permanent cloud over the children's use of the computer because his attention is focused on maintaining control rather than on guiding their work with the computer. In contrast to this approach, we find a more flexible one where the teacher does not try to control computer use (without suggesting that he is not concerned with proper care of the equipment) but leaves the students to work with the computers on their own, to the point where the teacher may seem to have little interest in what is happening in the class.

The problem is that both of these approaches to structuring the computer class fail to take real advantage of the computers in the school. On one hand, excessive control prevents the children from becoming really familiar with

the computer, and the teacher passes on to the children all the fear and mistrust that he feels about computers in the school. Yet, on the other hand, the totally hands-off approach, while it allows the children to familiarize themselves with the computer, does little to encourage educational use of the device or to involve the students in the learning process, suggesting that the teacher himself does not see it as a working tool that will help him in his teaching efforts (observing these teachers, we had the impression that they were simply putting in the required time). It is not enough to introduce the computer: what is needed is to allow children to become familiar with it as a tool, to make use of all its possibilities, to be able to think of new uses for it and, at the same time, new possibilities that they can open for themselves through the use of this technology.

Despite the foregoing, we were surprised at how the children grasped the computer and at the great interest they showed in using it every time they had the chance to enter the computer room: indeed, they preferred this to any other "conventional" school activity. Computer class became a highlight of the school week, allowing the children to take a break from the everyday routine and do something that, if not new, was certainly rare. This was clear in the pushing and shoving and the joking that went on while waiting outside the computer room, where the children had to cover their shoes with plastic bags before they could go in – a ritual that reinforced the almost sacred image that the computer has gained in the school, and yet the veritable stampede once the children were inside the room meant that for them the computer was far from sacrosanct. Once they were inside, we saw that the children suffered no complexes in the presence of the computer but, on the contrary, were attracted and excited by it. The computer room and computer work is for them a recreational activity that allows them to work as a group and play with the computer. Here we have the key to children's interaction with the computer: it is very much a plaything, and this speaks for their capacity to appropriate the computer as something relevant to their interests, as a thing that they can control in order to achieve something that interests them, providing clear evidence that, in contrast to their teachers, they have no fear of computers and they recognize clearly that computers provide them a great service.

It is interesting that the teachers seem to be quite aware (perhaps intuitively) that the children enjoy playing games with the computers, and in fact they promote the view of the computer as a plaything rather than a serious educational tool. Evidence of this is the widespread practice of punishing student misbehaviour by barring offenders from the computer room.[17] As well, students are warned not to visit multimedia sites or the Ministry of Education will descend upon them. "I went there once, but the teacher said we shouldn't because the ministry would come and want to know what we were learning," said one student. This shows clearly how these teachers see the role of the computer in children's education.

It is precisely this amusement aspect, this playing with the computer on the part of the children and the ambiguous reaction of their teachers, that illustrates one of the main contradictions surrounding the introduction of ICTs in the schools and that poses the question of what is the basic objective of the initiative – seeking to familiarize children with computer technology is, after all, quite a different thing from trying to strengthen conventional teaching through the use of computers, which means highlighting the computer as a teaching support, as a kind of Technicolor blackboard. The two are contradictory. To familiarize students with ICTs, the important thing is that they should lose their fear of the computer; and this will only happen if children are allowed to experiment, to play with it and to share it. On the other hand, if we want to make practical use of the computer as an efficient transmitter of knowledge (as in the conventional classroom), then there must be some control in place. The attempt to combine these two objectives in a single process in these schools has produced ambiguity when it comes to integrating the computer, and this is why some teachers are so strict in controlling the child's every step with the computer, while others simply look the other way from what is going on.

This confusion over the real meaning of introducing ICTs into the schools leads in the end to a collision between two distinct approaches to the computer – on one hand, the children "instinctively" seek to familiarize themselves with the computer and appropriate it for their purpose (which is play), and on the other hand the teachers try to turn it into a tool for teaching their subject. This conflict is not easy on anyone – the children chafe in frustration at the control imposed, while the teachers are left feeling powerless.

## Theme 2. Achievers and non-achievers: schools and the perpetuation of the digital divide

The introduction of computers in school, together with all the technical, economic and political paraphernalia that accompany these projects (such as the Red Enlaces), has been done with one great objective in mind: to go as far as possible towards closing the infamous digital or technological divide that separates developing (or, frankly, underdeveloped) countries from the developed countries (or what we may now call the postindustrial countries). All of this is taking place within the context of globalization and the ever-greater technological demands that it imposes.

From the perspective of this digital divide, we may ask: With all their computers and Red Enlaces paraphernalia, how are the schools trying to close this divide? In other words, how are the schools going about making students "digitally literate" for this new world?

With respect to this question, we may look first at the work plan adopted for helping students learn and understand what the computer means. As described earlier, the computer room functions on the basis of group

dynamics, given the scarcity of computers (which means that one group is always waiting), but this group system seldom implies group work (being together is not always the same thing as working together). The creation of groups reflects an economic scarcity and not a deliberate methodological approach, which means that the group system is not pedagogically inspired; in fact, the groups are formed solely on the basis of friendships: it is the children themselves who decide their composition (with the teacher intervening only when this leads to disruptions). Beyond the methodological issue of what is the best way for a child to learn how to work with the computer, we may identify a very interesting feature of the working dynamics that arises from this group system. We noted that there was a kind of competition among the children as to who would control the keyboard and the mouse – one or two children always seemed to monopolize them. These, then, are the children who will actually take advantage of the computer's interactivity, while the others are merely observers. Since there is no group-work methodology,[18] the teacher does not interfere with this "competition" (intervening only when the group makes too much noise) and so does nothing to ensure that all students have access to the computer controls.

A second finding, which flows from our observation of work with the computers, is that it is the child's own wishes that take precedence in many cases, since most of the time the teachers limit themselves to giving the order, "go to La Plaza", but are unable to make effective use of the program. This means that most of the children simply spend their time hopping from one section to another (museum, library, hospital and so on) without any order or direction, retracing their steps many times. It would seem, then, that it is the children's own preferences that determine the use they make of La Plaza and of ICTs in general: this is not always a bad thing, yet in light of the foregoing it is clear that the children who really make the decisions are those who have control over the computer.

From this, we may conclude that the children who really grasp the computer are those who win in the competition (either because their interest is stronger than that of their fellow students or because they have power or influence over the others). From what we observed, then, we may say that the group-work system that operates in these schools ends up favouring those who are the "achievers", to the detriment of their fellow students. It is these achievers who have the greatest chance to familiarize themselves with the computer and to learn how to handle it, compared with those who are merely onlookers. This is not to stigmatize one group of students as oppressive or abusive with respect to another, helpless group, but simply to recognize that the use of the computer in these schools is complicated by the individual characteristics of each student (as in many other activities) and that for some students it is more "natural" to work with the computer, either because they are more interested and feel more comfortable with it, or simply because they find it more entertaining.[19] This strikes us as a factor that should be

taken into account in examining the problem of introducing ICTs into the schools, since it raises the question of whether we are not reproducing the digital divide that we are seeking to close, but on another scale.

An interesting example that highlights the case of "achievers" is that some former students from the schools (now enrolled in the high schools of Talca) continue to return there in the evening to do their homework on the computers. They have acquired computer knowledge and skills superior to the teachers, and it is in fact they who have "appropriated" the computer to the point where it is for them an effective work tool and one that can open new horizons for them. They have achieved this ability through their own efforts, because they like computers and they find them useful. From this, we may conclude that the real development of this knowledge takes place outside the classroom and relies, above all, on the possibility of permanent access to a computer, which is indeed the way to transform the computer into an educational tool.

This is where another, extracurricular factor comes into play, one that has to do precisely with this possibility of achieving greater access to the school's computers so as to become thoroughly familiar with the technology. Since very little time[20] is available for computer use within the school curriculum, the decisive factor is the extracurricular environment, beyond the institutionalized sphere. At this point, personal relationships come to play a central role, since the decision to grant special access to the computers lies with the teacher responsible for the computer room or with the school principal. Thus, when we asked whether some students knew more than others, a girl in the eighth grade at the Colín school said: "We have a better chance to get into the computer room if we clean up the office – the teacher said if we would clean the office we can use the computers." This suggests that the real possibility of closing the digital divide has to do not only with technical issues and resources but with an entire social dimension, which is the empathy that a student may have with one or other of the authorities, who will then give him special privileges.

On the basis of the above considerations, we may conclude that, in practice, the attempt to close the digital divide, which is the goal of the Red Enlaces project, depends on a great many unanticipated extracurricular factors[21] that imply the risk of reproducing that divide at a smaller but no less worrying scale. This means that the issue of technology in the school cannot be addressed from a purely reductionist perspective that holds that simply introducing computers in the school will provide the desired results, as if by magic, without recognizing that technology, like any human activity, carries with it complexities that cannot be overlooked.

As we have noted throughout this section, there is here a clear relationship with what we said about the duality of "familiarization vs. specification", in the sense that only those who are able to establish a relationship of familiarity with the computer will be able to appropriate it and make use of its potential, not only as a work tool but, above all, as an instrument for development that

will open new possibilities. On the other hand, those who succumb to the institutional rationale of the school will lag behind the others. We are faced, then, with a complex paradox whereby the school rationale can reproduce the digital divide and only those who break with this institutional rationale, or who manage to work in parallel to and outside the curriculum, will be able to close the technological divide.

## Theme 3. Expectations and daily reality

One of the most interesting issues that arose during our research relates to the underlying tension that we found between the expectations that children have for the use of ICT, both as an information and communication medium and as a tool for their future work and standard of living, and on the other hand the everyday reality they experience within their locality and their family.

Children's expectations began with the imminent act of using the computer, and they showed great excitement in simply going into the computer room, which made them feel in some way that they were making contact with a new reality. Perhaps for this reason, the children were very enthusiastic about being able to use this technology in the school, and that in turn generated much competition within the computer room.

Their positive attitude survived despite the obvious discontinuities between working sessions with the computers and the fact that their visits to the computer room were random or irregular.

Another issue related to children's expectations of ICTs is the fact that the children had lived nearly all their life in rural localities and that virtually none of them were familiar with any city other than the capital of the region, Talca. For most of them, Santiago was a place they knew of only through the media, such as radio and television. There is clearly, then, a degree of isolation, either because their experience is limited to their own community or because rural areas are to some extent considered marginal in comparison to the cities. This produces an obvious interest in learning about other places and in being "open to the world".

> "The Internet gives us greater possibilities" (girl, grade 7).
> "We can talk with other people" (boy, grade 7).
> "We got to know someone over the Internet and we even sent her a photo, she was Chilean but she lived in the United States" (girl, grade 7, Callejones school).

Here we can see clearly that there is a great congruence between what the children want and one of the most repeated postulates of the Red Enlaces programme: bringing the world closer to students in remote places. This link between the global and the local no doubt deserves to be kept in mind when looking at the more complex expectations that youngsters build for themselves on the basis of this utopia, which relates to the relevance, or not, of learning

to work with ICTs with a view, above, all to their future employment.

"Although we are now in grade 8 we have to learn more, but I like it better here" (girl, grade 8).
"We also have to take full advantage" (girl, grade 8).
"Why?"
"Because my sister graduated from intermediate school and she never took computers, maybe once a year" (girl, grade 8).
"The girls are really eager to learn computers because some of us in the class are hoping to go to secretarial school" (girl, grade 8, Colín school).

Girls have a clearer idea of the relationship between computers and work, since they discover in one way or another that computer skills are needed in the vocations in which they expect to work – whether as secretaries, teachers or policewomen (as some girls suggested to us) – all of which call for handling files and networking with data. They think of these occupations in entirely practical terms, recognizing that their parents cannot afford to send them to university, or that it will take many years to get there.

"As for the boys, they will need to use computers because they will be studying mechanics or furniture-making" (girl, grade 8).
"I would like to be a mechanic, and computers will help me" (boy, grade 8).
"I would like to study automotive mechanics, and I think computers will be helpful" (boy, grade 8).
"And I want to be a mechanic too. You can use the computer to make parts" (boy, grade 8).
"I will work with my parents in their tomato business, and afterwards maybe do something for the family" (boy, grade 8, Colín school).

The perceptions of these children provide a good illustration of the linkages between learning to use computers and their future work, but we can also see how thoroughly rooted they are in their daily reality, as with the boy who says that he will help his parents with the tomato farm and then see what happens. There seem to be two outlooks that coexist with each other: excitement over the possibilities that these technologies offer and, at the same time, a frank admission that farm work does not require computer skills, at least for the time being.

"I would say no, farming is one thing and computers are something else" (boy, grade 8).
"There are some manual machines that you can attach a computer to" (boy, grade 8, Colín school).
"My dad is taking computer classes – he works in a nursery where they have a computerized trickle irrigation system" (boy, grade 8, Callejones school).

This boy's case is exceptional for two reasons: First, nobody's father knows computing, much less works with a computer. Secondly, the only ICTs available locally are those in schools. Against this background, we may ask what use it is for the children to learn ICTs. We believe that one of the best ways to learn is through practice, not only at school but also at home. We must consider that this is only a first step in bringing these children together with ICTs (through the school), and it is clearly better to have a few computers in the school than none at all. Yet we need to contextualize the level of use and meaning that the children assign to the possibility of using ICTs, in terms of this complex relationship between desire and reality.

## Theme 4. Horizontal use vs. exceptional use: integrating computers into the entire curricular fabric or continuing to treat computers as a separate subject

As indicated earlier, there is a certain contradiction between the Ministry of Education's objective of turning computer technology into a tool that can be used horizontally in the teaching of all subjects and the fact that not all teachers are trained, even at the basic level, to meet the challenge of teaching children these new technologies. While teachers may face problems such as lack of time at school and may not be able to afford a computer at home, there is also a certain fear of technology, which we shall examine in the next section.

In our research, we found that teachers approach this technology in a variety of ways. As we deepened our understanding of the internal dynamics of each school, we came to recognize the differences in this area. As noted earlier, each teacher's work will differ depending on his familiarity with the use of ICTs, his ability to transmit this knowledge to his students, his willingness to integrate ICTs as a real classroom resource, the kind of relationship he has with the class, his ability to organize children into groups in an atmosphere different from the conventional classroom layout, etc. All these factors taken together produce tremendous differences in the structure of each class in the Red Enlaces room. Some teachers are extremely strict, forbidding any use of the computer that strays from the initial instructions given, while at the other extreme there are teachers who give the impression that they have no interest in what goes on between the children and the computers.

In light of this, there is a great deal of irregularity and discontinuity in the integration of ICTs as a further element in the various subjects. Obviously, there are some classes and subjects where no use is made of the computer and its development potential is virtually ignored. Thus, our attention is drawn to the glaring discontinuities of an aspect defined as a "horizontal objective" of education, in which the teaching and transmission of basic skills and abilities in working with ICTs should be subject to minimum standards and should not fluctuate so obviously.

Similarly, one of the most widely used programs, if not the most widely used, is La Plaza, described earlier, which offers a good variety of content within a homogeneous set of activities that can be applied to any subject in basic education. It also has an extremely attractive multimedia architecture that readily captures the attention of the children, to the point where it has become their favourite program (a fact that becomes even more important when the children are free to choose the application that they will be working with in the class).

Another fact illustrating that the much-vaunted horizontality is only modestly effective is that all the computers in the schools are to be found in one room. This already gives computer use the aura of a special event and makes going to the computer room something out of the ordinary, almost like a sacred rite, for students and teachers alike.

These observations make us wonder if computers and ICTs are not being treated as just another subject, rather than being integrated as a work tool in all courses. In our view, this would seem to be the case. One of the main reasons for this is the fact that teachers have little training in these technologies and even less practical familiarity with them, quite apart from the obvious resistance that some of them may feel.

Another interesting point is the extent to which going to the computer room has become a question of rewards and punishment. As noted earlier, many children told us that teachers often punished them for poor performance or disorderly behaviour by refusing to take them to the computer room.

> "We don't come because the teacher keeps promising and nothing happens" (boy, grade 4).
> "The other day we had a test and the student who came first got to go to the computer room" (boy, grade 4, Callejones school).

These comments provide ample evidence that teachers must have unwritten agreements about rewarding students' good behaviour by letting them work with the computers. The right to enter the computer room is still seen as a special privilege and not as a necessary and compulsory routine.

## Theme 5. Technology as a tool vs. technology as a luxury: perceptions that facilitate or restrict the use of ICTs

Teachers seem to be virtually unanimous in seeing the computer (and its software) as a valuable asset. This in itself is nothing unusual, but most of them show a tendency to be too protective of the equipment, often going to the ridiculous extremes of forcing the children to fold the computer cover in a certain way. Underlying this conceptual approach that the teachers take to ICTs is the feeling that computers are pieces of property that must be very carefully handled.

As we have noted, a teaching methodology based on linear instruction will only induce conservatism in the use of technology, reducing all its potential to a minimum, unless a teacher clearly shows a greater interest in experimentation. Thus, we see the teaching and transmission of ICT use from a very formal approach related to learning basic operations (booting up, using the mouse, opening and closing the program, etc.) without further possibilities of experimentation through the necessary (and very useful) "trial and error" approach.

> "Sometimes the teacher doesn't know what to do" (girl, grade 8).
> "Sometimes we use the computer as a typewriter for practice, but we already know how to type as fast as possible" (boy, grade 8).
> "I know that I can type fast, I like typing and I am good at it" (boy, grade 8, Colín school).

This view of the computer as something sacred denotes, as we have already said, a certain conservatism in the use of technologies, and so does using it as a word processor. The fear of damaging the machine shows up explicitly in the strict control over what the children are allowed to do in front of the monitor. We must be clear that this fear is due essentially to the fact that teachers view the computer more as a source of problems than as something that can help them in their work. This is because they know so little about using the computer, and even less about how to fix problems (when the system crashes or a program is wiped out), and they see training as something that is difficult and that eats into the few free hours they have. There is also the underlying notion that they are dealing with something entirely different from what they have experienced and learned (the generation gap plays a part here since most of the teachers are over 40 and computer skills were not offered when they took their training).

> "At the beginning we didn't even know how to boot it up or shut it down. I was really nervous" (boy, grade 6).
> "The teacher drew a computer on the blackboard and explained it to us. She said we must be very careful in handling it" (girl, grade 6).
> "We mustn't get them dirty, we mustn't fool around with them" (boy, grade 6).
> "We have to look for things that are useful to us" (boy, grade 6, Colín school).

Finally, we must consider that the teacher is faced, perhaps for the first time, with the dilemma of acquiring knowledge that is not only new to him but that often seems to be more readily learned by his students. This realization no doubt makes the teacher feel insecure and even hostile to ICTs, so he will not only exert maximum control over what the children do at the keyboard but will have little interest in experimenting with new methods for using the potential offered by ICTs in teaching his subject. In this way, the teacher

takes a defensive posture in the face of this new "agent" that has entered the school.

## Conclusion

After reviewing and considering the different themes that arose from our research, we have reached some tentative conclusions about the problems of introducing ICTs into the schools.

In Latin America today, one of the angles from which the poverty problem is viewed is the so-called digital divide, i.e. a technological backwardness that prevents successful integration into the globalization process. One of the tools for overcoming this disadvantage is therefore education. "Among other reasons reinforcing this image of education as the key, we may highlight the following. First, the growing economic importance of innovation and knowledge makes education not only a high-return investment but a field that will decide the future fate of individuals and of entire societies: they will either be part of the information revolution or be left behind; they will either have access to intelligent jobs or be relegated to low-tech and low-wage services; they will either be integrated into knowledge circulation networks or abandoned to the wilderness of cybernetic illiteracy. Secondly, education appears as the principal field for reducing inequalities in the future and as the best way to overcome the intergenerational reproduction of poverty. The arguments on this point have been around for decades and refer to the virtuous circle between better education, social and occupational mobility and higher incomes." (Hopenhayn and Ottone 2000: 37).

In this connection, we noted that the perception prevailing in Chile, and reproduced in the Red Enlaces project, sees the solution to overcoming this problem in strictly quantitative terms, whereby this technological backwardness is due to the country's low technological coverage as reflected, for example, in the inadequate number of computers per capita and the even lower rate of Internet connections.

As we see it, this view addresses the problem only in part, because it assumes that technological change requires nothing more than the introduction of machines, whereas it also requires cultural appropriation on the part of users, who must integrate and understand ICTs in the context of their daily lives and thereby come to appreciate these technologies in all their potential.

The only way to close the digital divide effectively, then, is to create a broad process of "technological literacy", a process that will help users to develop their own "technological culture" that will go beyond mere mechanical use. This, in our view, is one of the principal weaknesses in the implementation of the Red Enlaces project.

This aspect was clearly evident when we looked at the training given to teachers for the Red Enlaces project. A great many factors conspire to impede success in this process. Because it is given from an exclusively technical

perspective, training becomes a matter of simply passing on procedures to be followed. This prevents the teacher from becoming an active player in his own learning and reduces him to a passive receptor of instructions delivered by engineers or "experts". That leads to a contradictory situation for the teacher since he then reproduces this very passivity in the classroom. He therefore faces the paradox of being reduced to the same level as his students. It is not surprising, then, that teachers look upon training courses as something imposed on them by the Ministry of Education and not as an opportunity that will empower them in their work.

In light of the foregoing, we think that any attempt to optimize the introduction of ICTs in schools must begin with training of a kind that treats the teacher as an active subject in the process of learning the technology so that he will have a thorough understanding of the nature of ICTs as they apply to education. In other words, it requires teachers who, through practice, can lose their fear of making intensive use of technology and who are able to see the potential of the computer in their work. This is the only way to make the teacher a motivating agent for active appropriation of the culture by students. Otherwise, we will merely be reproducing what we see today – a teacher with resistance and fears, who instead of facilitating learning ends up hindering it and becoming a stumbling block that discourages students from learning.

Finally, we believe it timely to raise an issue that needs to be discussed in order to optimize the introduction of ICTs and to begin reducing the digital divide. This involves analyzing the underlying assumptions on which programmes such as Red Enlaces are based and the ambiguity with which their ultimate objectives are proposed. In our view, the user profile that is supposed to be created through teaching in high schools has never been clearly spelled out, either in official statements that rely on vague concepts such as "citizens of the world" or in teaching practices that discourage the real integration of ICTs into the curriculum. Is the Ministry of Education trying to teach children to handle a computer or to assert ownership over information technologies? Questions such as this will remain unanswered if we do not understand them in the context of a complex society where the issue of learning and training is often divorced from the real needs and conditions that society offers these youngsters.

To view this problem as merely a question of teaching computers in the school is to reduce it and strip it of any perspective in terms of progress for society as a whole. It is this notion of the autistic isolation of the school that in the end transforms the computer into a mere technical device, essentially a typewriter with memory. If we are to optimize the teaching of ICTs, we must view these technologies as an integral part in the process of educating active subjects and equipping them with the tools they need to enter fully into the information society.

## Notes

1. Interdisciplinary Programme for Research in Education, PHE, Santiago, Chile.
2. There has long been talk of a newly emerging society, and many definitions of it have been proposed: the postindustrial society (Bell and Touraine), the consumer society (Baudrillard), the global village (MacLuhan), the information society (Costell), the computerized society (Nora-Minc) and the digital society (Mercier). In each of these conceptions there is both an implicit and an explicit vision of development.
3. The factors that have caused our region to lag behind have of course given rise to a very broad debate on the issue of development. A discussion of those factors, however, is beyond the scope of this paper.
4. "Thus, 5,300 schools are participating in the Red Enlaces. Although it seemed impossible six or seven years ago, today it is a reality. Under a contract signed with the CTC Company, those schools today are part of the worldwide Internet network, which means that 90 percent of students in the Chilean school system are now connected, free of charge, and the Internet is now much more widely used. In other words, we are educating nearly the entire school population on the basic aspects of life in the society of the future, and we are closing the gap that existed until very recently between school culture and global culture." (Arellano, 2000: 11).
5. While there are many definitions of ICTs, we use the one proposed by Della Crovi Druetta in her book *Satellite technology for teaching*: "These new technologies replace the analog system by the digital system, which makes possible new systems of distance transmission in the communications field. . . . Moreover, the new technologies include both hardware, the machinery itself, and software. . . . They have been defined as reflexive and interactive. Reflexive because they result from the application of human reasoning, which, in relating to them, can adapt the services they offer and adjust the software component as needed. Interactive because in some cases they can respond to the user and because, in contrast to conventional media, they do not represent a simple menu of media, but rather integrated systems in which media combine and interact" (2000: 12–13).
6. "Progress achieved by the end of the decade can be summarized in two statements:
   - 90 percent of Chilean students have a computer room with Internet connections in their school.
   - Computers have been incorporated into new study programmes and are part of the daily work of Chilean students.

   Implementation of the Red Enlaces has meant:
   - Training 20 teachers in each school for two years, i.e. approximately 70,000 teachers trained through a nationwide university-supported technical assistance network.
   - Distributing 38,000 computers to schools, as a function of their student population.

- Equipping the schools with educational software in support of study programmes.
- Creation of a web site <http://www.enlacs.cl> offering a selection of educational content and services for teachers and students (Ministry of Education of Chile, 2000a: 7).

7. "The Red Enlaces was conceived as a 'seed' project to equip each school with sufficient computers so that teachers could evaluate the technology in the context of their school's teaching plans. The equipment was distributed as follows: for schools with up to 100 students, 3 computers, 1 printer; for schools with 100 to 300 students, 6 computers, 2 printers; for schools with more than 300 students, 9 computers, 2 printers" (Hepp, P. 1988: 130).
8. The Red Enlaces project is financed by the World Bank.
9. "From the perspective of an educational experience that will be relevant to the world in which Chile's children and youths will be living in their adult lives, computers and computer technology occupy a central place. They offer access to information and knowledge and make it possible to communicate and network with others, and it is this model of linkages that is the basis of how the modern world functions" (Arellano, 2000: 11).
10. *Education plan for the Commune of Maule 2000.*
11. The La Plaza (or Town Square) software was created by the Educational Computer Technology Institute of the Universidad de la Frontera. It has four spaces: the "kiosk", where children can post notices for all to read and which also contains stories and comic strips; the "cultural centre", listing various discussion groups; the "post office", which allows children to send and receive e-mail; and the "museum", which contains small databases with various kinds of information, from how to produce a school newspaper to the voice of Pablo Neruda reciting a poem.
12. This view is confirmed by Victoria Uranga in her study ***New technologies: information or communication? The Enlaces Project (Chile)***, in which she poses this question: How do children and teachers use Red Enlaces? "The great majority of network users participate by writing seriously in La Plaza (97 percent), which shows that they place great value on the new technologies and are ready to use them. This was confirmed by what the children said in the focus groups, where they demonstrated a high degree of motivation and interest in using them. A further discovery is that children and adults have opposing interests. What adults like about La Plaza is rejected by the children, and vice versa. This was clear in their preference for different sections. The children's favourite is the "literary corner", while for the adults it is "pedagogical innovation". Another example is the fact that the sections preferred by the teachers attract zero participation by the children. With respect to the topics that users write about, there are also enormous differences: for the children, the favourite topic is friendship (39.6 percent), while for adults the favourite topics are related to technical matters (45.1 percent). The explanation here is that the two age groups make different use of La Plaza. In 79.2 percent of cases, the children use it for fun, while 84.6 percent of adults use it in a utilitarian way. This is reinforced in

the connection between the messages from the network and the school environment. In the case of children, only 16.7 percent make this connection, while the figure for adults is 84.6 percent."

13. Anyone who has been in school knows that no noise is allowed near the principal's office and that if they go there at all they must behave especially well.
14. Remember that, in general, each class has a specific "homeroom" and that it is the teachers who move from one classroom to another, depending on the subject to be taught.
15. There are of course technical reasons for the room's features (such as protecting the computers from dust and humidity), but this does not diminish the symbolic impact of its isolation.
16. This point of course embraces a series of variables, such as a teacher's real mastery of ICT, the kind of relationship he has with the class, his ability to organize a group of children in an atmosphere different from that of a conventional classroom, his methodological training, etc. But even so, a key element of judgement for understanding the structure of a computer class is the teacher's real willingness to integrate computers (and ICTs in general) as a classroom resource (with all the challenges this entails).
17. It would be unthinkable, for instance, to punish a child by barring him from a mathematics or science class.
18. Even the design of the software is more conducive to individual than to group work.
19. It was fairly common for some students to stay in front of the computer even after the recess bell had rung.
20. As noted earlier.
21. As well as the entire weight that the outside community can bring to bear from this perspective, something that we did not examine.

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# Learning from the pioneers: Best practices as exemplified in the TELAR network

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## Introduction

Since the 1960s, continuous progress in microelectronics, information technologies, computers and telecommunications has brought about a deep and all-embracing transformation that has culminated at the beginning of the 21st century in a new global economic, social and political system (Castells 2000). Today, the gap that has always existed between developed and developing countries and between rich people and the poor has been accentuated by inequalities in access to this new global system, for which the new information and communication technologies (ICTs) provide the gateway. The 1999 UNDP *Human development report* shows that in 1998 only 0.8 percent of Latin Americans had access to the Internet, and the overwhelming majority (90 percent) of those who did were members of a small and wealthy elite.

The problem as it exists in Latin American societies is not limited to the scarcity of computers and Internet connections: it is much more complicated. The resources needed to access this new technological world not only require people to have the technology and the technical training but also the intellectual skills to use that technology and turn it to their own purposes (Wilhelm 2000). ICTs are not simple tools, but rather processes that must be developed – processes of communication, information or production. In these processes, thanks to the facilities ("user-friendly" programs, digital productions) that the new technologies offer, the distinction between users and creators is disappearing, and those who were once merely users of ICTs can now be creators as well. But to reach the point where they can create things for themselves, users must have the necessary intellectual and technical preparation (Castells 2000: 31).

Bonilla (2000) argues as follows: "Cyberspace, virtual communities and networks represent new fields of play that are reproducing and extending the existing unequal social and cultural distribution of material and symbolic capital in the Western world; nevertheless, they also constitute an arena that offers the potential for empowering excluded social groups and helping them

to improve their living standards through strategic use of these new tools, while encouraging the processes of reinforcing identity and building citizenship."

The fast-moving changes that new technologies have brought about have exerted tremendous pressure on governments, schools and other educational institutions to find ways of integrating technology into education. While many government projects start out with good intentions, they soon run into barriers that prevent their effective and successful implementation. Schools are complex institutions that are difficult to mobilize. Technology projects often fail for lack of proper planning. The task of transforming a school is daunting indeed, and failure in this respect is no surprise. Yet the fact is that we know very little about what it takes to integrate technologies successfully into Latin American schools.

In an early effort to bridge the growing divide, the government of Argentina in 1994 introduced the Social Education Plan, as part of the wide-ranging education reform inaugurated by the 1993 Federal Education Act, Law 24,195. One of the objectives of this plan was to promote the integration of technology as a means of improving the quality and equity of public education. In cooperation with IEARN (International Education and Resource Network) Argentina, which has been in existence since 1989, the TELAR network was established. TELAR (the Spanish acronym for ***Todos en la red***, or roughly "Everybody into the Net")[1] is a network of schools, teachers and students in Argentina, run by Fundación Evolución. Between 1994 and 1998 it was supported and financed by Programme 1 of the Social Education Plan[2] of the Argentine Ministry of Culture and Education. TELAR is associated with IEARN,[3] an international education network that allows students to participate in international cooperation projects, and TELAR now functions in fact as the Argentine chapter of IEARN. In Argentina this education network is known as TELAR–IEARN.

Programme 1 of the Social Education Plan, "Better Education for All", provided support to teachers experimenting with new teaching methods, and in particular with the use of technology. As part of Programme 1, schools were supplied with computers for both information processing and telecommunications uses. Fundación Evolución,[4] in cooperation with the Ministry of Culture and Education of Argentina, was in charge of providing initial training for 1,000 teachers in schools participating in the Social Education Plan. With this training, teachers were able to take advantage of e-mail for communicating with their peers in other parts of the country and the world in order to associate classroom activities with the theories of constructivist pedagogy, critical thinking, problem resolution and transformational practices. Although the Social Education Plan was terminated in 1999, Fundación Evolución has continued its efforts to bring ICTs to Argentina's neediest schools. Through its national network of provincial facilitators, it is today working in close cooperation with the Ministry of

Education, the educational portal "Educ.ar" and other non-governmental organizations.

In schools that received training under the Social Education Plan, success in adopting ICTs varied from nil or very limited in the great majority of schools, to massive adoption in a few institutions (Lafontaine 1999). Our research set out to examine the reasons why use of this technology had such an outstanding impact on the education community in two public schools that were operating under very unfavourable conditions, within low-income communities in isolated zones where there were few resources available. To this end, we conducted an exhaustive study of the Provincial Secondary Education Centre No. 3 (CPEM 3) in Zapala, province of Neuquén, and the Provincial Secondary Education Institute No. 84 (IPEM 84) "Jorge Vocos Lescano" in Tanti, province of Córdoba. In both of these schools, ICTs were successfully adopted and integrated beyond all expectations, to the point where they became national and international models of success.[5]

"Learning from the pioneers" is an investigation into the best practices used in the TELAR–IEARN network, with a focus on the process that led to the integration of technology into school life.

By documenting the process of integrating ICTs in the two schools, we were able to identify the key elements that made these experiments successful, despite the difficulties posed by poverty and remoteness from major urban centres. The results of this research will allow Fundación Evolución to use the schools as models for further efforts to develop and improve its activities and for making recommendations to education ministries and other education authorities on the factors that must be taken into account in programmes for promoting the integration of ICTs into schools.

## Theoretical framework

In the more industrialized countries of North America and Europe, there is a growing literature on the key factors essential for the design of a model technology project (Ely 1990; Read 1994: 34–41; Fullan 1991; Hawkins et al. 1996; Honey and Henriquez 1993). Although this literature relates to factors and circumstances that are very different from those prevailing in Latin America, we took those models as the starting point for our research into the conditions and factors for success in the TELAR–IEARN schools. This paper is a first step towards developing a model that is more appropriate to the Latin American context.

Research in the United States has shown that there are a number of constant aspects or factors in any successful technology project. The exact number of significant factors varies from one study to the next, but there is a minimum core group of factors that show up on all lists. As our analytical framework for examining the data from surveys and interviews with teachers

in those two schools, we have selected for our research the seven most commonly cited factors. They are as follows:

## 1. Goal

One factor that appears important from the literature is a clearly defined purpose or goal for integrating technology. Moreover, such goals are clearly and significantly related to broader educational objectives. In most cases these were clearly understood by teachers, parents and the local community, in very concrete ways: improving reading and writing, enhancing technological skills or involving the community in projects, for example. Goals might vary between different technology projects, but a constant element in all of them was that the technology was associated directly with the students and their experiences.

## 2. Leadership

Leadership at various levels is important if an innovative project is to take root and grow. In our study we focused particularly on leadership within the school, which is divided between the principal and the project coordinators. If a project is to succeed, there must be a person who takes the initiative for directing it. More specifically, there are several aspects of leadership that are important in a technology project.

(a) Pedagogical vision. Leadership requires a pedagogical vision that recognizes what sound education is and what the role of technology should be. The literature suggests that in many successful projects technology is used as a means for improving the educational experience, but it is never the final objective.
(b) A long-term commitment to integrating technology. Another feature of successful experiments is that the schools approach change from a long-term perspective. A complicated project requires an ambitious vision because it implies great changes, yet at the same time it demands a patient approach, taking modest steps each year. The successful schools are those that are prepared to foster and promote change over a horizon of three to five years.
(c) Recognizing the extent and depth of the problem. According to the literature, successful leaders and coordinators recognize that the challenge of integrating technology has many facets and is closely linked to all other aspects of school direction and management (financing, teaching, teacher training, assignment of classrooms, timetables, etc.). By recognizing that the integration process is complex, the school's management and the project's coordinators are ready to resolve any problems that might arise.

### 3. Professional development

Training is one of the most important elements. Teacher training, in both technical and pedagogical terms, is consistently cited in the literature. This allows teachers to acquire new skills and introduce new practices and teaching strategies. In the best case, training is designed to provide direct support to a project's specific activities. Moreover, a successful project will sometimes adopt training strategies based on local experience within the school and the community.

### 4. Learning and experimentation

Another strategy that appears in the literature on successful integration projects is to begin on a small scale and experiment. Every small step provides an opportunity to examine and assess progress, appreciating positive elements and revising negative ones.

### 5. Time

Another key factor, and a multidimensional one, is time. Achieving such a great change takes time. Time needs to be viewed in different dimensions, as it relates to professional development, pedagogical vision and the commitment of the school's management. In the area of professional development, sufficient time must be programmed so that teachers can learn to integrate new technologies into their curriculum. Consistent with a constructivist and active pedagogical vision, time must be allowed for students to carry out their technological projects. The school timetable, divided into classes of 40–50 minutes, makes it difficult for students to concentrate and come to grips with a complex project. And, finally, the school's principal must be patient and allow time for the school to adjust to the complex process of integrating tools as powerful as ICTs.

### 6. Infrastructure

Infrastructure is of great importance for the long-term success of any project that implies transforming an institution. We may divide it chronologically between preexisting infrastructure and the infrastructure that will be developed with the project in order to meet new needs. There are several important elements of infrastructure:

(a) Specialists and technical support. The support of experts and specialists is crucial for the long-term success of any technology project. The kind of support needed goes beyond mere technical know-how. Pedagogical and curricular support is indispensable. Coordinators must start by instructing teachers in how to make significant use of the technology.

(b) Physical space. In North America there is no one model for distributing computers that stands out as more effective than the others. Schools have succeeded with centralized computer laboratories as well as with the placement of computers in individual classrooms. The only important factor is that the computers must be located in a place reserved for their use so that students will have the equipment available when they need it. The placement of computers corresponded in all cases to the pedagogical needs of the project.

(c) Support from the professional community. The literature indicates that schools with successful technology programmes have enjoyed support from the teaching community. Its role is to provide collective support for teachers participating in the project as they struggle to cope with innovation, analyze emerging problems and seek advice.

### 7. Financing

Financing is a continuing challenge, but a project's success will depend on whether it can adopt a long-term sustainable development strategy. Successful projects accept the fact that technology is not a one-time investment but a continuing cost that must be accepted as part of an institution's ongoing expenses.

## Methodology

For this project, we employed a mixed methodology and working approach based on documenting teaching experiments in the classroom. We included a quantitative methodology to supplement our qualitative research. The central methodology consisted of two case studies of successful schools in the TELAR–IEARN network. Each school represents a world with its own social system, which is, in turn, situated within a broader context. The case study approach allows researchers to approximate experience as it is lived in each school and, in this way, to identify the particular features in each case that allowed TELAR–IEARN to grow, to put down roots and to have the observed impact.

The two schools included in our research, CPEM 3 in Zapala and IPEM 84 in Tanti, were selected on the basis of three criteria: we looked for schools that had been participating in TELAR–IEARN for a long time, those whose students had participated steadily in TELAR–IEARN projects, and those where the coordinators had demonstrated their commitment to the TELAR–IEARN national network. These factors, we felt, should indicate solid support for the educational technology and the school's connectivity to the national network. We began by advising four selected schools of our interest, and two of them were prepared to cooperate with us. Although the schools were in different regions and reflected differing situations in terms of their socioeconomic characteristics and degree of urban influence, we recognized

that a study on such a reduced scale could not hope to represent the diversity of contexts among schools of the TELAR–IEARN network.

In each school, the research team conducted a series of interviews and observations over a period of one week. They interviewed the following groups of people:

- The original coordinators of TELAR–IEARN
- The current coordinators, if there had been change
- The current principals
- The former principals, when possible
- Teachers who had participated in TELAR–IEARN
- Teachers who had not participated in TELAR–IEARN
- Students participating in TELAR–IEARN projects
- Former students who had participated in TELAR-IEARN, where this was possible

We sat in on classes and participated in them, and we observed computer and telematic laboratories, recess periods, the teachers' room, extracurricular activities of students and TELAR–IEARN activities.

To round out our qualitative data on the two schools, the research team conducted a survey using a questionnaire developed by the Center for Innovative Learning Technologies of Stanford Research Institute and the University of California at Berkeley. This survey covered factors that were considered key for integrating technology in schools, as noted in our theoretical framework, and allowed us to measure the extent to which these factors applied in a given school. The questionnaire was translated and amended to fit the Argentine context and was administered to teachers in each school in the hope of obtaining an overall view of their teaching philosophy and activities, their previous training and their use of technology, as well as their relationship with the students so that we could then attempt to correlate those factors with the success of TELAR–IEARN.

## Introduction to the case studies

### Characterization of the schools

Centro Provincial de Enseñanza Media No. 3

CPEM 3 is a secondary school located in Zapala, at the approximate geographic centre of the province of Neuquén in northwestern Patagonia. Its immediate surroundings present an arid landscape of mountains and tablelands, in contrast to the southwest of the province where there are forests and abundant vegetation and the climate is cold and humid. Zapala has a

population of some 33,000. Its geographic isolation places it at a disadvantage in comparison with other cities of Neuquén. The nearest city is Cutral Co, 80 kilometres away. The capital city is 180 kilometres away. Another feature of the city is its cultural isolation. For example, the one movie theatre in town operates only sporadically. Income levels are low, and the city's youths have few if any spaces for social interaction. Even sporting facilities are scarce because of the lack of enclosed spaces and the harshness of the climate.

CPEM 3 opened on April 19, 1960, and since that time has awarded the diploma of ***Perito Mercantil*** (Commerce Specialist), to which it has now added ***Auxiliar en Computación*** (Computer Assistant). The school has an enrolment of 1,150 students, divided into three shifts, and a teaching staff of 140. CPEM 3 was one of the first five pilot schools to take part in the IEARN programme, and it is the only one in that group that remains involved with TELAR–IEARN today, 10 years later.

### Instituto Provincial de Ensañanzas Medias No. 84 "Jorge Vocos Lescano"

IPEM 84 is the only public educational institution in Tanti (Department of Punilla), a town located 47 kilometres from the provincial capital, the City of Córdoba, and 750 kilometres from the federal capital in Buenos Aires.

The area is bordered by high mountain ranges to the west and the land slopes gradually lower to the east. It is an area of many rivers that empty into the Lago San Roque, which is a major point of attraction for the city of Carlos Paz, a tourist centre located only 18 kilometres from Tanti. The economy relies primarily on tourism and on the output of regional products.

Tanti has a population of some 5,000 inhabitants. Despite its proximity to the city of Carlos Paz, it is not a "must see" on the tourist circuit. The road leading to Tanti, which branches from the main highway from Córdoba to Cosquin, ends in the mountains, and only visitors interested in adventure tourism are likely to take it.

IPEM 84 was created in 1987 by a group of parents determined to establish a public secondary school in the town. The school offers EGB 3 (grades 7 to 9) and Polimodal (grades 10 to 12), with a focus on electricity and electronics. The school's infrastructure is in poor condition, the classrooms need roof repairs, there is no heating and winter is a difficult time for students. All are therefore looking forward eagerly to the new school building that is now being built a few metres away. The school's student enrolment in 2000 was 286, and it has a very loyal teaching staff of 41 teachers, many of whom have been with the school since it was founded. Very few students leaving the school go on to university, for lack of money. For this same reason, many students have never been to the capital city of the province, although it is only 47 kilometres away.

## Demographic profile of the schools

We conducted a questionnaire survey to obtain a more accurate description of each school. The survey was designed to provide greater detail on the general context of the school, covering areas such as school culture and support, educational philosophy, teaching practices, use of technology and professional development.

The questionnaire was distributed to 90 teachers in the two schools. These teachers had been with the school for more than one year and were teaching more than one class. The response rate to the survey was 50 percent (45 responses), 36 from CPEM 3 and 9 from IPEM 84.

Responses were received from 2 principals, 37 teachers, 4 assistant teachers and one educational adviser. Eighty percent of the teachers are women. The teachers had an average of 13 years, professional experience (see Table 1), and more than 50 percent of them had been teaching for at least 10 years.

**Table 1. Years in teaching**

| *Years in teaching* | *% of teachers* |
|---|---|
| 1 year | 9 |
| 2 to 5 years | 5 |
| 6 to 10 years | 28 |
| 11 to 20 years | 33 |
| More than 20 years | 25 |

The questionnaire asked teachers whether they were using the technology with their students and how they were using it. Of the 45 teachers responding, 47 percent (21) were using computers with the students ("users") and 53 percent (24) were not ("non-users") (see Table 2).

**Table 2. Ways in which teachers use the technology for teaching practices**

| | *Use with students* | *Do not use with students* |
|---|---|---|
| I assign tasks and supervise students in using the computer | 15 | |
| I assign computer use to students but they are supervised by another teacher | 6 | |
| I use computers in the school but not with my students | | 6 |
| I do not use computers in the school but I do use them elsewhere | | 13 |
| I have never used computers for teaching or any other purpose | | 5 |
| *Total* | 21 | 24 |

The teaching profession in Argentina is governed by factors such as the number of teaching hours and the number of students in each class. In contrast to developed countries, Argentine teachers are allowed no specific time to prepare their classes. Only classroom hours qualify as paid working time. The sample of teachers covered by the survey worked an average of 23.5 classroom hours a week (see Table 3). Since teachers in Argentina commonly hold down several jobs or teach in several schools, however, we asked them how many hours they worked in total. We found that the teachers were working an average of 32 hours a week and that "user" teachers spend more time in class in the school in question.

**Table 3. Average teaching hours in the target school and total hours worked per week**

| | *Teaching hours in the school (per week)* | *Total hours worked (per week)* |
|---|---|---|
| Users | 27.2 | 34.9 |
| Non-users | 20.0 | 29.3 |
| All teachers ($n$ = 45) | 23.5 | 32.0 |

Another aspect that is important in understanding the context of their work is the number of students per class and the frequency with which each class is taught. Since these data tend to vary from class to class, we asked teachers to report on the class with which they estimated they did most of their work (see Table 4). The teachers had an average of 28 students per class. Forty percent of them met with their class only once a week, while the remaining 60 percent met with their class at least twice. Eighty percent of the user teachers met with their students twice a week or more. There is a correlation, then, between use of the technology with students and spending more time in the same school and meeting more often with students.

**Table 4. Number of students per class and frequency of class instruction**

| | *Average no. of student* | *Weekly class frequency (average)* | *Teachers who meet their class only once a week* | *Teachers who meet their class twice or more per week* |
|---|---|---|---|---|
| Users | 28.1 | 2.25 | 20% | 80% |
| Non-users | 23.3 | 1.50 | 57% | 43% |
| All teachers | 28.0 | 1.90 | 40% | 60% |

## Case study: CPEM 3, Zapala, province of Neuquén

### Decision to participate in the project

IEARN (which subsequently came to be called the Red TELAR-Centro IEARN Argentina) reached CPEM 3 in 1990 when the principal of the Escuela de la Costa school on the Patagonia Coast, Daniel Reyes, made contact with IEARN in the United States with the idea of bringing the project to Argentina. At that time it was decided to create a pilot project with a school in each province of Patagonia. In Neuquén, the Board of Education offered the project to CPEM 3 because, at that time, it was the only school in the province that had a computer room. The main conditions for participation that the Board of Education demanded were to have a computer, to have a telephone line and to secure the commitment of the heads of the computer science and English departments. When the IEARN project was launched in Argentina, English and computer science were the two subjects that were essential for success with the project.

### 1. Goal

The department heads of CPEM 3 met to discuss the proposal. After debating all the pros and cons, they finally decided unanimously to become involved in the project.

In 1990, the Internet was little known in the world at large, and even less so in an isolated place like Zapala. Considerations were not based, therefore, on any prior experience with the technology, but rather on the possible teaching impact that teachers could foresee from the little they knew about the project. This lack of knowledge was considered a negative point in terms of participating in the project. Teachers were uneasy about this unknown technology and feared that they would not be able to use it property, and they were on the point of rejecting the proposal. Fear of the technology went hand-in-hand with the concern that it might represent a waste of money. There was also debate over the cultural impact of a cooperative project proposed by the United States and Russia. Concern focused on the risk that teaching would have to follow US curricular guidelines and would therefore no longer meet the needs of Argentine students, and that it would tend to expand the already heavy influence of US culture and values. A further negative factor was resistance to the changes that would be needed in teaching methods in order to carry out the cooperative projects.

| *Pros* | *Cons* |
|---|---|
| More resources for students | Unknown technology |
| Curricular support for teaching computer science and English | Waste of money |
| | Foreign cultural influence |
| Cooperation with other schools | Changes in teaching methods |
| Professional development for teachers | |
| Overcoming Zapala's isolation | |

The points in favour of participating in IEARN that were debated at that time could be divided into the potential impact for students and that for teachers. Among the factors that might affect students, the most attractive from the teachers' viewpoint, was that the project would mean more resources for students in a cash-strapped school. Whether or not the experiment was successful, it represented the only way of giving the students access to this technology. Moreover, it was unheard-of for a public school to have such access, and so the project was looked upon as an opportunity to give substance to the notion of equity, which was one of the key concepts behind the Argentine education reform. The second point in favour was the linkage that the project implied between technology and subject matter. For the computer science and English departments in particular, IEARN represented an excellent curricular resource. The two department heads immediately saw the benefits that the experiment could bring, if it were successful. In effect, it represented an opportunity to improve the quality of education, which was the second guiding principle of the education reform.

In the case of the English department, teachers reported that as soon as the first English-language messages began arriving from students in the United States the local students became very enthusiastic about the subject. For the first time, students could see that this foreign language had real meaning for them. The teachers quickly realized that this technology had a potential that they had never imagined. The English department thus became a solid pillar of support for participating in international projects.

The project's most positive impact on teachers was the professional experience that it represented. At that time, the two female teachers responsible for the project were feeling frustrated in their professional career. They put in their teaching time and they liked the work, but they felt bogged down in routines. IEARN offered a change, the chance to experiment and learn something new. Not only were cooperative projects something innovative in themselves, but the Internet held out the promise of global connectivity, which would put them in contact with teachers all over the world. It offered continuous professional training in the teaching practices of many countries.

A final factor that attracted teachers to IEARN was the hope that they could thereby break down the school's isolation, recognizing that this could have a profound impact on the education community. It is important to remember that Zapala lies alone on the North Patagonian plain and that the nearest town – no bigger than Zapala itself – is 80 kilometres away. Professors and students alike live in isolation from the world, a fact that will become clear when we explain how the teachers of Zapala received their training. The new technology promised to connect them to the globe, through a virtual world where geographic distance would lose all meaning.

Although at this stage IEARN worked primarily in English, the first project in which the school became involved was in Spanish, with the Escuela de la Costa. This project dealt with an oil spill in the waters near Puerto Madryn,

during which thousands of penguins became fouled and were facing death. Students of the Escuela de la Costa were able to share with CPEM 3 classes the efforts they were making to rescue the penguins. Teachers and students both considered this first project a success, but the coordinators still faced the problem of enlisting greater participation. It was now easy to motivate the students – the penguin project had aroused great interest and they were keen to take on further projects. This motivation was indeed an important factor in encouraging more teachers to participate.

## 2. Leadership

The coordinators provided leadership for the project and they developed strategies to help promote it among the teachers. They planned and designed training courses to demonstrate the pedagogical utility of IEARN and created easy and clear ways to foster participation in IEARN. In order to enhance technological skills, the coordinators organized and conducted an e-mail workshop and discussion groups with their colleagues. The workshop helped teachers to overcome their initial misgivings about the technology and bolstered their confidence and their ability to introduce the technology in the classroom.

The coordinators also pursued a strategy to demonstrate the use and impact of ICTs and IEARN. The first projects at CPEM 3 included a highly public component so that other teachers, students and the general community could see the impact that these projects were having. Perhaps the best example came when the school participated in a videoconference with the Argentine Ambassador to the United States. During our interviews in CPEM 3, many teachers recalled that moment, which had revealed for them the real potential of this technology.

A third strategy that the coordinators pursued in practice was to create small activities that the teachers could incorporate into the classes. In history and geography classes, for example, teachers asked the students to pose some very simple questions relating to the course of study. These questions were sent to several schools around the world by e-mail. As the responses came in, the students were able to learn through genuine communication about the similarities and differences between people. The geography and history teachers overcame their initial doubts about the technology and realized that it could be of great service in helping their students to learn.

A fourth strategy followed by the coordinators as participation grew was to identify specific IEARN projects that would appeal to specific teachers, to create a concrete activities plan and help teachers carry it out.

Although the school principal was not involved in the project on a daily basis, his leadership was also decisive. From the outset, the CPEM 3 principal gave the project his full support. The school changed principal several times during the 10 years of its involvement with IEARN, but each incoming

principal threw his support to the project. This support made itself felt in many ways. At the outset of the project, the principal set aside a small room for the telematics club. His support was also essential in granting permission for the coordinators to excuse themselves from school for training sessions.

The principal's most important contribution was to promote and undertake all the changes needed to the school's infrastructure and for its use, and to approve the expenditures to keep the project going. When IEARN arrived, CPEM 3 had only one telephone line. With the principal's consent, that line was shared with the telematics club. Later, another principal sought help from the Provincial Board of Education to provide another telephone line for the project. Because it did not have its own budget, the school could shoulder only part of the costs associated with the project, and the principal had to negotiate with the Board on several occasions to cover the balance.

Another aspect of CPEM 3 that was noted by the teachers who launched the IEARN project was that the teaching body in the school was fully behind it. The teachers knew each other and cooperated and shared with each other very well. This strong collegial spirit did much to popularize the project among the other teachers.

A final factor that was fundamental in institutionalizing the technology in CPEM 3 was the principal's establishment of a Department of Telematics. The Provincial Board of Education created the necessary time slots, which institutions were allowed to allocate as they deemed necessary. The Department of Telematics is the only one in the province (if not in all of Argentina). It is interdisciplinary in the sense that it uses its resources to promote and support cooperative projects using technology in all areas of the curriculum.

### 3. Professional development

Initial training for the coordinators was complicated by the fact that the participating schools were widely scattered, with one in each province. It was therefore not possible to bring all the coordinators together on a regular basis at the Puerto Madryn school, which functioned as the IEARN-Argentine headquarters. As well, the Puerto Madryn school itself had little experience with the project, although it did have a telematics expert on the staff. The people with the greatest experience were in the United States. Nevertheless, the coordinators were able to make occasional trips to Puerto Madryn to attend technology workshops. IEARN provided manuals and printed material so that the schools could in effect do their own training.

In Zapala the coordinators made use of other training means, beyond those programmed. At their own initiative they asked the Provincial Board to fund more trips to Puerto Madryn to work with the expert there. Essentially, however, the coordinators trained themselves in telematics aspects (configuration, software, wiring, etc.) via short-wave radio links. At 10 pm

each night they met at a ham radio operator's home to listen to technical instructions from the expert in Puerto Madryn. They took notes and then tried out their new knowledge at school the next day. If it did not work, they went back for another radio session the following night. Beyond the tremendous dedication that the two coordinators showed, we must note that they started from a solid basis of knowledge in computer sciences and English. The only technological aspect that was new to them was telecommunications. The head of the computer science department was already fully familiar with the computer science aspect. Not all schools invited to participate in the TELAR network had this kind of expertise available.

### 4. Learning and experimentation

The fact that the project was launched at the same time in the United States, Russia and Argentina meant that the local principals, coordinators and teachers, as well as the international coordinators, were all finding their way and coping with the same problems. This provided a sense of security to the initial participants since they were all facing a common challenge. The first successes were as modest as exchanging messages between students at Puerto Madryn and their twinned school in the United States.

### 5. Time

One of the conditions for participation that the Board of Education asked of the first school was that the heads of the computer science and English departments should be fully committed. At this time in the province of Neuquén, department heads were allotted 12 hours a week to spend on administrative duties associated with their position. This meant that in CPEM 3 the two coordinators had some time free from classroom responsibilities to devote to the project. Obviously, they spent far more time than this on the project, but those free hours allowed them time to coordinate with other teachers and students.

### 6. Infrastructure

There were several factors within CPEM 3 that helped the launching of the TELAR–IEARN project and to keep it running successfully. Some of those factors were already in place before the project began, and others were incorporated during the course of the project.

The coordinators were faced with problems in integrating an interdisciplinary project into a conventional curriculum, without much help from other teachers at the outset. Moreover, in 1997 the coordinators lost much of

their available school time for the project because of new budget programming demands on the part of the province. They therefore decided to establish a special club to promote and pursue the projects. Thus was born the CPEM 3 Telematics Club. The club was responsible for selecting projects, finding interested teachers and coordinating students' efforts to use the technology. Generally speaking, students and teachers in the club reviewed all projects submitted through TELAR–IEARN and selected the ones they found most interesting. If there was no one in the club who could help coordinate a project, another teacher was asked to take this on. Sometimes the project was integrated into the curriculum of some class, and sometimes it would be treated as an extracurricular activity.

As the project grew, it gave rise to specific needs. The principal decided to earmark specific resources to meet these needs. This led to the creation of a dedicated telematics room, which did much to enhance the coordination of activities under TELAR–IEARN.

When the need to translate messages into English exceeded the capacity of the English department, someone came up with the idea of creating the Translators Club to enlist students who had had private English instruction and whose facility in the language therefore exceeded the requirements of the official course of study. Those students helped greatly in translating international project proposals.

## 7. Financing

Financing has been a weak point of TELAR–IEARN in every school. It depends heavily on the support and the bureaucratic skills of the principal. In Zapala, the Provincial Board of Education initially refused to recognize expenditures associated with the project. For example, the project initially had to share the principal's telephone line. As expenses grew, the Board demanded adjustments. The principal refused to yield. The argument ran on for several months until the Board finally agreed to cover a portion of the costs. Later, official approval was received for a second telephone line, the costs of which were paid by the Provincial Board.

The TELAR–IEARN project enjoyed the support of the Zapala community. The local Internet service provider subsidized a portion of the subscription fee and several local firms covered the rest, as well as paying for paper, supplies and other inputs. To keep the telematics club going, many youngsters lined up sponsors among local businesses and neighbours, who paid a small monthly quota. When it came time to replace the equipment, students held raffles and other fund-raising activities. If it had not been for these additional contributions from the community, the project would never have survived.

## Case study. IPEM 84, Tanti, province of Córdoba

### Decision to participate in the project

IPEM 84 "Jorge Vocos Lescano" has been part of the TELAR network since 1994. It became a member as part of the Argentine government's Social Education Plan. IPEM 84 was one of 20 schools participating in the Social Education Plan in Córdoba. The principal of the school passed on to one of his computer science teachers an invitation he had received from the Provincial Ministry of Education to attend a teacher training session that was to take place in Puerto Madryn, in Chubut province. The principal had very little information about the event, other than that it had to do with computers. Thus, without knowing what it was all about, this teacher attended the first international IEARN session organized by the TELAR–IEARN Argentina network, together with another teacher from Córdoba whom she met at the airport. The Social Education Plan was to link 500 schools that year, but only two teachers from each province attended the training session. The two teachers from Córdoba in fact represented the only schools of that province in the Social Education Plan that are actively involved today in the TELAR network.

At the Puerto Madryn meeting, teachers spent seven days learning how to work with the projects offered by this organization. The computer science teacher felt that this meeting was very important, not only because of the training provided but also because it was a chance to meet and compare notes with other teachers involved in project implementation.

Before IPEM 84 became a member of the TELAR network, the pressures of globalization had led the Ministry of Culture and Education to introduce ICTs in the classroom. As noted earlier, concerns over fairness and accessibility meant that this was done initially in the neediest schools, under the so-called Social Education Plan. This was how IPEM 84 came by its four computers. The computer science teacher, who was at that time setting up computer laboratories in Córdoba, was put in charge of finding a place for these new computers and getting them up and running. Thus, when she came back to school from the training session in Puerto Madryn, she found that in addition to her new technical and teaching know-how she now had the resources – computers and a telephone line – needed to begin participating in TELAR.

### 1. Goal

Tanti is part of an urban community that is isolated by poverty and socially marginalized. The school leadership recognized the potential of this opportunity to participate in TELAR and promoted the project from the outset as a unique chance for the school, and for the Tanti community, given its

scarce resources, to interact with other educational establishments in Argentina and around the world.

In describing the pedagogical vision of the TELAR network, the Tanti coordinators stressed the importance of the first meeting of IEARN. At that meeting she met the teachers from Zapala and many other places, including countries that already had many years of experience. As the Tanti coordinator put it, "I learned there what TELAR is all about, I saw what these projects could mean for my students." Speaking of other teachers in Córdoba who had declined to attend the meeting, she said, "The others never came to understand what TELAR could really do."

For this school coordinator, with her strong social commitment, to be part of the TELAR network represented an opportunity for her own professional development and that of her fellow teachers, and more importantly a chance for personal enrichment for all her students. Her goal was to give all her students access to new technologies and new opportunities. As she said, "My students are just as good as the others, and they should be given the same chance."

The following projects in which teachers and students participated provide examples of the embodiment of this vision. In 1997 several students took part in a project that had a pronounced impact on the community. Under United Nations supervision, they joined the Student Movement Atlas project, in which they replanted areas ravaged by forest fires. At the outset of the project their objective was to study the soil, in light of the frequent fires that swept through the zone every season. On the basis of their research, they made contact through the TELAR network with a school some 300 kilometres away that was also working on a reforestation project. The students of IPEM 84 researched the kinds of trees that were needed and asked for them. As those trees grew, the two schools were able to work together on replanting areas that had been burned. Many students look back fondly on this activity, recalling the contribution that they were able to make to preserving the environment, the widespread recognition they earned for it, and the chance it gave them to engage in real fieldwork.

Thanks to the TELAR network, many of the teachers were also able to participate with their students in different competitions: the Geography Olympiad, coordinated by Fundación Evolución, sponsored and financed by the Ministry of Culture and Education and supported by the National Geographic Society, the purpose of which is to promote geographic knowledge and understanding; the Invention, Science and Technology Olympiad; and the Argentine Health Olympiad, held as part of a national health education programme. According to participants, these activities gave them the chance to:

- share their daily activities and be recognized for them
- rethink their role as teachers and the way they would structure their class for the next year, based on the methodology they had used with their students in conducting the required research and on what they had learned from the Olympiad

- acquire new knowledge in their own discipline
- encourage their students to take a more responsible approach to their own learning and to become involved in actual and meaningful experiments

## 2. Leadership

The computer science teacher, who had a technical degree and several years of teaching experience, led and coordinated the process of integrating TELAR into the school. She had the time to do this because, although no extra teaching hours were allocated, she had complete flexibility for incorporating projects into her computer class, and she could take advantage of the projects to teach the use of computers. When TELAR began in Tanti, the computer science teacher, who was also teaching in another school in Carlos Paz, decided to transfer her assigned teaching hours to Tanti so that she could spend more time in that school and work more closely on the project. The importance of this time consolidation aspect is borne out in the results of the survey, which show that one of the most important factors for integrating ICTs is to have a high concentration of working hours in the same school (see Table 3).

With all this enthusiasm, all this drive and the excellent relations she had with her colleagues, she found two strategies for integrating the TELAR projects into the school and promoting their integration into the curriculum. The first was to identify an appropriate project and then show it to a teacher who might be interested (for example, because it was related to the course he or she was teaching) and encourage that teacher to take it on, while offering constant pedagogical and technical support, for which she was well equipped. The second was to inspire the students by first showing them a project and then having them interest their teachers in it.

Projects in Spanish were generally favoured in the school, given the English-language barrier and the fact that there was no English teacher available who had time for projects.

The principal also played an important role in launching and running the project over the years. The principal's support was decisive in selecting the coordinator and also in giving her sufficient responsibility to establish the project. More important yet was the principal's support for financing the project and its required infrastructure. The principal played a key role in negotiating with the parents' association and the telephone cooperative. At one point, when some equipment was stolen, the principal's intervention saved the day. During the years of the Social Education Plan, the principal had left a portion of the subsidy untouched because the school already had computers. When the theft occurred, he was able to draw on this small reserve fund to buy a new machine.

### 3. Professional development

The Social Education Plan offered very few workshops on computers and telematics. Teachers from Tanti recalled that only two workshops were held, apart from the event in Puerto Madryn, where the pedagogical vision of the TELAR network was transmitted but which was attended by representatives of only two schools. Those two workshops were the only preparation given to the schools that were to be integrated into TELAR–IEARN under the Social Education Plan.

There were other opportunities for professional development, however; for example when TELAR worked together with the Health Ministry on the Health Olympiad. In connection with this Olympiad, a course was offered on how to use research projects as a basis for teaching.

Tanti represented a special case, since the computer science teacher already had a systems analyst diploma and another one in educational technology, in addition to her teaching certificate. Within the school, therefore, she was able to organize and conduct preparatory courses for teachers and principals.

The collegial atmosphere within the Tanti school created a professional culture in which teachers shared and discussed new practices, new teaching strategies and new activities. This created a propitious setting for continuous training and experimentation. This feature of Tanti stands out in the results of the survey, which show that one of the most common forms of professional development was to learn from a colleague.

### 4. Learning and experimentation

The leeway allowed for experimentation in Tanti produced solutions to obstacles in other areas: the lack of sufficient time for students and teachers to work on projects during the school day and the need for greater technical support. In the case of Tanti, the ability to adapt the computer class curriculum to incorporate ICTs was decisive. With this experiment, the coordinator was able to resolve the two problems: on one hand, she was able to find sufficient time for students to work on the TELAR projects, while on the other hand she established a technical support group among students to help with maintenance of the equipment.

### 5. Time

Before it joined TELAR, the school already offered computer science classes, but once telematics and the concept of project-based work were introduced changes had to be made to the curriculum. The principal at the time encouraged the coordinator to modify the computer science programme to include telematics and to familiarize herself with project-based teaching. In effect, the coordinator created her own course of study. The project-based

approach allowed students to learn about computers by writing a term paper, designing a web page or analyzing data from a spreadsheet as part of interdisciplinary activities such as environmental studies or local history.

### 6. Infrastructure

The principal provided solid support from the outset; and because IPEM 84 is a technical school, most of its members looked upon the integration of TELAR as a logical step forward, and one to which they would have to adapt. Similarly, the community was very cooperative and rallied quickly behind the project, particularly since the school had in fact been founded by local parents and teachers. Thanks to this community support, the computer laboratory was fully equipped and at the time of our study had nine computers connected to the Internet.

The school coordinator was responsible for technical support, but since the school was in fact a technical institution she decided to train her students to perform technical servicing themselves. The students had access to the computer room whenever it was not being used. Since the telephone line used for Internet access was connected to a cooperative, and communication was very difficult to establish, the students sometimes had to take turns waiting and pestering for a connection. When a connection was made, they would alert all the others so that they could read any incoming messages about the projects they were working on.

### 7. Financing

The community played an important role in financing the connection. The parents' association paid for the telephone line. The telephone cooperative, which runs the telephone service for the town and is the only Internet service provider, allowed the school free connection to the Internet.

Students also contributed by holding raffles to buy new equipment, since the school had no other source of funds for the project.

## Benefits of the TELAR network and telematics

During our field research at the two schools, the teachers involved in TELAR told us of the many changes that they had observed in the school and among the student body. Those changes go well beyond technical know-how. There have been changes in classroom activities, in student motivation, and in the level of autonomy and responsibility with which students conduct themselves. In the two schools visited, students in the telematics club and the technology support team play a key role in keeping activities going at the school. The students look after the equipment and make repairs, they select and promote projects and enlist teachers to work with the TELAR–IEARN network. The

projects have served to extend students' learning well beyond the classroom. One important aspect is that, in order to communicate through the network, the students are learning more about many aspects of their own community.

The results of the survey confirmed the comments made by the teachers we interviewed. The questionnaire included an item on benefits observed among the students in two global dimensions: psychosocial development and knowledge acquisition. In their responses to the questionnaire, teachers indicated that students had benefited in several dimensions (see Table 5). In the area of psychosocial development, 91 percent of the teachers found greater self-confidence, 86 percent pointed to improved abilities to work independently of the teacher, and 86 percent thought that students were making a greater effort. In the area of intellectual development and learning, 76 percent of teachers reported greater comprehension, and 67 percent believed that the increase in skills applied to the student body as a whole, and not only to a group of specially endowed learners. As well, 62 percent of teachers indicated that their students were delving into more complex information.

**Table 5. Teachers' views of benefits to their students from the use of the technology (percentage of teachers' responses)**

| | |
|---|---|
| Students feel more confident in their own abilities | 91% |
| Students work harder on their own, without teacher supervision | 86% |
| Students work harder at tasks when using computers | 86% |
| Students have a more thorough understanding of the concepts they encounter | 76% |
| Skills improvements are more evenly spread and not limited to a few outstanding students | 67% |
| Students search out and interpret more complex information in a more thoughtful way | 62% |
| The quality of students' writing is better when they use a word processor | 48% |

These observations have encouraged teachers to integrate TELAR and ICTs into their teaching as a tool for enhancing students' commitment and deepening their knowledge in different subject areas. One item on the questionnaire asked teachers to select the three most important objectives for using the technology, from a list of nine options that ranged from improving technological knowledge to learning other subjects. Responses varied, but there was a clear preference for objectives that make use of technology to deepen and extend student learning into other areas (Table 6). Most of the teachers cited the use of technology to seek information (57 percent) and to reinforce what students had already learned (52 percent). Next came its use as an analytical tool (43 percent) and to facilitate cooperative

work (48 percent). Only 29 percent of teachers considered computer literacy itself to be the principal objective of using the technology.

**Table 6. Objectives most frequently cited by teachers for student use of computers**

| | |
|---|---|
| Seeking new ideas and information | 57% |
| Making knowledge and skills "sink in" | 52% |
| Learning to work collaboratively | 48% |
| Analyzing information | 43% |
| Communicating electronically with others | 33% |
| Improving their knowledge of computers | 29% |
| Self-expression through writing | 19% |
| Presenting information to an audience | 5% |

The projects that were undertaken in the schools, the interviews, and the results of the survey on benefits observed among the student body all suggest that learning is active and constructive. As well, 100 percent of the teachers using the technology declared that they had learned new teaching approaches from it, and 63 percent defined their teaching role primarily as that of a "facilitator".

## Conclusion

The successful outcome of the experiment in the two schools studied is consistent with the theoretical framework on which we based our research. In varying ways, the education community in both institutions was able to overcome difficulties that prevented other schools from implementing the programme and integrating ICTs into school life.

### 1. Goal

IEARN International and the Argentine Ministry of Culture and Education each had their own objectives in implementing these programmes: improving the quality of life for the planet and its inhabitants on one hand, and improving secondary education on the other. In addition to these two goals, the project succeeded in both schools because the school community adapted it to its own needs (overcoming isolation and marginalization, providing basic content in computer science and English, promoting professional development, education reform and social equity).

### 2. Leadership

Constant support from the principals of both schools made it possible to bring about the institutional changes required for integrating the technology into the school so as to participate in TELAR–IEARN. Extension of the project in each school was due to the efforts of the coordinators, their clear vision of the potential offered by ICTs as a means for professional and educational development for the entire school community, and their efforts at generating small-scale activities to this end.

### 3. Professional development

Interviews at both schools revealed the difficulties that teachers faced in overcoming the shortcomings of the programme described by Lafontaine (1999) and in achieving their own professional training. In the absence of other resources, TELAR itself became for them a source of professional development. As well, both schools succeeded in overcoming obstacles because they had a computer science teacher with the technical know-how to move into telematics. In the case of CPEM 3, there was an English teacher whose command of the language made it possible to participate in IEARN at a time when very few projects were being conducted in Spanish.

### 4. Learning and experimentation

Flexibility to experiment and adapt the programme to each school's circumstances was important. In both cases, they began with simple exchanges and experimented with concrete activities that allowed them to reorganize the institution, test out the equipment and inspire enthusiasm among students and teachers, and ultimately to achieve massive participation by the education community.

### 5. Time

In both schools the coordinators had non-teaching time available, which they could devote to the project. This free time was generated by the schools themselves. Nevertheless, most of the time spent on the project was voluntarily contributed by the coordinators.

### 6. Infrastructure

The experience and strategies used in both schools confirmed that computers are not the only infrastructure needed to ensure success in projects of this kind. Equally important are access to a dedicated telephone line, a secure connection to the Internet, adequate teaching and technical support, and physical space where students can use the equipment.

### 7. Financing

Interviews in both schools revealed the difficulties that teachers confronted in overcoming the lack of funding, a crucial aspect for the sustainability of efforts to integrate ICTs. With no outside support, both schools had to develop their own strategies. The project was sustainable thanks to the support and the bureaucratic skills of the principals and coordinators, as well as the enthusiasm and creativity of the teachers, the students and the community in general.

Finally, our research also points to the fact that teachers in a school can play a decisive role in overcoming the digital divide. Many teachers demonstrated a strong social commitment to achieving equity and securing greater resources for their students, in a context of economic hardship.

> I want my kids to have the same access as other kids – they're just as good as other kids and they should have the same opportunities. Today my school has access, but I worry about all the other ones. (TELAR–IEARN coordinator in Tanti)

## Recommendations

During our research we learned a good deal about the difficulties facing schools in Argentina in their efforts to integrate technology, and these findings are quite likely applicable to schools in similar contexts throughout Latin America. The two case studies highlighted the individual challenges that each school and its education community faced and the way that they overcame these barriers to improve the education they offered their students.

On the basis of this research, we have prepared a series of recommendations to guide future attempts at creating and developing other projects for integrating educational technology.

- Establish clear goals for the programme, based on real life. Those goals must be flexible enough that schools can adapt the programme to their own institutional aims, their needs and those of their education community, as well as to the interests of their students.
- Plan to start out on a small scale and expand the programme over time, monitoring progress carefully and making changes and improvements as experience dictates.
- Select schools through competitions or calls for proposals, in which the school must demonstrate an institutional commitment to the use of ICTs in order to ensure that it has the willingness to undertake the work required.
- Plan for sufficient and ongoing technical and pedagogical training, either through attendance at courses or via the Internet. Such training should include instruction in computer maintenance for selected personnel.

- Create a programme based on the mother tongue or the most commonly used language of the students.
- Ensure that each school has the minimum resources needed to start working on the project and, if possible, a dedicated telephone line for the programme.
- Enlist the support of the school principal.
- Within the school setting, encourage the selection of teachers who have the leadership potential to coordinate the programme and be the first to receive training. As leaders, they will have to be trained to have a clear vision of the educational potential of the technology for their school, an overall vision of the process of integrating ICTs and of the changes that will promote that integration, so that they can select the appropriate strategy in each case.
- Develop a strategy to free up sufficient time for teachers and students. For teachers, this time must be available during the school day, while for students the approach may call for implementation either during class time or as an extracurricular extension of learning activity.
- Give teachers participating in the programme the flexibility to adapt the curriculum and experiment with it.
- Include activities to foster a supportive relationship between the school and the community.
- Provide sufficient financing at the outset and help the school, or some other local educational body, to develop strategies for self-financing and to promote public policies that will encourage cooperation from the private sector.
- Ensure continual monitoring of the schools participating in the project so as to learn from their experience and revise aspects of the programme if necessary.

One interesting fact with respect to these two schools is that in August 2000 they both applied to join the GEMS programme (Global Education Model Schools), an alliance between IEARN and the Schools Online organization, the purpose of which is to supply equipment to needy schools. Our two schools were awarded a laboratory with 10 latest-generation computers complete with Internet connections. These laboratories were installed during March 2001.

It would be interesting to monitor these schools and the other five schools in Argentina that received the same equipment in order to compare the impact of having more and better access to this technology.

## Notes

1. TELAR <http://www.telar.org>. In 1989 Daniel Reyes, principal of the Escuela de la Costa school in Puerto Madryn, province of Chubut, made contact with Peter Copen, president of the Copen Family Foundation (CFF) in New York, who at that time was supporting an initiative to link 10 US schools with 10 schools in Russia in order to improve the quality of education and promote understanding among students of the two countries. That experience was so successful that CFF decided to invite other countries to join the programme, under the motto "Connecting youth: Making a difference in the world". Daniel Reyes jumped to this challenge and became the creator and guiding spirit of the TELAR national network and a founding member of the international IEARN network. During 1993 and 1994 the Ministry of Culture and Education helped to extend IEARN and TELAR to nearly 500 schools under the Social Education Plan.
2. In 1993 Argentina adopted the Federal Education Act, aimed at reforming the education system to reduce bureaucracy, decentralize management to the provinces, and improve the quality, equity and efficiency of education in Argentina. A key aspect of this reform was to improve the level of education in poor and remote areas, where equipment was lacking, facilities were inadequate, teachers were unmotivated, and school dropout and failure rates were high. This portion of the Act was known as the Social Education Plan. It consisted of three principal programmes: (1) Better Education for All, (2) Better School Infrastructure, (3) Student Bursaries. By 1998 the Social Education Plan covered 12,000 schools and 3.5 million students at the primary and secondary levels.
3. IEARN <http://www.iearn.org>. IEARN was founded in the United States in 1990 by Peter Copen and started with a pilot project for connection and interchange between schools in Russia and the United States. The main objective of IEARN is to foster responsible, humane and spiritual growth and thereby enhance the welfare of regions, countries and the planet through telecommunications. IEARN has now linked schools, teachers and students in more than 90 countries. Through this network, schools can give their students and teachers the opportunity to get involved in cooperative projects in nearly all disciplines. These projects, which are proposed by teachers and students all over the world, can readily be integrated into the school curriculum.
4. Fundación Evolución was created in 1991 to provide a legal framework for the activities of the TELAR–IEARN network and the education programmes associated with them. Since that time, Fundación Evolución has coordinated, supported and promoted participation by Argentine schools in the TELAR–IEARN network. It also coordinates education programmes and interacts closely with schools in the network.
5. The fieldwork in these two schools was conducted in August 2000.

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# The social impact of the Internet at the local level

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# The social impact of introducing ICTs in local government and public services: Case studies in Buenos Aires and Montevideo

Susana Finquelievich, Silvia Lago Martínez, Alejandra Jara, Pablo Baumann, Alén Pérez Casas, Martín Zamalvide, Mariano Fressoli and Raquel Turrubiates

## Introduction: the reshaping of civil society

Civil society is in the process of reshaping itself. Computers have the potential for facilitating and continuously expanding the capacities of individuals within the institutions, businesses, organizations and governments where they work. The new information and communication technologies (ICTs) – the tools of the information society – are now working their way into all areas of activity: production, consumption, trade, administration, government, recreation, finance, business and education. Every sector of society now feels the need to find ways and means of seizing the opportunities offered by ICTs in order to enhance governance, to establish new communication channels between government and citizens, to create and strengthen community networks and to participate actively in the information society. "Citizen networks", "electronic government" and "digital cities" are commonplace expressions today. They refer to new forms of interaction between citizens and local governments and to new concepts of urban policy, using the electronic media.

The urban landscape, the built landscape as much as the social one, has been irreversibly transformed in the transition between millennia. As citizens, we have also undergone a profound transformation in our perception of space, of time, of politics, of what is public and what is private, and of what is local and what is global. As Tsagarousianou, Tambini and Bryan (1998) put it, the development of ICTs has been largely responsible for the changes now affecting our cities and our contemporary societies.

In terms of local policies, telecommunications has transformed our cities into nodes of communication and computer networking has brought changes in municipal governments that facilitate administration, communication and

interaction with other levels of government and with the citizenry. At the same time, civil society and regional and national authorities are experimenting with various versions of "electronic government".

"Electronic democracy", as a means for making public institutions more responsive and accountable, has attracted the interest of academics, politicians and social activists since the 1960s when, imbued with optimism and faith in the democratic potential of new technologies, activists introduced a wide variety of communication media (such as free or pirate radio stations). Since then, the many experiments with remote communications, teleconferencing and interactive cable television have sparked much debate about the advantages and hazards of these technologies in social and political life (Tsagarousianou et al. 1998).

The concept of online government is nothing new: indeed, it has been talked of since the beginning of the Internet. Since the mid-1980s, the development of computer networks has significantly altered the terms of the debate over the democratic use of new technologies. Writers such as Rheingold (1994) maintained that ICTs have the capacity to challenge the monopoly of the existing political class over the means of communication and to revitalize citizen-based democracy. They could, moreover, empower grassroots groups to collect information, organize citizen initiatives, change public opinion and influence national and local policies.

What is new is the way Internet technology has evolved: electronic government is now possible, at least technologically speaking. Most of the software needed is already available. The next step must be a thoughtful debate about how we wish to govern ourselves.

The emergence of electronic government at the local level poses a number of key questions:

- Citizens must be able to have access to electronic government services from whatever terminal they are using, whether it is old or new, private, in a cyber café or in a community technology centre.
- Citizens must have access to technological tools, both in physical terms (e.g. through telecentre networks) and through educational campaigns for using these instruments.
- Citizens and community organizations must have legally enshrined rights to communication.
- Citizens must participate in the decision-making process. We need to understand how direct participation by urban residents affects these processes, the degree to which citizen involvement can impact policies, legislation and actions of local governments, and the mechanisms through which it can be done.
- Models must be selected for offering electronic public services, involving the online provision of municipal and other services. This will require methods for ensuring security, encryption, access, record-keeping, etc.

- Models of communication between citizens and municipal officials must be selected. Here we must identify the best model for each situation and local culture: electronic forums, chat lines, combination with face-to-face meetings, and others.
- The content of public sites and portals must be defined. We must decide what kind of local, regional and national information should be included, how forums and chat rooms are to be administered in order to ensure dialogue between citizens and officials, and how much detail the projects posted on those sites should have.

For the most part, technological solutions to these problems already exist or are being developed. Much more important is the human and social side of this question. What will happen when the most common democratic practices – referendums, consultations, electronic voting, etc. – move to the Internet? Will this enhance the commitment of civil society and its participation in decisions that affect the quality of life and the rights of citizens? Will it make public management more transparent and efficient? If it is to do these things, this interactive space must become a shared community resource, publicly administered and accessible, in order to help improve public policies and community participation.

Many experiments with electronic democracy (including the two studied in this paper) share a number of characteristics:

- The social players who initiate or participate in them see them as ways of revitalizing democratic politics, which for a number of reasons has lost its strength and dynamism.
- They are perceived as ways of reducing bureaucracy and making government more transparent.
- They are local or regional in nature and are closely identified with urban or metropolitan territories.
- They are based on similar technological infrastructure.

This paper relates the results of research conducted by a joint Argentine –Uruguayan team (from the Gino Germani Research Institution, Faculty of Social Sciences, University of Buenos Aires and the Carrera de Sociología of the University of the Republic in Montevideo), which represents the first effort at research into this issue. The cities of Buenos Aires and Montevideo were selected for comparative case studies because their geographic and cultural proximity makes it easier to appreciate the differences and similarities in urban and social uses of these technologies.

Our general objective was to evaluate the social impact of introducing and using ICTs in local government and in communication with the citizenry, as well as in the activities of citizens organizations that are seeking to become interlocutors with the local government. We investigated the use and effective scope of ICTs in internal government management, as well as in local efforts

to integrate the population into the information society. We analyzed the use and scope of ICTs in communication between local governments and civil society, and we collected and processed data on the way community organizations use ICTs. We paid particular attention to designing a research methodology specific to the issue at hand. We used both primary and secondary data, including electronic surveys, face-to-face and electronic interviews with municipal authorities, monitoring the progress of municipal web pages, analyzing ICT plans and their implementation in both cities, and tracking the use of ICTs by community organizations through electronic media surveys and, in the case of Montevideo, through personal interviews.

A great deal of information was collected and processed in parallel for the two case studies. The researchers gave a public presentation of their work at a wrap-up event: the Binational Seminar on the Social Impact of ICTs in Buenos Aires and Montevideo, organized by the Infopolis Team from the Urban Studies Area of the Gino Germani Research Institute on April 17, 2001, in Buenos Aires. We hope that this first experiment in comparing the social impacts of ICTs in these two Latin American capitals will provide useful input for preparing policies and strategies to optimize those impacts and thereby improve the quality of life for their citizens.

## ICTs in local government

Today, thousands of cities of all sizes around the world have home pages on the World Wide Web and forums of city webmasters are being organized. There are also thousands of cities, not only in the developed world but also in a growing number of developing countries, that have invested in electronic government projects using networks that allow citizens to access city government structures, conduct online transactions, obtain information on local, regional and national policies, and participate in decisions concerning the urban habitat.

Experiments with electronic government began in the second half of the 1990s. In Europe, the Telecentres Project was created and financed by the European Community to help local governments acquire resources and expertise in applying ICTs to urban management. In the United States, electronic government has burgeoned as a way not only of facilitating local management but also of trying to overcome the "democratic deficit", i.e. the lack of citizen interest and commitment in public affairs.

Electronic government is not only an ambition of developed countries. Peripheral countries have begun to use ICTs to facilitate various government activities. Brazil was the first country in the Americas to introduce electronic voting and has now moved to eliminate paper in sending draft legislation and the texts of decrees between the head of state and government ministers. This programme, dubbed "electronic government", seeks to use the Internet to reduce the bureaucratic red tape that encumbers communication between the different areas of government. It also seeks to make document circulation

swifter and more secure, thereby reducing administrative costs. For the last two years, Brazilians have been using the Internet to file their tax returns and to access their bank accounts. And electronic voting was an astounding success in the municipal elections of October 2000 <http://www.clarin.com.ar/diario.2001-01-05/I-0420.htm>.

It is not just a question of setting up portals or web sites with government data, or of facilitating internal procedures. Electronic government means putting government – national, regional or local – on the Internet as a way of transforming political and institutional culture and allowing citizens to obtain information of interest to them. Yet, if these sites and other similar administrative tools are to be really viable, all citizens will need to have the know-how to navigate over the Internet, they must have access to the necessary hardware, either at home or in telecentres or other public facilities, and information must be secure as it makes its way through cyberspace. There must also be adequate dialogue with citizen networks which are now taking on great importance.

## Buenos Aires: do online services mean electronic government?

There has been much discussion of the issue of governance since the 1970s. In the last decade, a number of writers have analyzed the issue from a broader perspective. They have sought to expand the concept of governance to embrace a whole set of social factors and the international political and economic context in which they operate, "to focus thinking on the variables that determine the relationship of the state with all economic bodies and public authorities and its interaction with organized civil society, the economy and the marketplace" (Filmus 1999). These variables are essential for achieving consensus or forming "stabilizing majorities".

The idea of local governance put forward here highlights its political dimension and focuses the debate on the interdependence between the state and civil society. The underlying assumption is that if the many interests of civil society are not organized it will be impossible to guarantee good governance.

National and local governments have adopted varying policies for the use of ICTs with the intention, declared or tacit, of responding directly or indirectly to problems of governance. ICTs are a key element of government decentralization policies. The assumption is that using ICTs can enhance the efficiency and transparency of government and of its communication with the citizenry by giving reality to the ideas of accountability, predictability and honesty. This also implies decodifying technical language into a language that is accessible to ordinary citizens.

Consequently, in their political action, municipal governments face a great need to search for alternatives to the traditional models of public management. This search involves a number of challenges, including that of opening or

improving channels for participation in consensus building and of modernizing management technology.

This discussion focuses on three major issues:

(a) The impact of ICTs on the government of the city of Buenos Aires, specifically on its legislative body and the agencies responsible for decentralizing the city administration
(b) The impact of ICTs on the channels of interaction and participation between the city and its citizens, in terms of the services offered by government and the demands presented by community organizations
(c) The local government programme for facilitating public access to the Internet for all citizens

## The executive and the decentralization and modernization programme

The government of the city of Buenos Aires (GCBA) is an excellent case in point: the process of decentralizing and deconcentrating city management, which began in 1996 when the city adopted its constitution and created the post of head of government, has provided fertile new ground for the introduction of ICTs. This process involves the creation of management and participation centres (known by the Spanish acronym CGP, for ***Centros de Gestión y Participación***) as political and administrative management units with clearly defined geographic responsibilities, based on a decentralization and modernization programme that calls for introducing ICTs and involving the community in city management. One of the most important aspects of decentralization is to give the citizenry a more active role. Technology is a key dimension here, as a means of "permitting citizens to enjoy greater access and participation in government decision-making through the use of computer and telephone networks".

Our information-gathering activities involved a series of interviews with officials in the Department of Decentralization and Modernization and with managers and employees of the CGPs, as well as the examination of internal documents produced to that time. We selected 5 CGPs out of a total of 16, where we conducted qualitative research through interviews, observation, and analysis of the GCBA web sites. Our fieldwork was conducted between June and September 2000.

## Main players and activities

The programme called for the computerization of the CGPs by 1998, creating a communication network (intranet), developing a hotline for citizens' complaints employing Internet-compatible technologies and technical training, and selecting staff to operate the information system in the centres.

The current situation, however, falls considerably short of expectations, and the programme has been completed only in part. The complaint system is up and running, but the intranet has not yet been installed. Some comments from the interviews are highly revealing:

> People enter their complaints online. This is not an intranet, it is simply Internet. The access is by telephone line through the Internet to the page of the server that the. . . I don't know where it is, I guess it must be a server for GCBA. . . The idea is to have an intranet. Now this is going to be something they call a "single window system" with 10 machines. They will all be online, and the GCBA will provide them. . .

The definition used for the complaint system is confusing. It has several different names and it is not clear whether it is an intranet. While the state of progress with the complaint system was not uniform and, at the time of our research, it was in the process of migrating from one system to another, it is significant that every person interviewed had a different definition for it. This can also be explained by the failure to provide proper training in using the computer and the networks – no one is sure what the operating system is. The centres do not have anyone assigned or trained for using the tools, and in some CGPs the problem is left to whoever has the interest and skills:

> Here we have no one with any technical training. I never took a PC course, I know something because I'm interested in the issue myself and I read up on it. There's a decentralization group that has some expertise, but they only come here when there's an emergency and they have 16 CGPs to look after.

Little use is made of the Internet for communicating between the centres and the department. Most people prefer to use the telephone. The GCBA site has a link to the CGPs, where each centre provides information on services and activities and the e-mail addresses of its directors. The CGPs are not involved in designing the web page or its content, and merely provides information to be posted on the site. There is no possibility of interaction with local residents or with community organizations; e-mail is the only means available, and it is seldom used.

Communication with local residents and publicity about services and activities are channelled through conventional means: telephone, letters, public assemblies, committee meetings and the press. Strategies revolve around communicating with neighbourhood or ***barrio*** associations, business organizations, educational and other institutions, such as local FM stations. There are invitations to participate in workshops or discussions on priority issues, visits to associations, occasional groups of associations that work on a specific problem, and other equally conventional approaches. The possibility of using the Internet more intensively and extensively is impeded, according

to the leaders we interviewed, by the restrictions on "local residents", limited Internet access for lower-income groups, the age factor, and lack of skills and initiative, among other things.

Even so, the introduction of ICTs is viewed positively, but as something for an indefinite future when conditions will be ripe for massive use, when the public will be more accustomed and local government will have better-defined and more appropriate strategies in place. According to our interviews, the use of ICTs as a tool for citizen participation is "a work in progress", "people aren't used to it", "the barrio dwellers don't really know what it is", "they aren't in a position . . . ". As to how to resolve this problem, there are no clear answers. It might be addressed by a government body, but the real prospects of local government through the CGPs are still remote, for want of equipment, space, human and material resources, and a specific policy. The possibility of mounting joint projects with community organizations is not seen as an alternative: government and organizations do not work together for this purpose. Although three CGPs are conducting an experiment with free Internet access (discussed further below), it is not sponsored by them but by other government agencies that are using only the physical premises of the centre; the technology access centres are not involved in the activities of the CGPs.

In short, the CGPs have been computerized, but their performance is uneven; in some cases they face technological problems and in most cases even the available equipment is underused. Some of the objectives set out in 1998 are now starting to be implemented (such as the intranet), while others have not yet begun (the single complaints window). Nevertheless, the Internet has made a significant difference in the handling of citizen complaints over problems with facilities and services, and it has had a positive impact on the responsiveness of the system.

Communication and linkages between the executive and the decentralized units are highly tenuous. There is virtually no communication through ICTs within the central organization, nor does it take part in the GCBA site. It is clear that decisions were taken "from the top down", without involving the CGPs. As a result, installed capacity is underused and there is a lack of training and proper support. Without a greater commitment on the part of the executive bodies, it will be difficult to achieve the organizational changes needed to optimize the use of these technologies.

The introduction of technology in the decentralization process has been slow and there has been little experimentation with citizen participation through ICTs. Internet tools are still not adequately used for communicating with citizens and community organizations, although some centres have undertaken innovative experiments, generally at individual rather than institutional initiative. For example, CGP No. 13 has created its own community access centre, although it is small. For the most part, however, there is little linkage to local government through the CGPs and communication technologies are not being used to strengthen that relationship,

to request information or to encourage participation; and indeed they are not even viewed as alternatives for this purpose in the short run.

Activities targeted at the community reflect for the most part individual or group initiatives, rather than institutional strategies. Although the directors have a positive attitude about the Internet as a means of dissemination and communication, this has not translated into any clear view as to how to promote participation and to channel demands in this sense. The lack of any strategy or policy in this regard is glaring.

The recent political and legal changes in the city of Buenos Aires have undoubtedly opened the way to creating new public spaces for making greater use of ICTs in the local government. This "virtual" public space for community participation in management requires not only a declaration of political will on the part of the local government (as expressed in documents from the Department of Decentralization and Modernization), placing information at the service of citizens, or a political will on the part of citizens; it also requires an open institutional culture, a transparent flow of information and receptiveness to community participation in local government. Making information available to citizens through ICTs involves, above all, learning how to use the tools and changing perceptions about the use and the potential of these tools on the part of the managers themselves, starting with the executive.

## The city of Buenos Aires web page

We analyzed this page <http://www.buenosaires.gov.ar> from the viewpoint of the functionalist theory of communication and the general theory of hypertext. We examined the content as well as the graphic design, monitoring the page at intervals of two weeks. The home page offers a succinct map of the site, with information that is updated daily and takes the form essentially of press releases. The other pages contain static information, or data that are updated less frequently.

The team that designed the Buenos Aires page has given it animation and a wealth of graphics. Nevertheless, the page is presented as a kind of entry portal, with a series of links that are not very successful at optimizing communication and dissemination. It is divided into a dynamic portion, which is updated daily, where press releases and institutional notices are posted, and another portion in which agencies are allotted space to post information.

Most of the internal links include a short presentation on the objectives of their particular area of government, as well as more specialized information that ranges from institutional data to useful facts for citizens (such as procedures or the "How do I . . . " guide, which, however, do not allow forms to be filed online) and tourism information for promoting the city abroad. For example, the Health Department's site, which belongs to the portal, has information of various kinds, including the health by-law of the city of Buenos Aires and a vaccination calendar. Some of these links allow

the user to send e-mail messages to health programmes, for example, or to include addresses for the authorities; most of the links are similar in this regard. The most complete links, in terms of volume of information and interactivity, are those for education, health and culture.

There are noteworthy sections on the city's strategic plans, which offer the possibility of interaction, and from the Public Defender or ombudsman <http://www.buenosaires.gov.ar/defensoria/sec_defensoria_defensoria.asp>, which offers citizens the services of an institution "whose mission is to protect them from arbitrary acts, abuse of power and errors of the public administration, as well as to respond to the concerns of those who feel themselves the victims of abuse, negligence or irregularities". The section entitled "Internet services 2000" <http://www.buenosaires.gov.ar/internet2000/centros_inter2000.asp> leads to the publicly accessible Technology Centres 2000 (more on this later).

The interactive portal comes close to the concept of electronic government providing prompt information on various internal links to the entire city site. This portal allows bibliographic consultations and documentation provided by city libraries and the teaching library; it provides information on schools, facts about the city (including which CGP serves a particular neighbourhood) a hospitals map, hotel listings by category, a list of the neighbourhoods or districts (***barrios***) of the city with a map of each one, pictures of the city, etc. In terms of institutional information, it offers back issues of the ***Municipal Bulletin***, a directory of city government officials with a short biography and e-mail address for each, a guide to names authorized by the civil registry, and a procedural guide that does not, however, provide any information beyond what can be obtained in a brochure from the CGPs.

As Fanta (2000) explains, in terms of their application, the tools of electronic government can be divided into successive stages incorporating new elements that make for more complete interactivity between user and government over the web page. These stages can be described as follows:

- First stage: a "procedural map" of the various public services available in terms of basic information (with a "procedural booklet" that can be printed out).
- Second stage: the most widely used official forms can be printed from the web site to speed up processing (when the procedure requires a form to be completed).
- Third stage: the intention is to make it possible to conduct procedures electronically and complete transactions online. This presupposes automating these procedures.
- Fourth stage: the objective here is to provide a single electronic window for city procedures, bringing together a number of services in one place. It will also include the ability for consulting information on public procurement.

The web page of GCBA is now at the first stage of progress towards electronic government. The interactive portal offers a procedural guide that explains the features and requirements for a series of formalities, among which the user may choose, as well as the address and office hours at which they can be conducted. This first stage is limited to providing the information needed to begin procedures, but it does not allow any other kind of interactivity, except the possibility of sending e-mail to the webmaster and to officials. The current situation stands in contrast to official pronouncements of the government, according to which the city's electronic government will be the most widely used in the country by 2003.

## Computerizing the Legislature of the city of Buenos Aires

We examine here the viewpoints of politicians involved in introducing ICTs into the Buenos Aires Legislature, comparing achievements, progress, obstacles and delays in light of the plans set forth in the modernization programme. To do this, we reviewed newspaper articles on the process of modernizing the Legislature and monitored the Legislature's web site on a weekly basis for updates. We attended two sessions as observers. We traced, obtained and examined printed documents and web sites linked to the Legislature computerization programme. And finally we interviewed authorities and officials of the Legislature in depth.

The Legislature of Buenos Aires was established on December 10, 1997, following the elections in October that year, and marked the beginning of the city's political autonomy. Its initial sessions were held in the General San Martin Cultural Centre. On March 8, 1999, they were moved to the refurbished building of the former Deliberative Council of the city, a body of which the public had become highly sceptical because of repeated incidents of corruption, ineffectiveness and inefficiency.

To differentiate itself from the Deliberative Council, the Legislature decided to give a modern and dynamic profile to its work and to ensure greater transparency in its activities and its expenditures. A modernization programme was adopted to this end, through the Parliamentary Works Commission, entrusted to a management group consisting of two deputies from each parliamentary faction, administrative authorities, technical experts and professionals. This group began work in March 1998, with the objective of establishing organizational guidelines for the Legislature, and completed its task on October 28, 1998, with presentation of a report[1] to the Commission.

The modernization programme, which was to be a systemic undertaking, proved to be stillborn. In fact it generated mainly indifference and a degree of resistance and incomprehension among legislators. As soon as it was presented, the management group was dissolved, and the continuity proposed in the document was never achieved. Electoral campaigns and political emergencies completed the job of burying the document. Efforts at modernization continued but, divorced from the work of that group, they

lost sight of the original spirit of the initiative and became increasingly sporadic.

One innovation with respect to the use of ICTs in the Legislature was to install a central computer system of the latest generation to manage services in the Legislative Palace, transforming it into a "smart building". This was done at the same time as the restoration work, between December 1998 and November 1999. The system allows for synchronized control of lighting, air conditioning, fire detection and extinguishing, monitoring of elevators, and surveillance of access points and corridors of the building with closed-circuit cameras. The Legislature has also been computerized and equipped with an internal network. Each of the 60 councillors' desks has access to the Internet and intranet, and every legislator has a notebook that can be connected to the networks. A high-definition televsion system was installed to transmit sessions over closed circuit, and they can also be transmitted by the Internet. From our observation of two sessions, we found that only 12 of the 56 legislators present had notebooks on their desks in one session, and only 9 of 53 in the second session. Very few legislators use their notebooks to carry or retrieve information for debates or to communicate with their advisers.

The intranet has run into a number of problems and delays. While the physical structure is installed and well equipped and dimensioned, there have been bottlenecks in terms of content and services. The equipment is of the latest generation and includes about 800 personal computers, most of them Pentium 2 and 3. Most of this equipment was acquired with a loan of US$6 million from the Inter-American Development Bank to the city government, a portion of which was earmarked for equipping the Legislature with computers.

Despite this sound infrastructure in terms of hardware and software, the content merely duplicates that of the Internet web page. It is reduced to a merely informative page, the content of which is managed by the Office of Press and Communications. User services are limited to the provision and maintenance of some 400 e-mail accounts. The page cannot be accessed through the Internet, but only from a terminal connected to the internal network.

There are a number of obstacles impeding development of the Legislature's intranet. One of them is the lack of trained personnel. The Legislature called for tenders to provide training for all positions, from the lowest to the most senior managers, but for internal reasons only the lower categories were covered. The technical training of staff is therefore inadequate to meet needs and demands in terms of skills and qualifications.

In addition, too many staff members are assigned to the "help desk". The General Systems Directorate has 25 employees, most of whom are dedicated to maintenance and technical support for the network's 600 terminals, and there are few staff resources available for designing and developing new applications.

The previous networks (those that existed before the intranet was established) have been retained, and there are still "private" networks, holdovers from the old Council, that have resisted integration, such as those of the Parliamentary Bureau Commission[2] and CEDOM.[3]

The survival of outdated practices and closed information circuits is another obstacle: the existence of an intranet on which classified information can be published, against the persistence of conventional information circuits, and the failure to establish user profiles with differentiated access mean that there is virtually no demand for services from the intranet. The situation is made worse by the fact that many legislators and officials are unaware of what an intranet really is.

Yet, another reason is the rapid growth of the Internet site, which is used as an information source instead of the almost useless intranet. Furthermore, content on the intranet is administered exclusively by the Press Office. This means that the intranet serves merely for information purposes and is not interactive.

## The Legislature's web site

In January 1999, the Legislature was officially placed online, at <http://www.legislatura.gov.ar>, at the initiative of the Administrative Secretariat, the Press and Communications Office and the General Systems Directorate, which was responsible for implementing and updating it. Originally the design, maintenance and updating were contracted out to an external supplier. This was done simultaneously with the re-inauguration, in March 1999, of the old Deliberative Council building as a smart building. These events were accompanied by an active press campaign,[4] intended to portray the Legislature as a modern political institution that was efficient, transparent and participatory, in contrast to its predecessor.

The design and the architecture of the web site remained unchanged until December 1999, except for updates to its content. In itself the site was innovative, attractive in its design, and it held the promise of interaction between citizens and legislators (Baumann 2000). It had an informative section, under the headings "Know your Legislature" (information on the Legislature's history and functions), "Legislative activity" (information on sessions and draft bills tabled) and "CEDOM" (access to the municipal Documentation Centre database, the ***Municipal Digest*** and summaries of the sessions). Other sections allowed for greater citizen participation: "Live transmission" and "Legislature network". The latter page announced services that heralded an overall attempt at electronic democracy and citizen participation through ICTs: chats with legislators, discussion group lists, debating forums and on line surveys. Yet this site lasted less than a year, and the many innovations expected of it turned out to be empty promises.

Why were services announced that never materialized? The explanations offered point to the fact that the design and updating of the site were contracted out, its content was solely informative and was not well adapted to the needs

and information habits of the Legislature. While the page contained features for searching legislation, interaction, etc., they were designed in ways that did not work. It was never possible to carry live sessions because the Legislature did not have the proper bandwidth. Moreover, not only were the legislators for the most part unfamiliar with using such tools (Herzer and Kisilevsky 2000), they knew little of their purposes and were frequently hostile to the initiative. Nor were there any internal mechanisms for legislators to participate in chat rooms or forums, and no coordinator for such activities was appointed.

This initial page had objectives that the Legislature was unable to meet, technologically, institutionally or organizationally. Why were such tools announced when it was impossible to implement them with existing resources? Probably because officials had to time their announcements with the inauguration of the new smart building, hoping that a drastic change of image would serve to distance them from the old Deliberative Council and its unfortunate reputation.

In December 1999 the interface and content of the page were redesigned, and it was placed directly in the hands of the Office of Press and Communications. Its design is now more austere and sober, and its architecture is sounder. Nevertheless, it has lost its interactive tools, such as the chat room, the discussion group lists and the surveys. Currently it receives about 600 visits a week, most of them from journalists and news agencies, lawyers and solicitors and, to a lesser extent, non-governmental organisations (NGOs). This "second site" differs from its predecessor in that it contains greater and more up-to-date information and it is easily navigable, with double entry (from above and from the left). Yet, paradoxically, it repeats some of the mistakes of the earlier version: it announces interactive services that in fact do not exist, such as live transmission and forums. Bandwidth is no longer a problem since it has been increased from 256 to 512 Kbps and the reference rate had been planned to reach 1 Mbps by June or July 2001.

## The impact of modernization on the Buenos Aires Legislature

The process of modernizing the Legislature has had some successes and some setbacks, some breakdowns and some continuities. These results (still partial) have had an impact on local government management as well as on public services, the two being intimately linked. An initial impact on management has been to generate resistance and conflict, especially since introduction of the technologies was not accompanied by any effort at institutional modernization embracing all areas of government. A second impact has been "to generate greater commitment, new kinds of cooperation and organization", which have made for greater efficiency in carrying out the institutional mandate. The third impact has been greater availability of information, both for members of the institution and for the citizenry at large. The fourth impact is negative: it may well lead to greater scepticism and apathy, and serve to

impede rather than encourage citizen participation. This relates to the "delay in making available the instruments for effective citizen participation" – the fact that some tools were promised but never delivered (live transmission, forums, chat rooms) and that other tools were ignored (applications to public hearings, the Strategic Plan, articulation with the government decentralization programme etc.). It would be well if the Legislature were to turn its attention to the organizational guidelines proposed by the management group so as to create real synergy in efforts to strengthen the projects now underway and prevent them from collapsing or interfering with each other.

The effort to bring the citizens of Buenos Aires into the information society has moved out of government offices and into the ***barrios***, offering an innovative service: we refer to the Technology Centres 2000 programme of GCBA. This provides citizens with free access to informational tools, but it does not foster citizen participation.

## The Technology Centres 2000 programme of GCBA

This experiment arose at the initiative of a small group of officials from GCBA. Essentially it provides free Internet access to citizens through computer terminals located in public places around the city. These places are known as Technology Centres 2000 (CT 2000). The initiative reflects the local government's intentions to provide equitable public access to the technologies and benefits of the information society. Based on the techniques used in telecentres (Gómez et al. 1999), they are designed as "civic telecentres" offering public access to the Internet at libraries, schools, universities, community organizations and other civic facilities. The key feature of these centres is not the telecentre activity itself, but rather that it is integrated with other cultural, educational and recreational services provided at the same place.

We explored these centres between June and August 2000. We were able to cover all the centres that were in operation at that time (i.e. eight out of the current nine). We took a combined qualitative–quantitative approach, using interviews, non-participatory observation and surveys. The open interviews were conducted with technical advisers and users at the centres. Observations were carried out at all the centres using a standardized observation format. We surveyed 100 individual users, employing a structured questionnaire. In our analysis we used a triangulation approach, contrasting results from the survey with statistical data from the Office of Information Structures and Systems. This methodology made it possible to cover all players and to observe the interaction among them and with the institutional environment.

The CT 2000 are set up in CGPs and public libraries, institutions that are thoroughly rooted in their neighbourhood and have existing infrastructure, although the computer equipment had to be installed specifically for this project. They are integrated into the regular services and activities of CGPs, and access to their facilities is circumscribed by the CGP's general operating

standards. The centres are located in different districts of the city. They serve a diverse population in terms of people's economic and social levels (ranging from the working-class La Boca to the rarefied preserve of Belgrano), their sense of identity with the neighbourhood, their age, sex, motivations and interests, and their familiarity with computers, etc. The centres located in libraries have three computers, while those in the CGPs have between 14 and 18 terminals, connected in a network. Users take turns at the equipment and are assisted by technical advisers from the same office. There are no printers for public use, nor are people allowed to use diskettes, for fear of viruses. No training is provided, but assistance is available for navigating and using e-mail. Interest is very high throughout the day, and anywhere from 25 to 120 people may be served, depending on the equipment available.

Most visitors to these centres are males: the gender ratio during the period observed was 59 percent males and 41 percent females. Most of the users at the CT 2000 are teenagers and young adults, with the majority of users being 16 or younger. Most users are students, mainly from high schools. Among the non-student population, we identified workers, professionals and the unemployed.

The most frequently used services are e-mail (particularly popular among young adults) and chat rooms (used mainly by children and adolescents). A significant portion of users (40 percent) come to the CT 2000 a couple of times a week (frequent users are considered as those who come every day, twice a week or once a week). The greatest number of occasional users is in the age group of 17 to 26 years. Most people access the Internet from public places or organisations (CT 2000, cyber cafés, place of study or place of work).

In short, the information we obtained, together with statistics from the DGE and the SI, reveals the following user profile: children and students, with a certain facility at using the Internet. The younger ones tend to chat and the older ones use the e-mail. They typically do not have Internet access at home or at their place of study or work. The CT 2000 represents for them the ideal place to connect to the Internet.

In terms of meeting its objectives, the programme is a success since it attracts high attendance and provides free access to the Internet, especially for children and youths who would otherwise be unable to do so. Yet there is no training offered, users cannot participate in the planning of the project, and it does little to facilitate interaction between the community and the local government. The project has not been designed with the social and cultural setting in mind. The context is rigid: the physical environment in most cases is not very appealing; and there is no link between the activities of the host institution and those of the CT 2000, with activity beginning and ending with a turn at the computer terminal.

The feature that separates a private telecentre from the model we examined is that the latter is free, but this is not enough to regard it as a social project for permitting access to the information society by the most disadvantaged

groups. Experience with telecentres in other countries, although it has not been thoroughly assessed in terms of their social impact, suggests that "the telecentre becomes a social project when it is integrated into a neighbourhood and offers a place where members of the community feel at home, with strong participation in the centre's activities and management, and with the possibility of generating local promoters who can put it on a self-sustaining basis".[5]

## Does Buenos Aires have electronic government?

We return now to the original question: do online services constitute electronic government? The answer would seem to be negative. GCBA, as noted earlier, is in urgent need of alternatives to the traditional models of public management. These alternatives involve a series of new issues that must be addressed, including the question of governance and the related question of opening or improving channels of participation and of consensus building, as well as modernizing the technology of management.

The political and legal changes to GCBA would seem to be opening new spaces for participation through the use of ICTs. But if this public space, whether physical or virtual, is really to lead to community participation in city management, then before the various bodies of government are equipped with computers there will need to be a thorough transformation of the institutional and political culture to make it more transparent in terms of information flows and more open to community participation in local management. On the other hand, making information available to citizens through ICTs requires, above all, an understanding of the tools involved and a change in perceptions as to the potential uses of these media on the part of managers themselves, beginning with the executive. It also implies providing training in computer tools and changing the way the public views their use and potential, which will require massive information campaigns.

There is a link between government policies regarding Internet use and actions by the governing class to interact more closely with the public through new forms of participation. From the institutional viewpoint, electronic government has some serious limitations: politicians and government staff are not much in favour of using ICTs. They see the portal as a channel for publicizing their institutions and the web page as nothing more than an electronic bulletin board. They are not interested in interaction with citizens, and they offer the public no alternative channels of communication such as chat rooms or discussion forums. At the same time, there is a low level of ICT penetration among the citizenry in terms of interaction with government and citizen participation. Our research shows that government policies and pronouncements about "modernization" through the use of the Internet are not linked to efforts of the governing class to interact more closely with the citizens through new forms of participation.

## Computerizing the *Intendencia Municipal* of Montevideo

The ***Intendencia Municipal*** (municipal government) of Montevideo (IMM) governs the smallest but most populous (1,344,839) part of Uruguay. Montevideo is the capital of the country and the seat of the MERCOSUR Secretariat. IMM is governed by an Executive Council consisting of the ***Intendente*** or mayor, the General Secretariat, 7 departments, the Central Planning Unit and 18 local councils (***Juntas Locales*** or ***Comisiones Especiales Delegadas***). The legislative body is the ***Junta Departamental***, made up of 31 councillors.

The city has been governed since 1990 by a leftist coalition known as the ***Frente Amplio*** (Broad Front), which has won three successive elections and has undertaken a series of political and organizational reforms that have met with public approval. According to recent surveys, 76 percent of the city residents feel that the city is better run than it was 10 years ago. Fifty-three percent approve of the job done by the re-elected mayor, Mariano Arana, compared with a 20 percent disapproval rating.[6]

One of the fundamental transformations brought to the city's management and government was the decentralization policy, which has involved a series of political and administrative changes and the reorganization of services. While the process began in 1990, it was only in December 1993 that the local political bodies were established, together with the neighbourhood councils, as instances of social participation. Each of the city's 18 zones has a local ***junta*** or board that is responsible for programming, managing and controlling local public works and planning; a neighbourhood council, which provides social input to the identification of local needs and priorities and allows participatory surveillance over planning; and a district community centre (***Centro Comunal Zonal***, CCZ) in which decentralized administration and services are focused.

The origins of the project for computerizing IMM date back to the 1970s, when mainframe computers were introduced, essentially for registering and printing invoices in real time. This was one of the first such services in the country. It was undertaken, however, as a one time initiative and was not part of any overall computerization plan so that by the end of the 1980s there had still been no major investment in this area.

When the ***Frente Amplio*** came to power in 1990, it assessed the need for computerizing management within the municipal government as a way of integrating the city's various departments and functions. The Central Computer Service of the University of the Republic was asked to advise on the strategy for computerizing the municipal government. As a result of its recommendations, the position of Director of Computer Services was created, and it has been held by the same official since that time.

In late 1992 tenders were called for hardware and software, and a start was made at installing a computer system in IMM. The objective was to streamline and standardize procedures and provide up-to-date information

to the authorities. The computerization plan, however, made no provision for coordinating these innovations with initiatives at citizen participation. The computerization process was undertaken at the same time as the decentralization plan and the creation of the CCZs. No attempt was made, though, to build on participatory experience with the use of ICTs. As far as the CCZs were concerned, ICTs were to be used strictly for management by IMM, and not as tools for communicating with local residents. One of the arguments that emerged from interviews was that "we could not foresee how important these technologies would become at the time we were planning the process".

### Systems installed

By the end of the 1990s IMM had a computer system made up of the following components:

- Supply Management System: Introduced in 1997, it integrates goods and services procurement, works contracting and warehouse management.
- Human Resources System: The first version was introduced in 1994 and the second in 1999. It is a comprehensive computer system that includes all functionalities relating to human resources within IMM (payroll, work records, licences, social benefits, etc.).
- Financial System: Introduced in 1998, it is used for budget management and treasury operations: payment of salaries, revenue management, payment to creditors and cash movements. With this innovation, the Court of Accounts can audit the system directly.
- The Municipal Archives System: Introduced in 1997, it allows for data entry, preparation of statistics and document storage as well as providing warning of overdue documents. It is fully compatible with the Internet. It contains more than 100,000 active documents and 125,000 filed documents.

### Problems and potentials

One of the major difficulties with the computerized system was the lack of training of the officials who had to use it. Those interviewed agreed that the disparity in the pace at which the various sections and divisions were able to introduce and use the tools reflected the different levels of skills among the officials using them. Age appears to have been a key factor in the pace at which the new technologies were introduced: younger officials were able to adapt and use the system more swiftly, while older officials appeared more resistant to the new procedures. One person interviewed commented: "Some officials prefer to look for physical files before they attempt to search through the system." This lack of training also produced problems within the system,

where there were frequent errors in entering data. Although the quality and functioning of the systems were judged positively, the fact that many municipal employees had no training was an obstacle to optimal functioning.

The situation in terms of hardware is very uneven. While there is an overall master plan for computering IMM, the pace of equipping the different sections and divisions can be "speeded up" on request. The sections that show the greatest interest in working with the tools request the most equipment and therefore have the greatest number of computers. In some divisions, according to our interviews, as soon as the computers were installed "they asked for an extra employee to run them since it was felt that this was not the job of the existing staff".

In this process, the CCZs became recognized as "the municipal offices closest to the barrios". Having an integrated computer system means that some procedures could be handled in the CCZ. Nevertheless, most procedures still involve going to an office of IMM – they cannot be conducted online. It is possible, however, to consult a file through the IMM web site, and to print duplicate invoices for the various municipal taxes.

While the process of computerizing IMM was pursued in parallel with the creation of the CCZs as decentralized administrative and political bodies, there was no convergence between these two processes. The purpose of computerization was to improve management, but the system does not allow procedures to be conducted online. While at the time the plan was drawn up the potential impact of ICTs on daily life was not fully appreciated, there was no subsequent attempt to make more use of them in interaction with local residents. This is clear from the history of the IMM web site.

### The IMM web site

The history of the IMM web site sheds light on the way ICTs were introduced into the municipal sphere. The origin of the web page had nothing to do with strategic planning, unlike the computerization initiative. It arose from a proposal submitted in response to the Capital Fund (*Fondo Capital*), which sponsored competitions for artistic and cultural activities. A proposal to prepare a web site with information on the city of Montevideo was submitted and selected. With that project, a start was made at developing the IMM page. Maintenance of the site was in the hands of the IMM Press and Communications Service, the body responsible for communicating notices from the IMM to the press, preparing press summaries for IMM, coordinating with the municipal television channel and preparing the web page.

The web page was initially supported by outside personnel who were related to the sponsors of the winning project. Gradually it came fully under the responsibility of municipal employees in this division, who undertook the needed training, and other IMM personnel who had training in the area. The page has been online since 1998. According to interviews and our on-site analysis, the initial function assigned to the page was to provide

information about the city, especially to people abroad. As time went by, it came to include services provided by the different units and offices of IMM.

The web page team of the Press and Communications Service is responsible for information, press credentials, events of the week, information on the staff working in the mayor's office, speeches of the mayor, the static portion of the page and coordination of the different groups who contribute independently to its content (e.g. the Geographic Information Service, which provides online data aimed at professionals, and the Computer Node, which is responsible for file consultations and online duplication of invoices). The office has institutional responsibility for the page, and its role involves coordinating the contributions of the various units. Yet the team has little input in creating content, and it is dependent on contributions from the various groups.

Participation in the web page depends on the familiarity of each unit with the use of the tool. This varies from units that have developed complex projects on the Web – such as the online geographic information service or online access to the city's photograph archives, which required setting up working teams – to units that, according to our interviews, "have to be pushed to make any contribution". The content of the page is updated daily, especially the activities notices and information about IMM.

One of the most important changes has been the use of ICTs for distributing information on the IMM to the news media. This service, which used to involve the distribution of printed press releases, has been completely digitized since July 13, 2000. Site visit data show that from January through June 30, 2000, there were 38,438 visits, although that figure does not reveal where the page is accessed from: within IMM, within Montevideo or outside the country. While e-mail can be received from users, at the time we conducted our research a system for receiving suggestions and answering e-mail messages was still in preparation.

The web page offers information on the activities of the CCZs, as well as the e-mail addresses of municipal authorities, councillors and managers of the CCZs. We found no services that allowed for interactivity with citizens, nor did we detect any effort to foster participation by this means: the system merely provides information – lots of it – for encouraging participation through "conventional" channels.

From our interviews, we concluded that the managers take a positive view of the web page's potential for participation, although there is as yet no clear idea of how to implement this. They feel that they have begun to reap the fruits of the computerization effort of the last 10 years. Yet the priority in terms of communications is accorded to the city television channel, both in terms of resources and investment: there is now a plan to send the signal by satellite. When we asked one manager why the content and services offered at the web site were not being transmitted, he replied that "we don't have the necessary bandwidth and we're afraid that if there are too many visits the system will crash". It was suggested that this problem would be resolved once a clear transmission policy is in place for the web site.

Opinions are divided as to the impact that ICTs may have on the level of citizen participation. There is a fear, which came out clearly in the interviews, that ICTs might replace the traditional means of "face-to-face" participation, which are viewed as essential for maintaining community cohesion. This is consistent with the decentralization policies of the municipal government over the last 10 years and with the characteristics of the information found on the web page as it relates to this kind of activity. This view goes hand-in-hand with the perception of ICTs as a relatively economical way of advertising the city's potential abroad to tourists and investors, rather than as a tool for fostering greater interaction. The national government and the municipal authorities seem to have the same view of the potential of this technology.

In the case of Montevideo, the potential of the use of ICTs is clear in the high number of homes (26 percent[7]) equipped with computers and Internet connections. They provide a solid "material base" for fostering participation through new communication technologies. While such households are for the most part at the higher educational and income levels, they constitute a significant portion of the city's population. This figure does not include facilities offering public access to these technologies.

## Electronic government in Montevideo

The process of computerizing IMM is now relatively mature, having begun (although somewhat sporadically) at the end of the 1970s, although it was not until the ***Frente Amplio*** came to power in 1990 that attention turned to computerizing management within the IMM in order to integrate the various departments and functions. Almost a decade later, computerization was undertaken in Buenos Aires, at the same time as the decentralization plan there, although the programmes were not interconnected or managed with a common goal.

Computerization of IMM was undertaken for administrative purposes. It was not designed as a means of communicating with citizens and was not coordinated with initiatives at participation through the use of ICTs. The use of ICTs in the CCZs was seen as relating to management of IMM, not as a tool of communication with residents. This is clear in the design of the web page, which was not the product of any strategy for communicating between organizations or with citizens but sprang from an individual initiative for an artistic and cultural project.

Despite favourable circumstances – in terms of the attitude and strategies of the national government for using ICTs as a means of economic and cultural growth as well as the high number of households with computers and Internet connections – the impact of these technologies on urban management in Montevideo leaves much to be desired. Municipal officials are still not fully aware of the potential of ICTs as a tool for interaction with citizens. In fact, ICTs are viewed primarily as a relatively inexpensive way of advertising the city to foreign tourists and investors, rather than as a means of communicating

with urban residents. Views are similar in this regard at the national and municipal levels of government.

The most significant point concerning ICTs in the relationship between the municipal government and citizens is that, although the computerization of IMM has proceeded in parallel with the creation of the CCZs as focal points for administrative and political decentralization, these two processes have not converged. The computer system was aimed at streamlining municipal management, although it does not include online procedures. The parallel and non-intersecting paths of these two processes reflect the fact that few, if any, studies of the potential social impact of ICTs on governance had been undertaken before they were implemented. This may be due to the fact that computerization of IMM was launched well in advance of similar initiatives in other countries of the region.

## ICTs in citizen networks

There are currently a number of successful community-based experiments using computers to enhance the quality of life. In fact, such experiments are nothing new. As Artopoulos (1998) points out, "they were the result of the efforts of a political–technological movement opposed to the centralized computerization of the American military and industrial complex. . . . In contrast to the theory of postmodernism, the alternative use of that technology expressed not only the cyberpunk rebellion but also the utopia of citizen participation in the centre of the territorial community space: the city."

Douglas Schuler (1998) suggests that we begin by examining the concept of "community". For this purpose, we may define the community as a group of people living in geographic proximity to each other and linked to each other through social or labour relations or other common interests. If this community is to be effective, the individuals who develop citizen networks must recognize, support and encourage these links. One way of doing this, according to Schuler, is to offer information and provide services that will help to sustain and develop the community's "core values". Those values are culture and conviviality; education; a strong democracy; health and welfare; economic equity, opportunity and sustainability; and information and communication (including, for example, conventional libraries, digital media, television and free radio). All of these values are interdependent and respond to an organic vision: they can be visualized as the vital systems of a community, just as the circulatory, nervous and muscular systems play interdependent roles within the human body.

An electronic citizens' network (ECN) selects and offers information from multiple sources, providing a single point of access to information without having to call a series of municipal offices, read several newspapers or consult different neighbourhood associations. Yet ECNs offer more than local information: many of them sponsor weekly magazines or electronic bulletin boards, provide connections to national and international networks as well

as community access to cable television – which is in fact a form of two-way interactive communication – and serve as catalysts and conduits for community projects.

Although there is no standard model for an ECN, a survey of existing organizations reveals a number of underlying ideas. The electronic basis of civil society organizations that use ICTs probably includes e-mail, Internet access, electronic distribution lists or listservs, and online discussion forums. Yet community organizations do not offer the same capacity for online circulation as do commercial providers. Some have obtained their Internet connection and their web page through the goodwill of local providers, while others pay for these services. Members of the ECN or citizens using its services only occasionally can contact them in a variety of ways, including through their personal computers and modems, through another computer on the Internet (using the Telnet program) or directly via the Internet. In developed countries, public libraries and universities offer access terminals for those who do not have computers at home. There are also computer kiosks with terminals that can be used to access the Internet for a fee of about US$1. Access to cyberspace is no longer as financially constrained as it was when the Internet began, although there are still limitations imposed by differing endowments of cultural capital.

The Spanish Association of Citizen Networks describes citizen networks in this way: "A citizen network is a system for intervention, for instrumentalizing, articulating and promoting local development in all its aspects. . . . on the other hand, the authorities have in citizen networks a means for reaching the most remote households with information on matters of common interest and a way of providing services to citizens. In the future, many procedures will be handled by remote means. Communication between governors and the governed must be computerized at the same pace as the rest of society and must not fall behind. . . Networks can help to enhance the quantity and quality of public services, especially for those groups that have difficulties using them in their current formats. The various groups and social movements have in these networks a means of communication and coordination, a forum for putting forth their ideas and proposals to the public and a tool for interacting with groups that have similar interests in other parts of the world."

Although this is merely the outline of a principle, it is also the foundation stone of the city of knowledge, which requires a specific design for embracing the barrios, universities, social activists and organizations, which in one way or another determine the shape of the information society.

## Civil society and the use of ICTs in Argentina

In the 1970s, the notion of governance was associated with the role of the state in terms of administrative efficiency, sound leadership and management capacity. At the beginning of the new millennium, the concept of governance

has come to incorporate variables linked to the relationship of the state with a series of economic agents and public authorities and its interaction with civil society, the economy and the market. The notion of "local governance" put forward here highlights its political dimension and focuses the debate on the interdependence between the state and civil society. The prevailing view is that if the multiple interests of civil society are not coherently organized it is impossible to expect good governance.

We can see a recent change in the relationship between the state and civil society (Filmus 1999), in terms of policies for reforming the state, the crisis of representation, the fragmentation of the social structure and the change in organizational model.

Public policies are being implemented to reduce the state's role in running the economy and in production, such as transferring a portion of functions to the market (privatization) and delegating responsibilities to the municipal level and to civil society itself (decentralization policies and the emergence of NGOs as implementers of public policies).

The crisis of representation, while it does not affect the credibility of the political system, does call into question the procedures used for electing representatives. Parties and politicians as a group are seen as placing their own interests ahead of those they represent. We find the emergence of macro and micro policies (civil society organisations and ad hoc social movements) and the consequent separation of the political sphere from the social one; empowerment for self-resolution of demands and resolution of problems in the social sphere; expansion of the "public sphere" through the social sphere; and the problem of participation outside the state, a model for restructuring the state that encourages self-resolution and does not articulate participation.

The 1980s saw the emergence and development of non-traditional organizations: social movements based on specific issues and emphasizing local action, new demands, economic survival and no ties to political parties. In addition NGOs are recognised by the state and by international aid agencies as key players in preparing and implementing development programmes. Some NGOs believe that they must strengthen their relationship with the public sphere and that, as organizations, they can take over the execution of some programmes directly, managing the resources themselves, with state supervision (particularly at the municipal level). Other organizations are not prepared to take on responsibilities that they feel belong to the state, believing that they should limit their activity to the social sphere and maintaining a "public watch".

## Community organizations in the city

Some writers see a relationship between the size of a city and the different forms of citizen participation: thus, the links between the state and civil society will be different in rural municipalities, in small towns, in intermediate and large cities and in metropolitan areas. Under this categorization, Buenos Aires

represents "a complex structure in which, besides grassroots organizations, there are intermediate entities and support organizations that also make demands relating to the quality of life, care of the environment, consumer protection, etc.". This dense and varied fabric of associations is reflected in the fact that the city has the greatest concentration of NGOs in the country (according to GADIS, 46 percent of the total in 2000).

A study by Filmus, Arroyo and Estébanez (1997) on the profile of NGOs in the district found the following:

1. There are a great variety of problems being addressed: activities involve not only the usual issues (poverty, children, unemployment, etc.) but also other areas such as the environment, human rights and citizen participation.
2. Proximity to decision-making centres facilitates access to sources of information and financing (particularly international).
3. NGOs interact with each other frequently and participate in one or several networks. Their effectiveness needs to be assessed carefully because their contact does not lead to the exchange of resources or the socialization of experience.
4. In their relationship with the state, "direct action" organizations interact frequently with the municipality and various national agencies. While the attitude is "hostile" towards both levels, there is a degree of dependency on government subsidies. The remaining NGOs (the support groups) diversify their public contacts, since in most cases their radius of action involves other regions of the country (project-related).

The National Community Organizations Centre (CENOC), an official body that has the most complete database on community organizations in the country, lists 483 organizations based in the city (CENOC 1998). Most of these are civil associations and foundations. Their most frequent modes of intervention are through training, primary care and advisory services. The questions they deal with most frequently are social and human issues, health and education. Half of these organizations participate in networks, and most of them engage in activities with a broad geographic scope (44 percent at the national level).

In terms of the articulation between GCBA and NGOs, we can point to various experiments with different areas of government for distinct purposes.

The Strategic Planning Council (CPE) identifies urban, public, social and private players. It assesses the main strengths and weaknesses of the city and the opportunities and threats facing it. It sets out guidelines for bringing about a qualitative change in long-term trends. It develops indicators and strategic information for management. The membership of CPE includes a wide variety of social organizations from the fields of labour, industry, religion, culture and education, political parties, NGOs and in general any institutions that want to join, provided they meet the minimum regulatory requirements. CPE

has the power to take legislative initiatives, i.e. to submit draft laws. The network embraces 83 organizations (NGOs, businesses, regulatory bodies, chambers, universities).

CIOBA (Information Centre on Organizations Active in the City of Buenos Aires, Department of Social Promotion, Social Policies Area) helps to develop and strengthen civil society organizations by means of a modern and efficient information service. It maintains a database with specific, up-to-date and geo-referenced information on governmental and civil society organizations. This information is publicly available free of charge and registration is voluntary (294 NGOs are registered).

SSZ (Local Social Services, Department of Social Promotion, Social Policies Area, housed in the CGP) works in two areas. First, it promotes and strengthens local social organizations by encouraging coordination through the formation of social and institutional networks, social coordination, and alliances with public and private institutions in order to pool efforts, avoid overlaps and maximize resources for the benefit of the community. In 1999 there were 15 networks involving 338 institutions in which civil society organizations worked together with SSZ. Second, it provides technical support to NGOs to strengthen their internal organization and enhance their ability to serve users. In 1999 technical assistance was provided to 53 institutions and community or grassroots groups.

The ***Control Activo*** (***Legislatura***) system was donated by the Control Activo NGO and 32 NGOs within the Forum for Transparency, including ***Poder Ciudadano*** (Citizen Power), which audits the Legislature's procurement system. This system, known as Active Control, allows procurement data to be posted on the Web. Since January 1999, the General Administration Department has developed and implemented a computerized procurement management system for making records public. Since that time, information has been entered in the database of the Active Control system.

## Survey of ICT use by NGOs in Buenos Aires

As part of our study, we conducted a survey of non-profit civil society organizations that are not dependent on the state or on the market for their financing and that advocate new forms of collective action outside the political parties by making use of ICTs. We therefore excluded traditional organizations such as labour unions, barrio clubs, churches, student cooperatives, political parties and retiree centres, as well as those that produce information for managers (consultants and political foundations and private universities and private schools).

The sources of information we used were CENOC, the Social Sector Forum, GADIS, CIOBA and the Internet. We determined the use of ICTs by checking whether organizations had a presence on the Internet, either their own web site or an e-mail address. In this way we could detect trends in the use of ICTs and their impact on strategic aspects of the production and use of information, communication and the generation of new services.

We conducted a self-administered survey, distributed via e-mail. This approach emulated the method of conventional mail survey, except that in this case organizations had to enter a web site and complete an electronic form. The survey was aimed primarily at medium-scale and large support organizations[8] in the city of Buenos Aires that had been using the Internet for at least three years. We obtained data from 78 NGOs within 30 days (November 21 to December 20, 2000).

Our analysis of the outcome of adopting the Internet in these organizations was divided into "results" (quantifying new infrastructure and installed capacity, as well as the use of Internet services, either as users or as producers of information) and "effects" (the impact on communication, access to information, and access to and generation of new services).[9]

The most obvious "result" is the infrastructure that has been installed for accessing the service. There are an average of five computers per organization, four of which have Internet connections. For the most part, the equipment was acquired for the exclusive use of the organization, although sometimes use is made of a computer in a member's home. A third of all organizations had equipment with Internet connections.

Another result is the organizational capacity that has been developed for using the Internet and the division of tasks within the organization, particularly personnel assigned specifically to deal with Internet matters. We also looked at the way in which these members had been trained in using the tool and the cost of this to the organization. Most of the organizations have individuals assigned to Internet-related tasks (between two and five members in most cases). Existing staff rather than new recruits handle this work in 47 cases, demonstrating that the organization usually relies on its own human resources to perform tasks related to electronic communication. In terms of training for members in ICTs, more than half of the organizations rely on self-training (51.2 percent of responses), while a minority have professional or technical staff with a computer science background (17.1 percent of responses) and a few organizations have personnel who were given special training within the organization (16.3 percent of responses). A minority of the organizations have funds earmarked for this activity (26 cases). Among those that do have a specific ICT budget (for service providers, telephone expenses, web site maintenance, software, etc.), some devote up to 5 percent (23 cases) and others up to 11 percent or more (16 cases) for training.

The installed infrastructure and organizational capacity to use the Internet are related to the organization's access to and use of the technology, either as users or as producers of information. Several of the organizations have been using the Internet for three years or more (50 cases), and another 15 organizations have been using the Internet for at least two years. Half of the members of these organizations have e-mail access (47 percent of cases) and more than a third have web access (38 percent of cases). E-mail and the Web are the services most commonly used by these organizations (42.8 percent and 25 percent of responses, respectively), while 18.9 percent reported using chat groups as well.

Internet use improves information access (20.7 percent of responses), publicity about activities (20.5 percent of responses) and communication with other organizations (19.3 percent of responses). It also simplifies administrative tasks (15.1 percent of responses). Most of the organizations use the Internet to publicize information through their web site (16 cases). This tendency increases among organizations with more experience in using the network. There is also a tendency to establish web sites among organizations that have programmes of broad geographic scope. More than 30 percent of sites were produced by members of the organization (35 cases), while outside firms were hired in 13 cases and volunteers were used in 10 cases. Most of the sites provide information (36.3 percent of responses), access to a bulletin board (20 percent of responses), database access (15.6 percent of responses) and discussion group lists (11.9 percent of responses). Half of the organizations update their content on a monthly basis; the other half do so only two or three times a year.

In terms of the "effects" of the use of ICTs in community organizations, there were changes in communication, information, and generation of new services, and consequently in the internal organization of the NGOs. One interesting aspect of communication is the level of links to other organizations, including organizational networks and the local government. Among these organizations we found that most are part of a network (64 cases). Most of these networks consist of organizations from all over the country (38.7 percent of responses), foreign organizations (36.3 percent of responses) and local organizations within the city (25 percent of responses). We also found further evidence that organizations that have more links to national and international organizations tend to make more use of web sites.

In terms of their relationship with the local government, a majority of the organizations have no link to their municipality (while 27.4 percent reported such links). Some organizations participate in municipal activities, such as attending meetings (19.7 percent of responses) some receive municipal support for their activities (17.9 percent of responses) and some access municipal information over the Internet (14.5 percent of responses). These relations are established through conventional means, and ICTs are still not seen as a means of establishing links between civil society and government.

Thanks to the Internet, organizations now have greater access to information and databases and they can participate in virtual communities. This is not the only change: with the Internet, these organizations have also positioned themselves as information producers and so they can participate actively in the world communication system. This positioning is not limited to creating web sites as "bulletin boards": organizations have begun to recognize the potential of the Internet for accessing resources and generating new services. Among the web sites we analyzed, we found the presence of innovative tools that incorporate the use of ICTs for improving access to scarce resources, facilitating the solicitation of donations, collecting funds electronically, conducting campaigns for volunteers, distance training and access to information. In turn, these organizations use ICTs in their services

for receiving complaints, providing advice, training, conducting e-mail campaigns, improving communication with beneficiary groups, and accessing information through portals. Some have also begun to make strategic use of the Internet to pursue their objectives, projects and missions (e.g. the Plan Alerta).

Our own research confirms that organizations rely on their own members for training and performing tasks related to the Internet, and they use their own resources for these activities. Essentially, however, our research reveals the changes that the Internet has produced in the way these organizations access information, the way they define themselves and the way they communicate with other organizations. Organizations have increased the number of their web sites, their participation in virtual communities, and their own production of information and new services. Many NGOs are turning increasingly to the Internet and are incorporating ICTs into their functions and strategies. Yet it must be noted that these are for the most part fairly large organizations with international activities; the great majority of small community organizations are not in this situation. Articulation between NGOs and GCBA takes place primarily through conventional channels of participation, and officials and organizations make little use of the government web site and electronic communication.

## Pioneering community networks in Uruguay

Civil society organizations have played a key role in popularizing the Internet in Uruguay. At the end of 1985, when democracy had just been restored, the newfound freedom revitalized the NGO world and gave it new momentum. Community cooperatives and research organizations that had opposed the dictatorship emerged from that experience with new strength and were reinforced by returning expatriates, who brought with them new and refreshing approaches to participation and intervention.

One consequence was the creation of linkages between the principal community organizations of the University of the Republic, thanks to teachers and researchers who had returned to their positions from abroad, as well as those who had taken refuge in private centres. This development posed the need to maintain and consolidate social and academic networks, as well as the international contacts that they had built up in exile. The ICT alternative was seized and developed primarily by NGOs engaged in economic and social research and by researchers in the basic sciences and technologies.[10]

By 1986 the Third World Institute (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 accessing databases all over the world at low costs, downloading input 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 principal Uruguayan NGOs, news of the availability of this technology spread quickly and demand rose for sending and receiving e-mail through Chasque, the collective NGO mailbox at the bulletin board system of GeoNet in England. ITEM began to provide communication services to other Uruguayan NGOs, especially human rights organizations, private social research centres and feminist groups, many of which shared everything from physical space to the coordination organizations that were promoting the return to democracy. "At that time the fax was still a novelty, and the 'neighbours' (members of GRECMU across the street, the friends of CIEDUR, SERPAJ and PLEMUU) became curious and asked us to send messages or to search information in the databases."[11]

In 1989 ITEM, together with a dozen NGOs, sought and obtained a donation of US$10,000 from the Dutch Organization for Development Cooperation (NOVIB) to set up an initial Internet service provider for public use in Uruguay. It was given the name of the old mailbox: Chasque.

The group of engineering students and computer enthusiasts who supported this first electronic community network, inspired by the democratic and participatory spirit of the telecommunications pioneers, met with institutions from Nairobi (Econews Africa) and Penang (Third World Network) and founded NGONET, a network dedicated to promoting citizen participation in international negotiations.

"NGONET launched the idea of linking diplomatic negotiations with incipient discussions in the electronic networks. In the following years Chasque and NGONET would help set up the communication and information systems during the Earth Summit (Rio de Janeiro, 1992), the International Conference on Population and Development (Cairo, 1994) and the World Summit on Social Development (Copenhagen, 1995)."[12]

Chasque played an important part in popularizing the Internet outside the academic world, although it was based in the universities and maintained strong ties with the Central University Computer Service (SECIU). In 1994 a direct line was established between SECIU and Chasque, and this was to lead to one of the key conflicts in the process of spreading the Internet in Uruguay.

In November 1993, ANTEL and ITEM signed an agreement making Chasque's services available to all URUPAC users. This was the first direct Internet link that ANTEL offered its users. In March, SECIU was connected to the Internet over a line provided by ANTEL, which, however, prohibited access by third parties, a ban targeted implicitly at Chasque. Chasque received letters of support from all over the world, and it launched a lawsuit. That suit failed, but the court ruling indicated that the issue of access to the Internet deserved "broad national debate", which effectively broke the "Internet issue" out of its small circle of devotees and exposed it to public discussion.

In August 1995, with new management at ANTEL, there was a change of policy. Chasque was recognized and began to offer access to the Internet in

graphic mode. Its members began to navigate over the World Wide Web and create their own web pages, almost simultaneously with the inauguration of the state provider using a dial-up line of the 0900 type, where registration or affiliation was not needed and services were invoiced on the telephone bill. Since that time, the picture has changed substantially, and the role of NGOs as promoters of the Internet was taken over by the state and by businesses: Chasque went into a tailspin. Today there are questions about its status as a tax-exempt NGO, given that it is providing what are clearly commercial services, it has no specific plans for connectivity and web hosting for NGOs, and its content does not differ much from that of a conventional portal.

The mass marketing of computers and the Internet has led to a change in the profile of users and providers of services and content. Twenty-six percent of the population have a computer at home, and a further 13 percent at work; 20 percent of the urban population use computers frequently, and 10 percent are connected to the Internet, the highest in Latin America.[13] The number of web users is growing at 40 percent a year. Analysts expect that the saturation point will be reached by 2003, with a coverage of 25 percent.[14]

ICT-based services are also expanding: there were 54,065 hosts with the domain ".uy" (for Uruguay), according to a survey by the Internet Software Consortium in January 2001, ranking Uruguay number 47 in the world by that measure.[15]

## Public access to ICTs in Uruguay

The distribution of ICT access (as measured by computer ownership at different socioeconomic levels) reveals the economics-based digital divide in the country. Among the upper-middle and upper income groups, 58 percent have access to a computer at home, and 25 percent at work, compared to 22 percent and 14 percent, respectively, for middle income groups, and 2 percent and 8 percent for the lower income groups. In terms of Internet access, the overall figure is 10 percent. Among that 10 percent of the population, there is a generational gap, in a country where the average age is now slightly over 32 years. About 62 percent of Internet users are under 30 years of age, and 19 percent are between 30 and 40 years of age. These proportions decline to 11 percent for these between 40 and 50 years and 2.8 percent for those over 50.

Businesses have reacted positively to these differing profiles and levels of coverage. According to a survey of medium-sized and large firms in the principal sectors of the economy, conducted by Deloitte & Touche Uruguay, more than 60 percent of firms surveyed claimed to have a web page and nearly 90 percent used e-mail. The impact of e-business was considered very small (by 58 percent of these surveyed); fewer than 18 percent made sales over the Internet and 28 percent made purchases by that route.[16]

The flagship of the information society in Uruguay is the software industry, which is setting a regional benchmark in the development of information

systems for businesses and has achieved world-class competitive status. According to results of the Competitiveness Agenda (in 1999) of the Ministry of Industry, the sector consists of 20 large firms and about 150 medium-sized ones, with total export of some US$60 million per year.[17]

The government is assuming the role demanded by the most dynamic firms in the software business: to portray an external image of a technological country, to facilitate access to financing and to promote the information society. The clearest move was the establishment of the National Committee for the Information Society, consisting of the President of the Republic, the rector of the University of the Republic, and representatives of private universities and the Uruguayan Software Chamber. Its principal national objectives and plans for the next three years include "computer literacy, development of computer services for citizens and businesses, modernization of the public administration, promotion of an efficient market for telecommunications and the Internet, a competitiveness programme for the software industry (Polo Uruguay Soft) and a training and certification programme for quality control in businesses that are developing information and communication technologies".[18]

This ambitious agenda, which covers nearly all sectors of domestic activity, will require conscious participation by civil society to defend and promote public interests, as well as broad debate over how these desirable goals are to be put into practice. NGOs, in particular those of the Electronic Citizens' Networks (ECN), will have a key role in this process.

## The ICT landscape in NGOs in Uruguay today

The major ECNs active in recent years are few in number but highly diverse. A few examples will illustrate this point.

The pioneers of ECNs, ITEM and Chasque, have recently been joined by Social Watch,[19] a Uruguay-based international network of citizens organizations that is struggling to eradicate poverty and its causes and to ensure equitable distribution of wealth and respect for human rights. This grouping of NGOs is a member of the International Association for the Progress of Communications.[20]

Uruguay Solidario is a portal dedicated to publicizing and interconnecting community NGOs. It is an initiative of the ACAC Foundation, which belongs to a credit cooperative. It carries a national directory of NGOs.[21]

The recently established Electronic Citizens' Network provides a forum for discussing and promoting activities relating to telecommunications problems. Its discussion group lists include "Internauts Uruguay", "Future" and "ANTEL users", using the distribution services of Yahoo Groups. Although it is not strictly speaking an NGO, it has made its mark with the media as a liberal-oriented "opinion group" with significant "virtual" activity. At its focal point are the editors of the Uruguay.com site.[22]

A key ECN for purposes of our research is Vecinet, which, like many NGOs, is heavily involved in volunteer work. Vecinet's centrepiece is its electronic publication ***Neighbourhood self-management***.[23] It offers a barrio news service via e-mail. Its web page publishes documents of community interest on municipal administration, participatory budgeting, human rights, cooperativism and self-management.

The Uruguayan cooperative movement has a long tradition and several solid organizations. Although they cannot be considered NGOs because they are for-profit groups, they have been and remain important in development of the social sector, supporting, promoting and cooperating with social organizations. The Neticoop Programme was launched by the Uruguayan Confederation of Cooperatives (CUDECOOP), an umbrella organization for the Uruguayan cooperative movement. Its purpose is to promote the use of available ICTs, in particular the Internet, between cooperative enterprises and organizations and their members.[24]

## Citizens organizations and community telecentres

Citizens organizations have played a pioneering role in the popularization and social appropriation of ICTs for community purposes through telecentres. Until the middle of 2000, there had never been a telecentre in Uruguay. Nor were there cyber cafés, apart from a few isolated cases. National policies had been stressing private connectivity, in the home and in businesses, and paid little attention to community access or to social appropriation of ICTs. In this context, it is not surprising that it was an NGO specialized in poverty and exclusion issues, together with a left-leaning municipal government, that took the initiative to launch a national connectivity strategy involving a system of telecentres distributed throughout the capital city: the ***Bibliored*** (library network) project.[25]

This undertaking was the result of an agreement between the Franciscan Centre for Ecological Research and Promotion (CIPFE)[26] and IMM, whereby the IMM provides the premises and the "environment" in the libraries of community centres (CCZs) and the NGO supplies perhaps four computers, a computer instructor and an Internet tutor in each of the 20 decentralized libraries of Montevideo. The objectives of the project, which was launched in 1998, include outfitting each of the libraries of the CCZs with a telecentre providing basic computer literacy skills for a minimal fee of US$23 per month for students, the proceeds of which are used to pay for the instructors. Each centre provides Internet access, free of charge, for four hours a day. The central objective of the project is to computerize databases and administration in each local library.

To date, some 1,700 students have been made computer-literate and another 800 are now in training. User profiles, according to our review of the user log, run from children and adolescents to seniors of up to 85 years and include many housewives, young job seekers and workers seeking to

maintain their competitive edge. In our interviews, several tutors made special mention of adults who have computers available at home or at work but do not know how to use them. The socioeconomic profiles vary from zone to zone, but the project gives priority to the poorest districts.

In terms of the channels of community participation developed under the project, it is noteworthy that former students from the courses have put together web pages for the libraries with information on neighbourhood organizations, places of interest and other useful data. As well, the Internet portion of the training course explains and encourages use of the various resources available to citizens in IMM and the central government.

Another project that could play a dynamic role in this area is being undertaken by the Star Media Foundation together with the National Youth Institute (INJU). The project is administered by an NGO, the Committee for Democratization of Information Technology in Uruguay (CDI Uruguay), an affiliate of CDI Americas. This organization seeks to create self-sustaining information technology and citizenship schools throughout the country, under a contract with INJU, which has provided the premises for its 32 youth houses nationwide. At the moment one school is functioning and there is a training centre for tutors; three more schools are planned to start shortly.[27] The model is designed to make up for shortcomings in the teaching of information technology in the public primary and secondary schools.

## Survey of ICT use by NGOs in Montevideo

At the end of 2000 we conducted a survey of formally established NGOs in Montevideo, using the national directory of community service organizations produced by the Institute for Communication and Development.[28]

We selected a random representative sample of 80 NGOs and gave them a questionnaire similar to the one used by the team in Buenos Aires in order to keep the data comparable. We succeeded in gathering thorough information on the use of ICTs in some 60 NGOs of the city, a response that we considered acceptably representative and that allows us to draw conclusions of a general nature and to develop a tentative picture of the impact of ICTs in civil society organizations in Montevideo.

Twenty-five percent of the NGOs surveyed were founded before the coup in 1972. Another 25 percent were created during the dictatorship; 25 percent more between 1985 and 1992, and the final 25 percent since 1992. One-quarter of the NGOs surveyed have no hired staff; another quarter have between 1 and 5 employees. The remaining organizations are divided evenly between those with 5 to 30 employees and those with more than 30.

Seventy percent of the organizations have a dedicated e-mail address. Only 25 percent have their own web site, however. Eighty-seven percent have at least one computer, 55 percent have multimedia equipment and 78 percent have a printer. Forty percent have a scanner and 20 percent have a CD writer. Nearly 18 percent had begun to use ICTs before 1994. Sixty percent

have Internet connection. Ten percent share their equipment with another NGO, and a further 11 percent use equipment at a member's house. Twenty-one percent have an intranet: it is this group of highly wired NGOs that is most committed to interaction with local government, as we shall see below.

The fact that so many NGOs have access to ICTs suggests that these communication technologies should be having a great impact in terms of fostering social participation in local decision-making, consistent with the national goal. However, the most widely used technologies are in fact the telephone (93 percent) and fax (68 percent), and to a lesser extent the traditional postal service (73 percent). Thirty-eight percent have only one telephone line, while 14 percent have more than five lines.

Eighty-two percent use "physical meetings and face-to-face contacts" to cooperate and coordinate with other NGOs, and 47 percent have participated officially in events organized with other NGOs. Sixty-seven percent hold meetings to publicize their community objectives. Fifty-two percent use graphic media and 25 percent say they have used electronic media to reach the community. This indicates that the social sector is very active and in general follows a multimedia communication strategy.

Interestingly enough, little use is made of e-mail for interacting with the municipal government and local players at the barrio level, especially when we consider that 57 percent receive more than 20 e-mail messages every day. Only 50 percent of e-mail messages are "relevant", reflecting no doubt large amounts of unsolicited mail – a measure of the dedication required of NGO staff.

As to the Internet, it is used more for receiving and seeking information than for sending it out. Not many organizations use this medium for communicating with IMM, which confirms our hypothesis that this mechanism has been little publicized by the local government administration.

The following table summarizes the relationship of NGOs with various bodies of local government. There is considerable interaction: note in particular the number of meetings and the number of NGOs that coordinate activities with the municipality, either through agencies of the central executive, such as the neighbourhood commissions, or directly through networking (80 percent of NGOs are members of the network).

| ***NGO links with local government and community centres*** | ***Yes (%)*** |
|---|---|
| Coordinate activities with IMM/CCZ | 43.3 |
| Have contracts with IMM/CCZ | 35.0 |
| Participate in meetings with CCZ/IMM | 28.3 |
| Interact with IMM/CCZ (support/collaboration/contribution/complaints) | 25.0 |
| Belong to an NGO network that coordinates with CCZ/IMM | 18.3 |

In short, Uruguayan NGOs make extensive use of ICTs and they communicate intensively. They are highly coordinated, they are accustomed to networking and they participate in events and coordinate their actions, a factor that surely facilitates the spread of the technologies. In general their information technology infrastructure is good and they are well endowed with peripheral equipment such as printers, scanners and CD writers, as well as Internet connections. Such connections are generally made through a telephone line and a modem. The principal service provider is ANTEL's Adinet (76 percent), followed by Chasque (13 percent), which is, however, losing ground as a provider for NGOs.

In terms of using ICTs as a mechanism for participating in local government, the most active NGOs, those we call "high connectivity" NGOs, have and use a number of high-frequency channels, telephone lines and intranet. The correlation factor between having an intranet and coordinating with IMM is 0.54; for intervening in local policies, 0.35; and for having contracts with IMM, 0.33.

Apart from two-way communication by e-mail between NGO leaders and senior IMM officials, IMM relies to some extent on outsiders for ICT support. For example, municipal information is today distributed by e-mail on a voluntary basis by the NGO Vecinet, using the press release distribution list of IMM.

The Uruguayan social sector is fairly well advanced along the road that the national government has mapped out for bringing the country quickly into the information society. Yet, despite repeated public pronouncements, no operational spaces for participation have been created where social organizations can monitor or influence those plans.

## The social impact of ICTs in Buenos Aires and Montevideo: similarities and differences

The results of our research allow us to evaluate current trends, changes and impacts relating to ICTs, mainly in local governments and their internal management and communication with citizens, as well as in community organizations of both cities.

### ICTs in local government

In terms of computerizing the local government, Argentina and Uruguay have different historical backgrounds and policies and show varying degrees of commitment to the use of ICTs, reflecting their different economic and political strategies. They have nevertheless some traits in common.

Strategies for incorporating ICTs into local government were developed by small groups of officials without any prior consultation with the public servants who were to use them, or any impact studies, and without any subsequent monitoring or evaluation that would allow errors to be corrected.

We found an ambivalent view with respect to the impact that ICTs might have on the dynamics of citizen participation. There is a fear, explicit in our interviews with municipal officials in both cities, that these media might replace the traditional means of face-to-face participation, which are considered essential for negotiating with citizens and recreating community spaces. We suspect that there is a further, unspoken fear that the use of ICTs will at least partially inhibit the practice of political patronage that is so common in Latin America.

It is significant that the incorporation of ICTs into local government in both cities was not preceded by any campaigns to sensitize officials to the uses and possibilities of these tools, or any serious training, except for a few short courses that were dismissed as inadequate by the officials we interviewed. This lack of knowledge and information has induced scepticism, fear and resistance among officials. Moreover, since they were not consulted on their working needs and how ICTs could facilitate their tasks, they do not feel that their interests have been taken into account in the "solutions" imposed by the government and as a result they have failed to appropriate these technologies. This contrasts sharply with experience in other cities of the world, for example in Toronto,[29] where the process of computerizing local government was preceded by participatory workshops in which City Hall officials described their tasks and identified the areas where ICTs would be of greatest use. Indeed, lessons from abroad, in terms of inexpensive and technically accessible solutions, appear to have been given little consideration.

The immediate impact of this "non-strategy" has been the generation of resistance and conflicts, essentially because the incorporation of ICTs was not accompanied by any effort at comprehensive institutional modernization of the local government. One positive impact has been the generation of greater commitment as well as new kinds of cooperation and organization, resulting in greater efficiency in fulfilling institutional mandates. Another is the greater availability of information to officials and citizens alike. Yet there is also another shortcoming: the instruments for fostering effective citizen participation are still not available. In fact, the promise of tools that do not exist can generate further scepticism among the public and thereby become an obstacle rather than a stimulus to participation.

Nor were there any information or publicity campaigns conducted through the conventional media (newspaper, radio, television, billboard, etc.) to inform citizens about the newly computerized services. Both cities provide information on their web pages, but those pages first have to be accessed. Apart from a few public posters and notices in local newspapers when the first three Technology Centres 2000 were opened, citizens who are not Internet users or who are unaware of these new services receive no information that would encourage their use. Information travels by word of mouth but not through institutionalized channels.

It is also a curious fact that, in designing their strategies for integrating ICTs into local management, both governments have neglected to consult national experts in public administration or in information society policies who are now working on the issue both in Argentina and Uruguay. Apart from one technical question posed by IMM to the University of the Republic, neither government has taken advantage of the know-how and expertise of the universities located in their respective cities.

In both cities, the municipal decentralization process has been accompanied by the introduction of technology, but this has been done slowly and rather haphazardly, with little regard for citizen participation through ICTs. Efforts to involve the community were due less to institutional strategies than to individual and group initiatives.

The two countries differ in their national strategies with respect to ICTs. Uruguay is actively encouraging its software industry and has managed to attract Argentine firms to the country by offering fiscal incentives. Argentina has no explicit policy in this area, despite government statements. Notwithstanding the differences, the perception of the potential of these technologies in public administration at both the national and municipal levels is similar in the two countries. Officials are still not completely informed or convinced about the potential of ICTs as a tool for interacting with the citizenry. Generally speaking, in Montevideo their use is limited to providing a relatively inexpensive platform for advertising the city abroad to potential tourists and investors, while in Buenos Aires they are used to showcase the "new model" of urban modernity and efficiency.

## The use of ICTs in community networks

While the two countries are similar in terms of local government use of ICTs, they differ noticeably when it comes to incorporating ICTs into community networks. Both countries have a long history of social movements and community organizations, reflecting the heavy influence of European immigration in the 19th and 20th centuries, but for the time being the approach of civil society organizations(CSOs) in the two countries to the use of ICTs has diverged substantially.

One characteristic of CSOs in Argentina is that they have been fairly late in discovering the world of information technologies. This was particularly true of the smaller organizations, despite the fact that the Internet was already firmly established, if not in terms of the number of users, at least in terms of its role in universities, businesses, the media and government. CSOs have played no part in the spread of the Internet, either in the country as a whole or in the "tertiary sector", except sporadically.

Uruguayan NGOs, on the contrary, were pioneers in the use of the Internet and have played a significant role in expanding its use. In a society that is

relatively well organized, with a strong labour movement and many cooperative-type associations, NGOs initially used ICTs to link up with worldwide networks and then to communicate locally and nationally.

In terms of networking, Argentine NGOs tend to go it alone: as noted earlier, very few are part of an institutionalized network. The fact that there is no national federation of NGOs or CSOs makes networking more difficult. This same characteristic has carried over into their approach to ICTs: organizations that use them do so in internal networks but not for networking with other organizations, although a few informal networks have emerged for exchanging information. In Uruguay, while we did not find any formal national networks, there is a strong tendency towards intercommunication among NGOs that use ICTs regularly.

The relationship between community organizations and government presents common features in both countries. While Argentine organizations insist on the responsibility of the government to popularize and facilitate the use of ICTs, and the government itself has declared the need to do so, a glass wall has in effect been erected at what should be the point of interface between the state and civil society. There are no points of contact, save on an exceptional basis, between NGOs and the telecentres of the various national and local programmes, which were never designed to "create a community". A similar situation can be observed in Uruguay, although the nascent system of freely accessible municipal telecentres in public libraries augurs well for such an interface.

In both countries, the observed trends point to an early increase in the use of ICTs for giving expression to citizenship, under the impetus of recent government plans and the interest of computer and telecommunications companies. It will be essential to monitor these processes closely and to evaluate regularly the various models of public participation and the degree of initiative shown by CSOs in making use of information technologies.

In Uruguay there is a certain lack of coordination among players and objectives, and yet CSOs, as well as government and business, are politically committed to bringing the country into the information society. This holds the promise that CSOs will, over the medium term, become better integrated into the information society at the municipal level. In Argentina, all three sectors speak positively of the need to integrate the country into the information society, but they have yet to coordinate their efforts, either between or within sectors. As a result, CSOs will be slower in entering the information society, at least in the short and medium term.

It is important to recognize that plans and experiments in both Buenos Aires and Montevideo have been greatly influenced by the broader economic and political context, by conflicting demands in terms of regional and international competitiveness, and by such factors as economic crises, national interests, local objectives, the inherent contradictions within the ruling groups, and the need to rebuild democracy.

## ICTs, democracy and social capital

Research has shown how difficult it is to harmonize social, administrative and technological policies. Tsagarousianou et al. (1998) refer to a US study, the ***First reflections report***, which declares: "The information society must be about people. We must place people in charge of information instead of using information to control people." The fact is that in many countries that have introduced "electronic democracy" – and this includes "electronic government" as well as citizen participation, individually or through organizations, via electronic media – the results have not lived up to these concepts. There are several reasons for this.

First, "Decision-making in the field of science and technology has been historically, and still is, less democratic than other types of policy decisions" (Sclove 1995). The technical complexity of policy considerations in this area is beyond many laymen and prevents them from identifying with these issues. While the areas of transportation, economics, environment, health, security, education and so on are frequently the target of criticism and interventions by social groups or community organizations who can reasonably expect to influence decisions through the pressure they bring, this has not been true, until very recently, for scientific and technical issues.[30]

Second, these government initiatives, generally framed in the language of democracy, are not based on any body of academic research on which theories of "cyber democracy" might be constructed. The shortage of intellectual critiques of the assumed democratizing power of ICTs reflects in part the lack of empirical research, as well as the academic community's reluctance to recognize the social impact of ICTs as an issue worthy of serious attention. At the same time, government officials have resisted consulting academics working on these issues.

Third, technological innovations are taking place in a changing political climate, in which rigid government control over the organizations and institutions implementing and introducting these technologies is no longer accepted as an efficient approach. The investments needed to keep up with technological developments are beyond the budgetary capacity of many governments, especially at the local level. As noted by Tsagarousianou et al. (1998), the monetarist thinking now in vogue, with its emphasis on controlling and reducing public expenditure, leaves it to private capital to finance technological development.

The emergence of new kinds of social movements, at both the local and global levels, that thrive on electronic networking suggests the need for more and better research into the empirical bases of electronic government and electronic democracy.

Our own research suggests that electronic government in the countries under discussion will not be fully successful unless it is based on a clear examination of the needs of the public in terms of communication and

participation, on a profound transformation of institutional cultures, and on involvement by the academic world and CSOs in preparing social and technological policies for cities. On the other hand, many of the cherished objectives of CSOs will not be achievable without fundamental changes in the regulatory structures for technology and telecommunications.

The technological tools discussed here can speed up the process of network building, a process that will depend in large part (but not entirely) on the existence of shared values, a culture of participation, the ability to act in synergy and to regenerate networks, the strengthening of horizontal communication, the ability to involve different social players in the pursuit of common objectives, and the capacity to build consensus within society. The social bonds sustained by ICTs will not necessarily ensure effective communication nor will they by themselves create communities, but they can facilitate the contact and understanding needed to strengthen the integration of organizations and create new spaces for building social bonds.

The social networks supported by ICTs have the potential to protect, sustain and nourish our societies' social capital, by which we mean the system of networks, standards and trust that facilitates coordination and cooperation for the common good (Bombarolo 1998). Electronic networking can reinforce a local organizational culture by associating it with global organizational culture, based on models of horizontal communication as opposed to the "***caudillo***" style of leadership[31] so typical of the social and political landscape of the River Plate (1999). It can also help to move organizations along the learning curve and can generate or reinforce links between institutions, thereby facilitating participation and creating networks of trust and cooperation.

We seem finally to have moved beyond the dichotomy between "technophiles" and "technophobes" that marked the later years of the 1990s, and debate is now focused on the social appropriation of technologies and on the direction of the changes that are underway. As Anthony Giddens (1998) has written, "globalization is not only, or even primarily, about economic interdependence, but about the transformation of time and space in our lives. . . A world of instantaneous electronic communication, embracing even people in the poorest regions, reorganizes local institutions and the very texture of daily life." The Internet may be universal, but the uses that are made of it are highly differentiated. For that reason, this paper has focused on an area that has so far been little explored: attempts at electronic government and the use of ICTs by CSOs (Jara 2000).

To conclude, we may quote Stéfano Rodotá (2000): "We can see immediately how important the novelties introduced by information and communication technologies are for citizens. The public and private spheres become intertwined and redefined. Living in freedom in the physical city and the political city means being able, at different times and places, to enjoy the conditions of 'invisibility' formerly reserved to the voting booth. Control

over information itself, access to socially relevant data and the possibility of uninterrupted communication become necessary conditions for preserving individuality and for collective action. Possession of the technological dimension begins with literacy and ends in the reconstruction of democratic procedures".

## Notes

1. Honourable Legislature of the City of Buenos Aires, Parliamentary Works Commission, Management Group. Definition of organizational guidelines. Final working document. Mimeograph. Buenos Aires, 1998.
2. The survival of these networks reflects jockeying for power and internal autonomy. The real problem is that they threaten the integrity of the network as a whole. Because it can be accessed from the Internet via a modem outside the internal network server, the entire network is prey to viruses and hacking attacks, as happened in March 1999, when an intruder broke into the network of the Parliamentary Bureau Commission and changed the wording of several draft laws. See ***Clarín***, March 7, 1999, <http://www.clarin.com.ar/diario/99-03-07/y-01101d.htm>.
3. CEDOM is the Documentation Centre of the city of Buenos Aires. It falls under the Office of Information and Archives of the Legislature. It is responsible for storing, classifying and providing public access to draft bills, messages, resolutions, laws and legislation tabled in the Legislature and published in the ***Municipal Digest***. In 1995, CEDOM created its own web site, with its own server: <http://www.decom.gov.ar>, a forerunner of the Legislature's current site. It allows access information in CEDOM's database. CEDOM was the first, and for a long time the only, sector of the Deliberative Council that was computerized and had Internet access. It still has its server and its own web page, along with that of the Legislature. Its page still bears the stamp of the old municipal government, including the coat of arms and the superposition and duplication of information from one site to the other.
4. See <http://www.clarin.com.ar/diario/98-09-14/e-03401d.htm>, <http://www.clarin.com.ar/diario/99-01-18/t-00901d.htm>, <http://www.clarin.com.ar/diario/99-02-21/e-04401d.htm>, <http://www.clarin.com.ar/diario/99-02-21/e-04402d.htm>, <http://www.clarin.com.ar/diario/98-09-14/e-03401d.htm>, <http://www.clarin.com.ar/diario/99-03-07/t-01101d.htm>, <http://www.clarin.com.ar/diario/99-03-08/t-01101d.htm>.
5. We are grateful for the cooperation of Sergio Mezza and Cecilia Falco, who generously provided information and opened many doors for us in the course of our study.
6. See <http://www.cifra.com.uy/co021100.htm> in <http://www.cifra.com.uy/columnas00.htm>.
7. Interconsult. Published in the newspaper *El País*, August 13, 2000.
8. We used the typology established by CENOC, which classifies community bodies as "grassroots" or "support" organizations.

9. We relied in part on the methodology developed by Fundación Acceso in its study of the impact of Internet use in civil society organizations in Central America.
10. We based the reconstruction in this section on our interviews with Roberto Bissico, Director of ITEM; M. Cipoletti of Chasque; Ida Holz, Director of SECIU; and Enrique Castillo, Administrator of RAU.
11. <http://www.chasque.net/chasque2000/acerca_de/historia.htm>.
12. <http://www.chasque.net/chasque2000/acerca_de/historia.htm>.
13. Surveys published at <http://www.cifra.com.uy/column.htm>.
14. Juan Grompone at <http://www.montevideo.com.uy/genexus/51.asf>.
15. <http://www.isc.org/de/WWW-200101/dist-bynum.html>.
16. <http://www.deloitte.com.uy/espanol/novedades/2000/19_octubre/encuestaebusiness.pdf>.
17. <http://www.cusoft.org.uy/docs97/agenda.zip>.
18. <http://www.uruguayenred.org.uy/informacion_general/agenda/agenda.htm>.
19. <http://www.socwatch.org.uy/2000/esp/index2000.html>.
20. <http://www.apc.org/espanol/about/history/index.htm>.
21. <http://www.uruguaysolidario.org.uy>.
22. <http://www.uruguay.com/internautas/comunidades.htm>.
23. <http://www.chasque.apc.org/guilfont/vecinet.htm>.
24. <http://www.neticoop.org.uy/neticoop/acerca_neticoop.html>.
25. <http://www.bibliored.edu.uy>.
26. <http://www.cipfe.org>.
27. <http://www.foundation.starmedia.com/foundation/ur/country.html>.
28. <http://www.icd.org.uy>.
29. See ***Cybercities? Computerization and local management*** by Finquelievich, Karol and Kisilevsky (1996), which describes the participatory process of computerizing Toronto City Hall and offers a comparison with the city of Buenos Aires.
30. It is worth recalling the demonstrations organized by researchers and academics in Argentina against the Science and Technology Plan proposed by the minister responsible, Dante Caputo, in 2000.
31. According to Bustelo (1999), a historical analysis of social policy in Latin America reveals models for the exercising of authority that are still valid today: the figure of the ***caudillo***, the "man on horseback", characterizing a vertical-paternalistic authority unmediated by rules or ideas that discourages the emergence of an autonomous system of citizen rights and obligations.

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# The social impact of information and communication technologies at the local level

Uca Silva

## Frame of reference

In his inaugural address to the country on May 21, 2000, President Gustavo Lagos referred to the issue of introducing and expanding new information and communication technologies (ICTs) in Chilean society.[1] At that time he described it as a priority, as an urgent need that the country would have to address if it did not want to be left behind in international development. As he put it, the development of new ICTs would not only align the country with other nations in this area, but would also permit social, political and economic development on the home front that would be impossible to obtain in any other way.

The explosive development of ICTs to which the President referred is, in fact, an inescapable reality. We are caught up in it, like it or not. But what is missing from that statement is the fact that these new technologies are bound to lead us in an uncertain direction and at the present time we are simply unable to predict the impacts that they may have.

There exists today a body of knowledge, primarily technical, that focuses on the quantitative dimensions of the spread of technological infrastructure, and it has tended to exaggerate the economic benefits of that spread. This approach has pushed aside deeper thinking about the social and cultural impact that accompanies these technologies. What we need is to observe and analyze how the technological advances of the communications industry have transformed social relationships, i.e. the ways in which men and women communicate and inform themselves and the meaning that this dimension takes on in their daily lives.

This report describes a research project entitled "Social impact of information and communication technologies at the local level". The key objective of the study was to identify how ICTs have been implanted on the national scene and specifically at the local or municipal level. It sought to identify characteristics and trends in the implementation and use of new ICTs from two perspectives: the experience of municipalities on one hand, and the perceptions of men and women in the municipality on the other. By analyzing their statements, we present the narrative constructed by both parties on ICTs at the local level.[2]

The study involved observing the possibilities that new ICTs offer to people in terms of participation. It is argued that ICTs can constitute spaces for social integration and the expansion of citizens' rights. Yet, for this to happen, equality of access to and integration of those technologies are prerequisites: otherwise we run the risk of reproducing factors of exclusion and inequity, and consequently we will fail to achieve real linkages between the municipality and the citizens.

## General context

The emergence of ICTs has led to great societal and environmental changes that have wide-reaching implications. On one hand, they involve not only enormous and obvious benefits, but also significant costs. On the other hand, they have posed new parameters of discrimination, given the gap that exists between groups that have access to the new technologies and those that are excluded. This exclusion of impoverished groups from access to information often coincides with and reinforces other types of exclusion (on economic or gender grounds).

The arrival in Latin America of communication technology, and all its variables, has been marked by inequality. From the beginning, the information technology industry players have been concentrated in conglomerates in countries of the First World, which then expanded their activities and products to different regions and in this way transformed themselves into huge financial groups that have dominated the communications, information and entertainment industries. A UNESCO report on world communications notes that of the 78 largest communications firms, ranked by volume of media sales, 39 are headquartered in the United States, 25 in Western Europe, 8 in Japan, 5 in Canada and 1 in Australia. None of them belong to a developing country (UNESCO 1989: 104–5). This is but one example from a long list demonstrating this inequality at the international level.

Studies on ICTs have focused generally on inequalities between countries and regions, contrasting those that are "developed" with those that are "yet to be developed". This technological divide has been examined from many angles, most of them focused on identifying the benefits and the limitations apparent in this field. Studies at the national level, meanwhile, tend to concentrate on quantitative aspects of the introduction of ICTs. This technocratic approach is the one that has been pursued furthest, and it has typically given an encouraging interpretation to data that are highly discouraging. Rising figures are hailed optimistically from the viewpoint of satisfying a need and are seen as justifying the dazzled enthusiasm with which different countries have reacted to the new technologies (Mattelart and Schmucler 1983).

From the standpoint of the countries that produce them, ICTs represent a new stage in the accelerating march to modernity, indeed a qualitative leap - from the industrial revolution to the electronic revolution – from which no

country dare abstain, on pain of both economic and cultural death. In Latin America, these technologies have arrived in a setting marked by schizophrenia, between modernization and the real prospects for social and cultural appropriation of what is modernizing us. "Computerize or die" is the slogan in countries where capitalism is in crisis and where it is urgent to expand the consumption of computer products (Martín-Barbero 1987). It seems we hardly finish implementing one technology before we are forced to take on a new one. Since the first long-distance communication media came into use, created in developed countries, we have been receivers and disseminators of these new inventions and tools, and the results have been more successful in some cases than in others.

This schizophrenia makes itself felt in different ways and different settings. We can find its mark in daily life and in decisions that imply abrupt shifts in national policy. We have what Martín-Barbero (1987) calls a "semantic void". This means that new technologies, because they do not relate to their context of production, are consumed in a vacuum, a void that most of these countries fill by "semanticizing" the new objective with the language of magic or religion. In this context, questions arise about the characteristics of this consumption and about the content and meaning through which this semantic void is being shaped. We may speak here of a process of "resignification" of these new technologies in Latin America, i.e. the new meanings that men and women assign to ICTs on the basis of their own daily experience, uses and values.

## National versus local

Chile is well on its way to joining the information society. The 1990s witnessed extraordinary growth in the basic infrastructure of the new ICTs. During that time, the number of fixed telephones tripled, cell phones went from none to 800,000 units, and the number of cable television subscribers grew from zero to 900,000 homes. Institutions, businesses and, to a lesser degree, households have been steadily computerizing: the number of computers per capita in those sectors multiplied by a factor of 6. Nineteen percent of the labour force already work with computers, and 11 percent of homes have them (Government of Chile, n.d.).

In the course of modernization and decentralization, the state has taken on the task of adopting the new technologies as a way of strengthening its institutional apparatus in technical terms. This has generated a "technical–communicational" policy approach at the senior levels of public management.[3]

It is the local setting that has become the point of articulation between the generation of these proposals and society as a whole. This has taken on new importance in the current social context, as a strategic place for the flourishing of democracy and of a solidarity that transcends its limits. In fact many regional and municipal governments have undertaken initiatives for consolidating democracy and modernization. Yet we know little about the

process of articulation through new ICTs at the local level, or of the use and impact of ICTs in municipal management.

## Communication as participation

In the countries of our region, it is vitally important to involve men and women democratically in reinventing the local sphere, not only as a political goal but as a potent force for the conquest of new community spaces (Alfaro 1995). But this process of democratizing the country requires, as an absolute condition, that access to communication be treated as an essential right of citizenship. That right will become a basic right for the future, where the focus will be public and participatory.

Participation is an essential aspect of making a political system representative. Where there is no participation, interests can be manipulated and some will be overrepresented while others are underrepresented. If communication is to help foster participation, it must be based on information distribution networks that are operational rather than hierarchical, we must invest in communication infrastructure where the user can not only see and hear but also speak and be heard, and the information conveyed must be credible, true and timely (Lahera 1995). Only in this way can communication at the local level establish a bond between local government and the community – and the quality of that bond will be defined by its ability to activate the communicational functions of the different parties to that relationship. This implies rights and responsibilities with respect to information, dissemination and other communicational elements that reinforce the process of local development and ensure community participation in it. ICTs must provide the "glue" in all these functions.

Information technologies cannot by themselves ensure participation, but if they are properly incorporated they will provide opportunities for such participation and will help to reformulate the ways in which government institutions and communities interact, as well as their relationship with information. As Lahera (1995) notes, there has been no consistent approach and no clear policy for introducing information technology in the public sector. There has been no attempt to interconnect services, which means that much existing information is duplicated.

## The municipal scenario

The introduction of new ICTs in the municipalities has been a slow process, but it has gathered speed over the last three years as the computer infrastructure in the various municipal departments has expanded. As one municipal official put it, "In 1992 we filled the town hall with electric typewriters. In 1994 we replaced them with word processors, and in 1996 we threw those out for computers, so that in 1998 every unit has them, although not as many as they are asking for."

This process, which has repeated itself in all the municipalities we studied, reveals a series of distinct stages. First, computers are introduced in a limited way, then they are gradually extended to the various municipal departments, and finally other technologies are integrated. It is important to recognize that, while these stages are to some extent interdependent – i.e. progress must be from stage to stage – they are not exclusive, in the sense that a subsequent stage may retain many of the characteristics of the previous one.

## First stage: introducing ICTs

The initial introduction of ICTs in municipal governments was rather disorganized and haphazard. Their implementation and their maintenance relied on the interest and willingness of a few officials, generally young professionals with technological backgrounds who championed the development of the technologies and their use in the workplace. They agitated for the purchase of equipment, first for their own use and later to encourage collective application. Although this was taking place at the same time as ICTs were being introduced in other settings such as the central government and businesses, it is important to consider their arrival on the local scene because this points to a new kind of citizen who has professional training in ICTs. The approach of these young people is essentially technical, and their fascination with the new technologies lies in their assessment of costs and benefits. As they see them, those benefits relate primarily to saving time, saving money, modernizing, and improving management. As the municipal government begins to establish a formal informatics unit, the role of these young instigators gradually diminishes.

Chile still does not have people specifically responsible for introducing ICTs in municipal governments: this is being done by professionals who help informally with the purchase of computers. There are no informatics departments, no maintenance specialists, and no provisions for this item in the municipal budget. Programmes and operating systems are not compatible between machines, and they have generally been acquired informally.

The pattern of distribution of the limited number of available computers reflects the hierarchical structure of the institution. Thus, the first to receive the equipment are the senior managers' offices, even though it could be put to better use in other departments. The equipment is strictly controlled – one municipality kept all its computers in a locked office controlled by the administration. This first phase is followed by an expansion in the number of computers, at which point we see a shift towards better organization in the installation of these new technologies.

## Second stage: expanding ICTs

This stage, in which the provision of computer equipment is expanded, marks the beginning of a process of formalization, and the installation of computers

is consolidated, although not completely. All departments are gradually outfitted, and the sense of hierarchical exclusivity disappears. Computer use is "democratized" and a new objective is set: to equip professional staff with computers in order to ensure better management.

According to those interviewed, it is the town-hall management staff who demand better computer equipment in order to keep up with their counterparts in the national government and in wealthier municipalities. In other words, the demand did not originate from the users. In some towns, the demands of these managers were viewed initially as a further burden on scarce resources and as having more to do with professional jealousy than with efficiency. Yet this view will gradually change as the introduction of these technologies produces concrete results, such as improving municipal management by modernizing the provision of services.

Against this background, we can see that the introduction of computers in all the municipalities observed was based on a rationale of strengthening internal management and administration. This reflects the need to manage information within the municipalities, especially in finances and to create management databases. At the same time, efforts to introduce the new technologies are concentrated on service departments, such as transportation, where they are used for processing driving licences and vehicle registration applications, and for handling geographic information and the sanitation system.

The rationale behind the decisions on the distribution of ICTs reflects a definite interest in improving technical and administrative services, although this also has a significant impact on relations with the public, in the sense that functions are performed better and public services are improved. At the same time, we must note that this rationale pays no heed to the communicational and bridge-building aspects of the new technologies, thereby ignoring the issue of promoting citizenship.

Computers have had less impact in the municipal social services departments, where they are viewed primarily as a support for handling internal information. Officials explained this as partly due to the fact that efforts have been concentrated in the areas referred to above, but also due to the fact that professional staff in social services cannot really identify with the new technologies. One person interviewed indicated that the shortage of progress in this area reflected a lack of interest in new technologies on the part of his professional staff and a tendency to look down their noses at computer work – they see this as little more than glorified typing, something that is merely "a secretary's job". Through lack of knowledge, they lose sight of the real properties of the tool – its speed and its ability to store and process huge volumes of information and they reify it, assigning it traditional and devalued meanings. This view goes hand-in-hand with that of other officials who see no need for computers and feel that ICTs in social services are a luxury.

An important element at this stage in the introduction of ICTs was the delivery of the Social Stratification Program of the Ministry of Development and National Planning (MIDEPLAN). This software program provides a system for handling CAS II (Communal Social Assistance Committee), a tool for identifying extremely poor people and targeting assistance programmes at the neediest sectors. It was delivered under the Single National Software Project, as part of the campaign to modernize the state, and is intended to provide all municipalities, ***intendencias,*** provincial governments, regional offices and national ministries with a single, homogeneous and user-friendly system. It has been distributed free to communes, which can use it to streamline administrative procedures involved in surveying needs and allocating social benefits.[4] It has come complete with technical support and training. This was mentioned by all the municipalities and is regarded as one of the few experiences that they all have in common, although it does not seem to be of great concern to the individual communes.

While the specific value of this experiment is undeniable, it has not had a significant impact in terms of the provision of equipment. At the second stage, the municipalities have adopted various strategies that have allowed them to expand their equipment: some have diverted funds from other items, while others have obtained them through specific projects or through submissions to competitive funding programmes. Yet, despite the determined use of these mechanisms, there is still a good deal of improvisation and very little planning.

One municipality, El Bosque, was able to equip itself on a more sustained basis with funding from the Programme for Strengthening Municipal Institutions (PROFIM).[5] This poor commune stands out from the others in this respect. It used the funds to provide its employees with sufficient computers for their operating needs, it trained them, it standardized programs for handling internal documents, and it formalized the computer systems in use by paying for software licences. It succeeded in developing the Consulta 2000 information system, a computer program designed with a platform for centralizing information on the municipality's social and other services. It also allowed for internal networking to give all departments access to the same information for serving the public. Nevertheless, this possibility was never made used of. The program was installed, but not all employees had access to the internal network, nor did they receive the training manuals. Although 30 employees had been trained to use the program, only 2 were capable of working with it. External users were unaware of the program and the staff responsible for consultations with the public continued to rely on conventional methods. The failure to assign clear responsibilities and the consequent lack of maintenance and updating led to the project's being aborted.

This experiment is typical of the shortcomings found in the introduction of ICTs in the municipalities. Its failure highlights the lack of planning and the haphazard and mechanical approach that has been taken. There was no prior analysis of the structural and subjective conditions that might affect the

adoption of the new systems. Even more importantly, the experiment shows that the difficulties are not limited to a shortage of funding: there is also a management problem, in the failure to plan for an orderly and organized approach to implementing ICTs, with the result that introduction has been fragmentary and uneven.

Despite these clear limitations, we can already recognize the positive impact that new ICTs have had. The most obvious benefits are in the services area, where there has been a sharp improvement in providing prompt attention to the public. There is general agreement on the value of using information from CAS II records and on the enhanced efficiency that the introduction of computers has brought with it. As one of the officials said, "Now all our architects are doing their plans in AutoCAD instead of at the drawing boards."

## Third stage: acquisition of other technologies

Once computer outfitting is relatively complete, other technologies start to be acquired. Currently, the municipalities have Internet access, intranet, web pages, information centres, e-mail, and phone service systems. Not all have the same technological resources available, however: for example, El Bosque has more equipment, while Los Andes has less.

Every municipality has a computerization budget; and although the amounts earmarked for this purpose are generally low compared to other items, the fact that there is such a budget is an important indicator of progress in the implementation of ICTs. Several municipalities have actually doubled their computer budget allocations this year. "Today nobody argues if I ask for 25,000 pesos to buy a toner cartridge – two years ago they would have killed me for that!" said one employee.

It is at this point, and with this type of expansion, that the uncertainty of funding has become most evident. During the initial phase of introducing new ICTs, this uncertainty was not really a factor, and employees were content with basic internal implementation. Now the systems being introduced are more complex and require greater investment. Some municipalities do not have the financial means for Internet connections or networking systems. The installation of services remains incomplete, so in most cases it is difficult to provide proper maintenance of the equipment. Technical shortcomings are becoming more evident, and more and more officials are demanding improvements in this area. This means more sophisticated technology, primarily for internal use.

At the same time, we can see a growing maturity and consolidation of the existing equipment. For example, one of the municipalities has adopted a structured training plan: training is no longer offered indiscriminately, and employees are invited to compete for training grants. The benefits of this implementation are also becoming clearer. Employees recognize that, thanks to ICTs, there have been improvements and innovations in municipal services and as a result they feel that a great deal of bureaucracy has been eliminated.

The introduction of other technologies, beyond computers, reveals the interest among employees in generating new initiatives, including some that were beyond the current ability of the process to support. As a result, some have been unsuccessful and have represented wasted efforts. As an example, the commune of El Bosque introduced Munimatic, which offered an automated information source on municipal services. One of the officials related this experience to us: "We set it up in the courtyard so more people could have access to it, but people did not use it because they didn't know how, and there was nobody to show them. They preferred to consult the system inside, although to do that they had to use a keyboard and a screen. Finally we took the computer back – it was a waste of money." This example shows the need for advance thinking about what users can really do with the new technologies offered them.

Today, there are opportunities to secure support from other sources in implementing ICTs. This implies new alliances and the involvement of other players: for example, all the municipalities have negotiated contracts with the private sector, specifically with Telefónica de Chile, for introducing mechanisms such as information and help lines. They also have agreements with universities to offer computing programmes and training for officials. They have expanded their relations with other government ministries, and some municipalities are working jointly with the Ministry of Education and Health.

The creation of web pages is another sign of this expansion. Except in Puente Alto, the municipalities have created their own web sites, although the sites are not yet functioning properly. They face a number of problems, such as lack of clear objectives, a clearly defined audience, and dedicated personnel. For these reasons, the content portrays individual visions rather than a collective view of the municipality. The municipality of Los Andes actually has three web pages. The information in them has not been updated, there has been no publicity about their existence, and those we interviewed dismissed them as boring, uninteresting, poorly done, not reflecting activities in the municipality, and providing irrelevant information.

The lack of interest in this instrument, the web page, among municipal officials is perhaps justified in the sense that the community with which they are working has no access to the Internet. In fact, they see it as primarily targeted at their peers in other municipalities.

The situation shows that the introduction of new technologies at the municipal level has been a slow and difficult process, primarily because the approach has been incoherent and incomplete, with a severe lack of planning. Moreover, the implementation focus has been limited to providing the most utilitarian elements that the new technologies offer, and there has been little interest in taking advantage of the opportunities they open. Efforts have been directed essentially at meeting the internal needs of the municipal government, rather than reinforcing contacts with the users of the services they manage. This has had a negative impact on community involvement and participation in communication processes.

What the municipalities need, then, is to develop an overall vision of the possibilities offered by ICTs. Yet, given their precarious financial situation, the existing burden of work and the shortage of planners in this area, proper implementation will require concrete support in the areas we have described.

## Individual narratives

With the introduction of new technologies into society, at and beyond the local level, individual citizens have begun to produce their own narratives about ICTs. These narratives have to do not with the political space or the public space, not even at the local level, but rather with a private world, the world of family. This is where the appropriation of new technologies is given its meaning and where it acquires value. In this context, as in the case of the municipalities, the new technologies translate initially into specific tools such as computers, and then perhaps mobile or cellular phones, or other uses that involve computers, such as Internet access. In other words, for most of the people participating in our research, the new ICTs are concrete objects to which, as we shall see below, they assign certain meanings constructed from the interests of family life.

For the groups participating in this research, the new technologies are not part of either their daily working life or their personal life. Their narratives reflect primarily what they have received from other messages, such as those of the market, politicians or their own children. Poverty and generational considerations have left them out of the loop, and they have no direct personal access to new ICTs. Consequently, most of the narratives collected do not relate to concrete experiences, but rather a representation, a fiction, an idealized image of an object. These people "exist" in a narrative from an imaginary world built around a reality that they observe and develop symbolically (Chillon, n.d.). On that basis, they construct a complex territory in which their beliefs, expectations and intentions converge.

The narratives we collected speak to us primarily of a history of exclusion. Neither men nor women see themselves as key players in ICT innovations. On the contrary, they see themselves as a group that is marginal to ICTs. Thus, when they use "I" they are in effect distinguishing themselves as subjects who are "outside" the world of ICT users, at a distance that varies to some extent according to gender and age.

In the first place, adult males speak of a generational situation where they feel they are "too old for ICTs". These people may be 35 years of age, and so they were never part of the government education network Red Enlaces,[6] which has provided massive access to ICTs for children in the public school system. They have no access to ICTs through their occupation or other channels: in short, they do not use them. This exclusion they accept as something of no great importance in their lives. Their vital preoccupations lie in other areas that have nothing to do with new technologies. Currently they are worried about unemployment, about health care and, in general,

their economic constraints. They are interested in ICTs to the extent that they can help resolve these problems, and from that viewpoint they are prepared to learn and to take training in this area. This is not to say that they do not recognize some of the benefits that ICTs offer, as modern tools that could possibly expand their horizons by opening the road to new knowledge, but their reality boils down to this: "We have no possibility of access to a computer."

Another group, of younger men between 17 and 20 years (in Rancagua and El Bosque), experience their exclusion from ICTs in another way. They took part in the initial Red Enlaces initiatives, where they were trained in using computers and the Internet, but that experience had no lasting impact on their education or their lifestyle. In their narratives, these young men were unable to separate their assessment of ICTs from the low opinion they had formed of them in their formal education. That was, to a large extent, a negative experience of which they have unhappy memories. With a certain justification, they see the introduction of ICTs as a continuation of traditional education. They recall that computers were introduced into their schools with a conventional rationale, maintaining the same educational methodology, such as exerting strict control over the equipment. In this way, their feelings of insecurity and resistance towards other aspects of school life were transferred to this new instrument. They feel that the arrival of the new technologies in their schools exposed them to new demands, such as the ability to concentrate and to study, which their limited interest and their tenuous educational background made it very difficult to fulfil. They have little interest in school. Their preferred group activities revolve around sports or ***batucadas***.[7] Based on their experience, they tend to view ICTs negatively and find them uninteresting and boring: "I don't like computers because I like to do things by myself. I don't want a machine to give me the information I'm looking for; I want to go and find it." ICTs, then, take on value only to the extent that they can provide some kind of basic entertainment, such as playing games, or an economic benefit: "copying CDs to sell them".

Behind this indifference and the unease that these young people show towards ICTs, we can see the signs of marginalization and exclusion. Their expressions may conceal the reality of their relationship with the new technologies: they do not have access to them and they are limited in the use they can make of them. They represent a group of people who are "outside the technological loop", a group that is "between two ages": that of the younger children who today have access to many aspects of modernity through the school, and the "older group", whose children in some way represent a connection to this world. The group interviewed is typical in terms of marginalization, since it has no access to ICTs in any space, not even symbolic space. Moreover, its members are technologically illiterate, as are most of the poor of their generation.

The narratives offered by women have their own special features. They also speak of exclusion but – in contrast to men, who recognize and openly

admit their status – their concept of ICTs is not that of something that is feasible in their own lives, but of something that might be possible for their children in the future: "If only we had a computer at home, so the children could use it! They are the ones who have the intelligence and the need to use it." Of all groups, it is women who are the furthest removed from ICTs. The absence of "I" in their statements about the new technologies, however, does not prevent them from seeing that these tools can be of great value to others – but "not for us, just think what people would say". As with men, they have no access to the media in their daily lives, and yet it is among them that we find the strongest representation of ICTs as a medium offering new social possibilities, specifically in the field of education.

For both groups, men and women, statements about the new technologies relate to the symbolic space of education. We speak of "symbolic space" in the sense of a "representation" that contains multiple meanings for people, meanings that do not necessarily belong to the object represented. People do not look at computers from their roles as fathers and mothers. They value them for their educational dimension, i.e. as instruments that their children must have access to and know how to use. They see no other possibilities for using them. Consequently, there is a consensus that ICTs must be managed and controlled so that children will study. Any other use, such as for playing games or seeking information, is seen as a waste of time.

In short, for the groups participating in our research, ICTs are a means of access to a good education, part of an important educational phenomenon from which their children must not be excluded. As one woman said, "I believe that for a child not to know computers in the future will be just about like not knowing how to read."

The importance that participants attach to these technologies as instruments that their children must understand and use in their education brings us to the dimensions of integration and social mobility with which education is viewed in our countries, i.e. as a means of escape from poverty and inequality. This is especially important and "true" for the poorest groups since they have no other means of improving their lot. In this context, ICTs represent a key component of education, a new tool that their children must master in order to get a sound education. From the viewpoint of participants in our research, ICTs constitute the new educational scenario and are endowed with countless properties that make them the guarantor of a solid education. They see their children as the current protagonists of these changes, and they feel that ICTs are giving their children new elements that they themselves never had. They say that, while they were left out, this cannot happen, and is not happening, to their children.

It is the new technologies, and their educational dimension, that hold for this group the illusion of integration and equity. They know that their children have access to ICTs in school, through the Red Enlaces network. For them this is enough because they have no other grounds for assessing the quality of that access. Some parents have watched their children use computers, and

they are proud to see them learning new skills. This is the limit of their assessment – they fail to see the differences with other social sectors that have much more complete and sophisticated access to the new technologies. As one participant said, "My son goes to the Colegio España – it's well known and it has computers. It may be a public school, but no one can say to him, hey, you're not in a private school, so you have no idea about computers." This statement, with which everyone agreed, does not reflect the inequality that is so evident in the reality of ICTs. It ignores the fact that children from higher-income groups have access to better technological systems than those offered by the Red Enlaces network.

An interpretation of these narratives allows us to re-semanticize our own experience through the new technologies. In the presence of ICTs, people's narratives about their own lives, marked by exclusion, are turned into a narrative of expectations for inclusion through others (their children), and this neutralizes talk of differences and produces an illusion of equality.

The following table demonstrates this point.

| Narrative | Player | Situation | Time | Outcome |
|---|---|---|---|---|
| **Experience** | Self | Exclusion | Past | Inequality |
| **Expectations** | Others | Inclusion | Future | Equality |

The collective statements on ICTs, then, represent the following narrative: From a recounting of experience emerges an excluded "I", which in relationship with the new technologies is seen in the past, and ultimately as the product of a situation of inequality. The strong perception of exclusion that underlines this statement is neutralized with a narrative of expectations, in which the other (the child) emerges in a future situation in which ICTs allow inclusion and therefore open the way to equality.

A new narrative therefore emerges that contains the illusion of equality of opportunity. From the moment the subject assumes that he will have equal opportunity, the same access to ICTs that others have, this transforms his perception of himself: "having" becomes "being": what I have is equal, therefore I am equal. This situation immediately reduces the feeling of difference and diminishes one's social distance from others.

García Canclini (1997), referring to Baudrillard, speaks of two distinct types of values in society. As an escape from the confines of the Marxist dichotomy between "use value" and "exchange value", Baudrillard proposes two further forms of value: "sign value" and "symbolic value". These two values when assigned to an object bear very little relation to its practical uses. The sign value has a connotation that is associated with the object: a brand-name computer is not the same thing as a clone made from components. Yet what is of greatest interest to us here is the symbolic value,

which has a meaning distinct from the sign value that individuals or groups in any society place on an object. These classifications reflect the logics that govern the circulation of objects in society. The first two values – use value and exchange value – have to do primarily with the material nature of objects. The other two refer to the process of their signification.

For the groups participating in our study, the new technologies have no use value. In their case, non-availability means that this category does not apply. But those instruments are "charged" with a potent symbolic value since they represent a transition to a future in which there will be equality of access and opportunity.

As we have seen, it is in the private sphere that the narrative about ICTs tends to dwell and where people identify their most significant impacts. In their statements, there is no room for the "local space". In contrast to municipal governments, individual men and women seem incapable of identifying clearly the impact that the changes in this area have had on them. Generally speaking, people perceive their relationship with the municipality as based on the same codes and the same conventional channels as ever.

## The relationship between the municipality and the community

One focus of this study was to observe the development of ICTs as instruments for strengthening the bond between municipal governments and their communities. This analysis involves some thinking about the nature of "community communication". Using a diagnosis of current local scenarios, Fernando Ossandón (1994) defines the concept of community communication as "the set of relationships for exchanging messages and constructing meanings that happen through direct contact, the dissemination of information – through formal and informal means of communication – the delivery/use of services, community participation in the media and campaigns to reinforce communal identity and the like". This definition, which identifies each of the components involved in the communication process, requires us to understand the communication role both of the municipality and of the citizen, and to question the quality of the bond between the two and the impact that new technologies have had on it.

## Municipal governments

As we have seen, in introducing ICTs, municipal governments have failed to move beyond the stage of allocating resources to their own internal development. The rationale underlying this approach has been "to strengthen internal workings so as to be more efficient externally". Yet this avoids the issue of how to develop a better communication system that is at the service of the community. The changes proposed in this area are still in the realm of good intentions, of projects for the future. For example, the municipal government of El Bosque has plans for what it calls a cyber café: it will place

a computer in the Casa de la Cultura (House of Culture), a place that currently has no access to the Internet and that is still awaiting the arrival of broadband service in that part of the city.

The main forms of communication that the municipal governments generate are in the conventional mode, which is to say they represent one-way communication: messages are transmitted without any thought to establishing a relationship of reciprocity with the recipient, or the possibility of exchanging functions between transmitter and receiver. In this way, communication at the local level has been designed primarily to serve the needs and interests of city hall. Currently, most municipalities use various media for transmitting their messages – newspapers, radio and even local television – but they are used primarily as part of a marketing strategy, where the collective aspect is obscured by individual references, focusing primarily, of course, on the mayor himself. In all the municipalities we visited, we could see that as far as information and public relations officers were concerned their main job was to create and publicize a favourable image of the city. Their efforts were focused on protocol events, ceremonies and other happenings. In doing so, they lost sight of communication as a planned process for placing information at the service of the community.

As a result of this approach, the municipalities have not generated any continuous communication channels devoted to meeting the information needs of the community. The results in this area have been modest, no doubt because so little effort has been devoted to it. For example, in one city our attention was drawn to a newly created notice board as an important step for informing the public about the local government.

Individuals on close terms with the city government indicated that they tend to cultivate personal relations with key municipal officials in order to keep themselves informed. By having "friends" in various programmes, they will be aware of what is happening in areas of interest to them. This means, in turn, that people have no relationship with the city government as a whole, but only with a limited number of officials (one or two) who can meet their needs.

This kind of personalized relationship produces other results that cannot be classified as direct benefits of the kind that the municipality was hoping to deliver, such as the possibility of becoming a space for social encounters and human relationships. One young man told us, "We get along fine; we know people." The municipality offers a form of social integration that many cannot find anywhere else. Such practices can make people feel close to the municipal government, but at the same time they will be relatively uninformed about what it is doing and will have no way of forming an overall assessment of what it is offering.

## The public perception

The ties that are established with the municipal government by means of individual relationships between officials and users have a negative impact

on public perceptions. The municipal officials participating in this study claimed to have technical indicators showing very high performance ratings, and yet they recognize that the community view is not consistent with such ratings. People tend to have a poor opinion of their municipal government, and most are unable to recognize the benefits that it provides. The men and women who attended our focus groups were recipients of some of the services offered by the city, such as employment counselling, remedial education, sports facilities and training in non-traditional occupations. This means that they were gaining direct benefits. Yet, they were constantly critical of the management of municipal governments. They saw them as not very effective – lack of information, long waiting time, red tape, surly service – and felt that the requirements for obtaining benefits were too onerous.

Beyond the lack of information, the negative perception of municipal governments is reinforced by other long-standing municipal practices that have yet to be eradicated, for example the ideological factor that determines the relationship between city hall and organizations that have dealings with it. When their political stances coincide, the relationship can be mutually fruitful, but it will not be if they are at odds. In this case, it is the community organizations that have the most to lose, since they will be left outside the information loop generated by personalized networks.

This situation was exemplified by the community organizations working with the municipality of Puente Alto. At the time of our research, the newly elected mayor was from a party opposed to the positions endorsed by members of those groups. In the focus groups, they complained that they were completely cut off from municipal programmes and activities because the mayor refused to meet with their leaders. As organizations, they were left with no information, and this gave rise to many rumours: "we hear they are going to do away with social programmes", or "they say they are going to work with a different kind of organization".

## A new relationship

The picture described here presents a kind of relationship between municipal government and community based on an approach that is not very democratic and that fails to take full advantage of the possibilities of community communication. This suggests the need for a different approach to management, one that pays greater attention to the right to communication, something that is currently lacking in the municipalities. Indeed, the right to communication needs to be upgraded to an essential right of citizenship.

The right to communicate has both an active and a passive component: the right to inform and the right to be informed, to be a transmitter and a receiver. The right to communication is broader than, but includes, the right to information (Servaes 1998). In turn, people's right to communication, considered as a basic right in terms of public affairs and participation, includes rights and responsibilities that are both individual and collective.

This brings us directly to a new understanding of community communication, which, depending on its quality, will either encourage or frustrate community participation. In this context, information, which is a constituent part of communication, becomes a participatory act and must be guaranteed as a right and a responsibility for each of the players in the communication process. This approach demands a broader concept of participation, which will be incomplete unless its ultimate goal is to perfect the communication process. The right to communication is no different from the right to participation.

From this perspective, the new technologies take on an importance that demands a transformation in the logic by which the partners in local communication work and relate to each other. Municipal policies for promoting participation must move beyond the requirement that participants be physically present for participation to occur, a requirement that belongs to an outdated kind of relationship. In other words, there must be a change to the traditional focus as a result of which, in the communications field, policies for creating participatory spaces were passed over in favour of mounting countless "events" that left little space for effective, thoughtful participation (Silva 1999). If they adopt this concept of participatory communication, municipalities and communities can establish a more fruitful relationship in which ICTs can have a new impact.

## Conclusion

ICTs are sparking a worldwide revolution, a revolution that revolves around information. This means new languages, new instruments and new technological facilities that will yield great benefits but that also imply significant costs. Information has acquired a new value that, depending on how accessible it is, can signify integration or domination, opportunity or exclusion. This worldwide phenomenon of communication is inserted into a specific national context, with its own characteristics, one of the most dramatic of which is inequality. We are referring to social, economic and cultural inequality that remains indelibly stamped on our country and that manifests itself in various ways. It is this context that gave rise to our research objective: to produce knowledge about the impact of ICTs at the local level and specifically to observe how they can be transformed into an instrument for citizen participation and empowerment.

Our examination of the situation in several municipalities and the groups that relate to them suggests the following conclusions:

(a) The new ICTs are not yet being used to strengthen relations between the municipal government and the community (represented in this study by people with ties to the municipalities) or to foster participation.

- The ICTs have been regarded primarily as synonymous with computerization, and the introduction of ICTs has therefore focused on the mass provision of computers.
- Municipal governments have introduced the ICTs with a utilitarian, mechanical rationale, aimed primarily at improving services rather than at fostering citizen participation and empowerment.
- Municipal social services have not been considered as a priority area for installing the new systems. This has led to inequality in the distribution of ICTs within municipal departments and programmes.
- The people participating in this study, representing low-income groups, have no access to ICTs in their daily life.
- In addition to the foregoing, there are economic constraints and management problems within municipal governments that have delayed and fragmented the introduction of ICTs. The lack of planning has exacerbated the haphazard approach to introducing the new systems in municipal governments.
- The foregoing has meant that key aspects of this undertaking, such as highlighting the fundamental role that ICTs can have in establishing bonds between municipality and community, have not been considered. Community empowerment, broad and efficient channels of information, and citizen participation, understood as impacts of ICTs, are dimensions that have only recently begun to receive attention in this scenario.

(b) ICTs have a community impact that is independent of the municipal government.

- The impact of ICTs crystallizes in the private rather than the public sphere. Participants are unaware of what municipal governments are doing in this area. ICTs have meaning for them only in terms of educational possibilities for their children.
- Citizens' perceptions about ICTs reflect both current exclusion (for adults) and future inclusion (for their children) through education. Their children are enrolled in public schools, through which they have access to ICTs.
- ICTs are equated with education in the opportunities they hold for promoting social inclusion. They take on symbolic value. Computers, specifically, are valued for their educational dimension. There is no perception of other uses for them.
- Introducing ICTs as a route to social inclusion changes the way people speak about their lives: talk of exclusion disappears and talk of equality emerges. In their narrative, they do not distinguish quality of access to the new technologies, and the mere fact of having access banishes (symbolically) the differences that they express in other settings.
- This produces a perverse logic: the belief that common access to the new technologies will generate equality.

(c) The issue of ICTs as a communication instrument to promote participation has yet to be addressed.

- Participation is not necessarily or solely dependent on physical encounter between citizens and the municipal government (in information sessions, events, "town hall meetings" and roundtables).
- A logic must be established that understands communication – based on information – as participation: by informing and being informed (i.e. communicating), people participate.
- According to this logic, ICTs become fully functional: in this way they acquire their real use value and are not distorted with the symbolic value that is accorded to them as a result of exclusion.

Finally, we believe that the following conditions must be met:

- A transformation in the approach to working with and managing ICTs, especially in terms of citizen participation and the communication dimension.
- Access to ICTs which calls for planning and installing equipment, programs and content. It is these instruments that will broaden the forms of access to information.
- Access to information. Inequalities in this area create inequalities in levels of participation and therefore in citizen empowerment.
- Training in the communications area, which must include ICT considerations.

## Notes

1. Presidential address on the state of the nation, May 21, 2000. Ministry of Communication and Culture, Government of Chile.
2. The research was conducted in four municipalities in the following communes: El Bosque (urban and poor), Puente Alto (urban, middle-class), Los Andes (rural) and Rancagua (urban).
3. The term ***technical–communicational*** is used because the driving force behind the development and dissemination of new information and communication tools have not been solely or even primarily communicational.
4. Ministry of Development and National Planning <http://www.mideplan.cl>.
5. PROFIM is a government programme to improve municipal management and the quality of municipal services provided to the community.
6. The Ministry of Education undertook this experimental project with information technology and digital networks for publicly supported schools in Chile in 1993, as part of the education reform.
7. ***Batucada*** is a word of Brazilian origin that is used in Chile for groups of youngsters who turn out at political demonstrations and liven them up by beating drums.

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# The Internet and local governance: Towards the creation of a community *habitus*

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## From continuous space to virtual city

The city is the place that gives rise to the characteristic traits of any era, as Florence and Venice did for the Renaissance or London and Paris did for modernity: today the paradigm of the city is globalization. But this applies not only to cities that concentrate global political and economic power within a defined political and administrative jurisdiction, such as New York, London or Tokyo (Sassen 1991), it applies as well to all those cities that are able to transcend their boundaries and exist on the Web, so that physical and virtual presence, local and global horizons, constitute the two dimensions of their citizens' lives.

In research on urban issues, the city is generally treated as a physical and social space, not merely as a collection of streets, parks, buildings and infrastructure but also as a set of social practices and relationships that produce and reproduce it and that are unique to a given space and time. Yet in the context of the "macro processes" of globalization, "informationalization" and urbanization that characterize our era (Borja and Castells 1998), the dizzying speed with which the latest generation of information and communication technologies (ICTs) are spreading calls into question such a conceptualization, for it incorporates a new dimension of the city, that of virtual space.

From this perspective, the city is not only a physical and social space, it also has an intangible space in which social practices and relationships unfold and influence the production and reproduction of this space, just as they do with physical space. New ways of producing goods and services, new habits, innovative kinds of association and lifestyles, affective and sexual relations, approaches to managing infrastructure and urban services, administration and citizen participation are just some of the practices that are increasingly to be found. "Teleproduction", "telebanking", "teleworking" and "telestudying" are the names applied to these new forms of interaction and production.

Virtual space, in contrast to presential space, is totally artificial, a human creation. For Javier Echeverría (1999), "it is a new form of supernature resulting from the technoscience that has emerged in countries that have made the greatest progress in technology and science". ICTs are the infrastructure of this space, just as urban road and utility networks are for physical space. In this artificial space of reticular structure, it is bits and not atoms that circulate (Negroponte 1995). It is the "space of flows" (Castells 1998), and not the space of places, nor that of "non places" (Augé 1996).

This new territory has its own spatial and temporal dimensions. In physical territory, space is continuous, while in virtual territory it is time that is continuous. We have neither day nor night, neither winter nor summer, there are no vacations or holidays, and for this reason we speak of continuous time – time is always, it is Internet time. Another aspect, no less important, is that this is a self-regulating and borderless space, where the logical tenets of modernity, primarily that of the nation-state and its political and administrative jurisdiction, are nowhere to be found (Schiavo 1999).

The information society is our condition, but what kind of information society are we heading for? Are ICTs an instrument for a new kind of development, or the source of new inequalities? Will they reinforce the model of the dual city (where wealth and poverty are contrasted in a shared space), or will they foster physical and social integration?

In developed countries, the Internet is used increasingly in cities' knowledge management, and it has already demonstrated its power to transform cities in positive ways, both to generate new kinds of community and local development and to offer an alternative channel for communication and citizen participation. There are many examples. The town of Jun near Granada in Spain has gained international recognition as one of the first places in the world that guarantees Internet access for all its residents, and this has brought about significant changes in the local economy and way of life <http://ibrujula.com/news/noticia.php3?id=9954>. Another example is the network of cities embracing Castellón, Valencia and Alicante, which are part of the InfoVille project <http://www.infoville.net>. Among larger cities, we may point to the experience of Bologna <http://www.comune.bologna.it>, spearheaded by the Hiperbole organization, in which community organizations work as partners with the public and private sectors of the city. A further example is the digital city of Amsterdam <http://www.dds.nl/dds/info>, which was inaugurated in 1994 and in which all urban social players are increasingly involved.

Less developed countries have not seen developments of this kind. Indeed, more than half of the world's people have never made a single telephone call in their lives. "The new network society is not a society of classes, but a society of inclusion–exclusion and of meaning–vacuum," said Manuel Cassels in a recent interview (2001). The separation of humanity into two spheres of existence, the so-called digital divide or the division between "info-poor"

and "info-rich", represents a defining moment in history – it is a new divide that has been introduced in the world. What is clear is that these technologies, like most others, are neither good nor bad in themselves – that will depend on the political and economic system in which they are inserted – but neither are they neutral (Finquelievich and Schiavo 1998), by which we mean in this case two things: "ICTs cannot perhaps make up for the lack of basic urban utilities or problems of malnutrition or basic health service coverage, but if we fail to incorporate them this will not only deepen the technological and socioeconomic gap between rich and poor countries, and between regions, between cities and between rich and poor neighbourhoods within those cities, it will also imply the creation of a new category of outcasts (in the literal sense of the word), not only in terms of differentiated access but these new outcasts will be condemned to live in only one dimension (the presential, and not the virtual) of our world as it enters the new millennium" (Schiavo 2000).

## The network society as a new field

Emilio Tenti Fanfani (1994) maintains that the structuralist constructivism of Pierre Bourdieu is one of the most fertile and creative sociological theories of our day, since it allows us to construct an image of a society that is more nuanced and flexible, more articulated by multiple mediations and more sensitive to social diversity. From this viewpoint, we can consider players, their practices and their products as situated in specific fields, but these fields are not free-floating particles exempt from general rules: they are elements of a society that is one and at the same time multiple, diverse and articulated through mediations.

For Bourdieu (1997), the definition of "field" must be understood in relation to the concept of "***habitus***" and the "capital" that it contains. "A field may be defined as a network, or a configuration, of objective relations between positions. These positions are objectively defined, in their existence and in the determinations they impose upon their occupants, agents or institutions, by their present and potential situation (situs) in the structure of the distribution of species of power (or capital) whose possession commands access to specific profits that are at stake in the field, as well as by their objective relations to other positions (domination, subordination, homology, etc.)."

"Capital or a species of capital is that which is efficient in a given field, as a weapon and as object of struggle at the same time, it is that which permits its owner to exercise power, influence, i.e. to exist in a given field." ***Habitus*** is a way of perceiving, thinking and acting, of incorporating one's capital into the way one does things.

From this perspective, ICTs give rise to new particularities in the field that shapes the current network society, with its own structure of inter-positional relations, with the determinations indicated and with a distribution of power that is not yet definitively established, which means that it responds

not to the political logic of the continuous city but to a new mode that has yet to be completely appropriated (Schiavo 2000).

Echeverría (1999) points out that the capital needed to "dominate" this new field consists of three variables: networks (hardware, software and telecommunication links), users and information. He concludes that, at least until now, the dominant players are the transnational "teleservice" companies and that states are entities in decline. Yet there is a significant distance between "existing" and "dominating": the former is a necessary condition of the latter. In this paper, we attempt to define the specific "capital" (economic, cultural, social and symbolic) that all urban players (public, private and collective) must have in order for a particular local community to "exist" as such in the network society, and the modes needed to innovate, strengthen and find new forms of development through the use of ICTs.

Each field has its own species of capital. In the field of the network society, the specific capital would be composed of the variables indicated by Echeverría. If we look at the variables in relation to cities, we might say that cities already have a portion of this capital: on one hand, they have not only information but knowledge about their local space, and, on the other hand, all of their citizens are potential users. How can we put this initial species of capital to work so that cities can exist in this new field?

## Online government at the local level in Argentina

Using this theoretical framework, we began by examining local governments with sites on the Internet to see how and for what objectives they were using the Internet, to identify the features of the types of "capital" at their disposal. Our intent was to look for new forms of community and to see how they appropriate ICTs and how they occupy virtual space.

From this perspective, we established three conditions and then analyzed the Internet initiatives of municipal governments in Argentina.

The first condition has to do with the "basic function of the municipality" and with the use of the potential of this new platform. We looked for sites that were using the platform in order to enhance and broaden the provision of services to the public, especially those that took advantage of interactivity and the ability to provide continuous service online, as well as those that promoted new channels of communication and citizen participation over the Internet.

The second condition seeks to identify the relationship between municipal initiatives and what they contribute to popularizing Internet use among all local players, "the construction of an Internet for all". We were primarily interested in efforts targeted at diminishing the digital divide by publishing e-mail addresses, encouraging public access to the Internet (free or not), sponsoring forums and discussion groups of interest to the citizens and community organizations, or offering some kind of training in Internet use.

The third condition refers to the "promotion of local development in global space". We looked for sites that not only provided specific local information but that used the platform to expand and diversify approaches to the promotion, production and marketing of economic, social and cultural goods and services.

**Table 1. Municipalities with official web sites**

| *Total* | *With web site* | *% of total* |
|---|---|---|
| 1,931 | 190 | 9.84 |

Source: Department of Municipal Affairs, Ministry of the Interior, August 2000

**Table 2. Population of municipalities with official web sites**

| *Total* | *With web site* | *% of total* |
|---|---|---|
| 32,615,528 | 13,443,263 | 41.22 |

Source: INDEC (1991)

In August 2000, only 190, or 9.84 percent, of the 1,931 Argentine municipalities had their own web site. Yet, in population terms, those cities account for 41.22 percent of the total. This situation shows that cities with the greatest demographic concentration (which in the case of Argentina tend to be the most important government centres and therefore have the greatest economic, social and cultural capital) are those where the bureaucracy is most inclined to the use of ICTs, reflecting the need for more efficient administration as well as pressure from civil society. If we look at the list of official sites by province, we see that the two most populous provinces of the country, Buenos Aires and Córdoba, together accounted for 60.52 percent of municipalities with official web sites in 2000.

In terms of the topics covered at the sites, 86 percent of those analyzed were restricted to information on the municipal government (and in most cases on the city itself), thereby failing to explore the broader possibilities for interaction that this hypermedia support allows. Moreover, in 69 percent of cases, the information was designed to enhance the stature of local government officials, something that, when we think of ***habitus***, suggests that the conventional practices and approaches used by governments in presential space have simply been transferred to this virtual space.

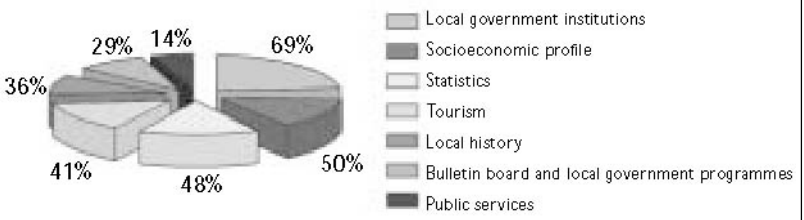
**Table 3. Distribution of municipal web sites, by province**

| *Province* | *Number of municipalities with web sites* | *Province* | *Number of municipalities with web sites* |
|---|---|---|---|
| Buenos Aires | 55 | Misiones | 2 |
| Catamarca | 1 | Neuquén | 1 |
| Córdoba | 60 | Río Negro | 6 |
| Corrientes | 1 | Salta | 4 |
| Chaco | 2 | San Juan | 1 |
| Chubut | 8 | San Luis | 1 |
| Entre Ríos | 7 | Santa Cruz | 3 |
| Formosa | 1 | Santa Fe | 12 |
| Jujuy | 1 | Santiago del Estero | – |
| La Pampa | 1 | Tierra del Fuego | 1 |
| La Rioja | 18 | Tucumán | 1 |
| Mendoza | 2 | | |
| | | **Total** | **189** |

Source: Cravacuore (2000)

That the genesis of ***habitus*** in the use of ICTs is incomplete can be seen in the breakdown of topics covered: only 14 percent of the web sites offered services to the public and in no cases did the service function meet the three conditions specified above.

**Table 4. Web site topics**




Source: Cravacuore, 2000

If we examine the kinds of services offered in these 14 percent of cases and measure them against our first condition, i.e. using the potential of the platform to improve and expand service to the public, while all the sites offered information on how to conduct various procedures, the actual process could

be accomplished online in only three cases. One of these, the Urban Municipality of La Costa, allowed taxes to be paid online, reflecting the fact that a portion of the population is transient. As to the second condition, "building an Internet for all", only three sites, and they were not the same as the previous three, offered free e-mail and links to discussion forums.

When we come to the third condition, we found no sites using the Web to promote local development beyond their borders: most of them provided specific local information, but they did not use this knowledge to expand and diversify interaction in global space. We did, however, find some official sites that were moving in this direction. An outstanding example is the Pinamar Telephone Cooperative, Telpin <http://www.telpin.com.ar>. Pinamar is a city on the Atlantic coast, where the main business is tourism; and the cooperative's site represents an innovation in that it looks beyond its own activity, which is to provide telephone services, and offers a platform where the city can promote tourism. It began by listing hotels ranked by categories and services, and hotels were invited to sign up for an online reservation system.

If we compare the Telpin site with that of the Pinamar municipal government <http://www.pinmar.gov.ar>, we see that it is the telephone cooperative, and not the local government, that has taken the initiative to promote local development in global space. Its specific activity gives it the capital to act in this field: it has the networks, the users and some of the information. But it also has ***habitus***, which is what leads it to innovate, to find new ways of offering services over the Internet and to go beyond the confines of its own activities and functions to promote the existence of its city in the network society.

## Education as the key

Based on our analysis of the web sites of Argentine municipalities, we can rethink the specific "capital" that all urban social players (public, private and community-based) would need in order for a particular local community to "exist" as such in the network society, recognizing that the factors they have in common are an unawareness of the potential of this new platform and a lack of ***habitus***.

The transition from the industrial society to the information society also implies a change of knowledge systems, and one of the dimensions of this transition is the crisis of the traditional categories with which we think about the world we live in. In the sites examined, reticular space is treated as if it were continuous space. The key is to understand what the space generated by ICTs is so that we can then think about how to "exist" in the network society – the question boils down to seizing the opportunities that these technologies offer for adapting to the changes that they themselves generate.

This requires us to come to terms with ICTs because knowing how to interrelate through telecommunications devices is the new form of

**Table 5. Services to the public, by type**

| *Type of service* | *Municipality* | *Address* |
|---|---|---|
| Free e-mail | Gral. San Martín | http://www.sanmartinvirtual.com.ar |
| | Las Rosas | http://www.las-rosas.com/municipalidad.htm |
| | Río Gallegos | http://www.mrg.com.ar |
| Forums, etc. | Gral. San Martín | http://www.sanmartinvirtual.com.ar |
| | Río Gallegos | http://www.mrg.com.ar |
| Online procedures | Gral. Pueyrredón | http://www.mardelplata.gov.ar |
| | La Matanza | http://www.matanza.mun.gba.gov.ar |
| Payment of taxes | La Costa | http://www.costa.mun.gba.gov.ar |
| Information for citizens | Baradero | http://www.baradero.com.ar |
| | Gral. Pueyrredón | http://www.mardelplata.gov.ar |
| Procedural guide, official bulletin, digests, by-laws, etc. | Gral. San Martín | http://www.sanmartinvirtual.com.ar |
| | Junín | http://www.junin.mun.gba.gov.ar |
| | La Costa | http://www.costa.mun.gba.gov.ar |
| | Malvinas Argentinas | http://www.malvinasargentinas.gov.ar |
| | Moron | http://www.moron.gov.ar |
| | Tandil | http://www.tandil.mun.gba.gov.ar |
| | Zarate | http://www.zarate.gov.ar |
| | Agua de Oro | http://www.aguadeoro.gov.ar |
| | Huinca Renancó | http://www.huincarenanco.gov.ar |
| | Formosa | http://comunidad.ciudad.com.ar/argentina/formosa/ciudaddeformosa |
| | Río Gallegos | http://www.mrg.com.ar |
| | Las Rosas | http://www.las-rosas.com/municipalidad.htm |
| | Rosario | http://www.rosario.gov.ar |
| | Villa Gob. Gálvez | http://www.coopvgg.com.ar/municipio |
| Information on municipal accounts, budget, etc. | Zarate | http://www.zarate.gov.ar |
| | Huinca Renancó | http://www.huincarenaco.gov.ar |
| | Laguna Larga | http://www.municipalidad.com/llarga |
| | Las Vertientes | http://www.municipalidad.com/lasvertientes |
| | Formosa | http://comunidad.ciudad.com.ar/argentina/formosa/ciudaddeformosa |

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socialization in the network society. We must master "the language of the machine". It is not enough to know the language or languages with which we interact in our social sphere. We must learn a new language: as Echeverría (2000) says, we must learn to read and write images, to read and write computer programs, to read and write web pages, to establish links between text, images and sounds. As he sees it, an educated person should know how to gesture in front of a television camera, work with a computer, navigate and protect himself, design his own identity symbols and so on. And not only must he know how to do all these things, but he must have a degree of skill in all the semiotic processes, just as one now has to be able to speak, write or do mathematics well. If a person is semiotically competent in the language of machines, then things that seem chaotic, such as the Internet, will no longer appear so.

From this perspective, "digital illiteracy" becomes a key factor. A person who knows machine language, who has the capacity to discern and transform information into knowledge, will be an active player in the process, creating new channels of interactivity and relating creatively to change.

Mastering the language will become as important as knowing how to calculate, speak, read, write and even walk. The degree to which a local community can work with it will expand its capital and its ***habitus*** and will determine its existence in the network society.

On the basis of these findings, we can say that urban players as a whole do not yet have the capital to exist in this new field, which brings us back to the need to generate ***habitus*** as a necessary condition for possessing capital. Consequently, "to be or not to be" in the network society will be determined not only by presence (given by the web address) and access (through an Internet server) but also by capital and ***habitus***. The first two factors relate specifically to the possibility of accessing the structure without worrying much about training, since any individual can make it work. The other two have to do with education, with early schooling, with acquisition of a worldview in which it is not only possible but normal to live in two dimensions simultaneously, where being connected to the municipality, to other social players or to the world via the Internet is part of daily life.

## The model site: the municipal government and its city on the Internet[1]

What should be the features of a model site that would promote the existence of a local community in the network society? How should it articulate with education systems (formal and informal) to help generate ***habitus*** among citizens? What role should the municipal government play?

There is a broad range of information technology available, and telecommunications infrastructure is improving and expanding swiftly. The key issue has to do not with the availability of these technologies but with how citizens and organizations appropriate them. Nor is it a question of

providing every citizen with a computer, or shouldering the costs of point-to-point connection lines in access centres. These are merely implementation problems. The real issue is to conceive a new mode for the city and its government.

The potential of the Web as an instrument for planning and managing the many aspects of urban life is complemented by the possibility of converting it into a channel for citizen communication and participation. Because it has an interface that is specifically designed to be understandable, it can be used as a platform for managing city information with a high degree of participation.

In positioning itself on the Internet, the city cannot simply transfer its current structure to reticular space: there has to be a structural change (and not only in the support medium) in the way information is circulated, one that will embrace both internal functioning and the modes of local and global articulation.

One of the key terms for thinking about the new logic that ICTs imply (not as a point of arrival but as a takeoff platform) is perhaps that of electronic government. The concept of electronic government is to provide continuous service and information to the public through the Web. While the demand for electronic services is growing, governments must accept the challenge of providing them. The Internet is important here, of course, as an interface between government and citizens, and so is the design of privacy policies, but the language and the environment in which they will operate are just as important because the very ***raison d'etre*** of the site is to construct an environment that facilitates and promotes relations with the government for community-based players and for the private sector alike.

Bearing in mind the current stage of transition between knowledge systems, and with the desire to help transform institutional cultures and to create the three conditions discussed, we have proposed a model site for the city and its government, structured at three levels:

- Intranet: a domain similar to the internal procedures used today, equivalent to the bureaucratic dimension of administration
- Extranet: the sphere of service to the public, queries, complaints, payments, participation in elections and public meetings
- Internet: the space for global articulation, for interrelating beyond political and administrative boundaries

These three levels are articulated through two information systems. The first is the information management system (IMS), based on a digital management unit within the municipal government. It consists of networks connected to the Internet where it is possible to prepare and receive documents, to communicate internally and externally and to produce timely information for all players in the system (citizens and public employees), involving centralized records, statistics, remote consultation of files, etc. This involves a file management system with the following general characteristics:

- It must offer hypertext services (which are important for the proper classification of complex and voluminous files).
- It must allow integration with communication tools such as e-mail and web access for all system users.
- It must allow digital documents to be sent and received, with assured standards of delivery, integrity and confidentiality.
- It must allow the general public to consult information through the Internet and through the internal network.
- It must issue reports needed by management.
- It must include an automatic statistics system.
- It must generate digital documents in non-proprietary format so as to permit subsequent migration and to be compatible with software available on the market.

The second is the geographic information systems (GIS), structured from geo-referenced databases containing complete information on the city. It will offer localized statistical information for identifying zones, point-specific information (such as data on a property or on facilities and services in a given ***barrio*** or district) and recurrent information (such as transit routes, the shortest distance between two points, or the location of utility networks). GIS is an information organization system that can be used for planning and evaluating local management, but it is also a communication system that allows users to conduct personalized consultations. As an example of its many uses, we may cite the case of the Elections Commission in India, which in 1999 used GIS to process and post online returns from every electoral district and to update them every 15 minutes.

The idea is that the municipality, or any other local player (in the case of Amsterdam it was a community association, in Bologna a joint undertaking of public and private players), can take the initiative and generate the conditions for the city to exist on the Web. For this reason, the three levels (intranet, extranet, Internet) structured by the two information systems (IMS and GIS) constitute the basic system for managing knowledge not only for the municipality but also for the urban players concerned in the experiment, and, to the extent that each player builds its own intranet, it will be able to provide information and to interact locally and globally.

As a place for interaction, the site is the virtual "campus" of the city. At this site, each participant's extranet is linked via the Internet with its respective intranet, and to these are added distinct spaces for discussion and dealing with matters of common interest (through forums or discussion group lists), which will likely include local non-governmental organizations (NGOs), development societies, neighbourhood centres, cooperative schools, clubs and retiree centres. The "campus" allows different levels of access, depending on the user's status (resident or tourist) and interests.

If such a site is to function properly, it must have more access points and it must operate 24 hours a day. The following features would be desirable.

First, it should be possible to navigate free of charge through computers installed in municipal centres or community telecentres.

Second, all citizens, community organizations as well as public and private players should have an e-mail address provided by the city with a unique and dedicated user name (which could be the same as the e-mail address) and an identity code that guarantees confidentiality.

Third, the objective of the site should be to allow for management of city knowledge by the players in the network society and also, to ensure that this happens, to help generate ***habitus*** among those players by turning the site into a training tool for using the Internet. Indeed, using the site as an educational tool is a key consideration. To ensure that it can be used in this way by all urban players, the didactic material is designed not only for the different levels of formal education but also for informal education. As it is implemented, it will be appropriated in various ways, depending on the infrastructure, technology and sociocultural basis in each place.

In order to identify a possible test site, we analyzed the formal and informal education spheres in Argentina.

## ICTs and informal education

We identified an interesting experiment in the field of informal education. In 1998 the Ministry of Communications[2] launched a programme known as Argentina@Internet.todos to provide Internet access to residents of isolated rural communities and low-income urban areas unable to obtain or afford it on their own. With the agreement of the International Telecommunications Union (ITU), a plan was adopted to establish some 1,600 community technology centres (CTCs) that would serve as introductory points to ICTs: they were to be equipped with the latest-generation hardware, offering e-mail, fax, videoconferencing, virtual libraries, public telephone service and other data processing technologies.[3]

The CTC project is based on two systems: the Permanent Training System (SPC) and the Content Development System (SDC). Work on the first system was headed by a group of state and private universities in the country,[4] which formed a committee to define the content of the courses, the schedule of planned activities, supervision and evaluation methods, and other matters.

With the change of government in December 1999, the programme was shifted to the Ministry of Planning for Technology, Science and Productive Innovation, and the CTCs were renamed Centros Inform.ar. Currently, the training development team has completed its work and, at least for the present, the contracts between the national government and the universities have not been renewed.

To assess the feasibility of using the CTCs for a pilot experiment, we selected and analyzed those in Quilmes. They were selected for their geographic proximity,[5] because although they had ICT equipment, we could not find them on the Internet. We identified them, carried out participatory

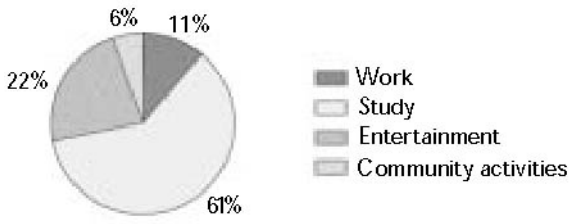
observation, interviewed key players and distributed a questionnaire to all of them (12 cases). Our analysis of the information obtained pointed to the following shortcomings.

There was inadequate geographic distribution. The programme's methodology for distributing the CTCs called for negotiations with the local authorities. In our interviews, we found that this approach was compromised by cronyism, with the officials involved dividing most of the centres among their "old boy" lists. The distribution therefore bore little relation to the quality and capacity of the recipient organizations, and geographic coverage was far from equitable in terms of the socioeconomic characteristics of the population they served. In our research, we found CTCs in some barrios and not in others, and we compared their locations on local maps showing population density and socioeconomic levels.

Moreover, Internet connections were inadequate. Thirty-six percent of those interviewed said they had no access to the Internet, in most cases because they could not afford touchtone telephones and connection to a server. The other 64 percent were able to pay for the service with the help of the recipient entity (school cooperatives, neighbourhood development societies, associations, etc.).

Another problem was ambiguity in activities. Only 11 percent of users devoted their online time to any kind of work-related activity, and even in these cases it was nothing as concrete as electronic commerce or "teleworking". The people we interviewed said that in general they would simply post their résumé and register as a job seeker with employment agencies that had web sites. Students were the most frequent users (62 percent). Their primary activity, both for elementary and secondary students, was downloading information from the Web or from hypermedia encyclopaedias for help with their schoolwork. In many cases, the CTCs had established timeslots which people can use according to their interests and tastes: 22 percent used their time for entertainment or for seeking general information and reading newspapers (Figure 1). Among children and teenagers, most used it to download software and play video games. While nearly all the host entities were engaged in some kind of community activity, almost none of the CTCs were used for these purposes. Only the Padre Luis Farinello CTC

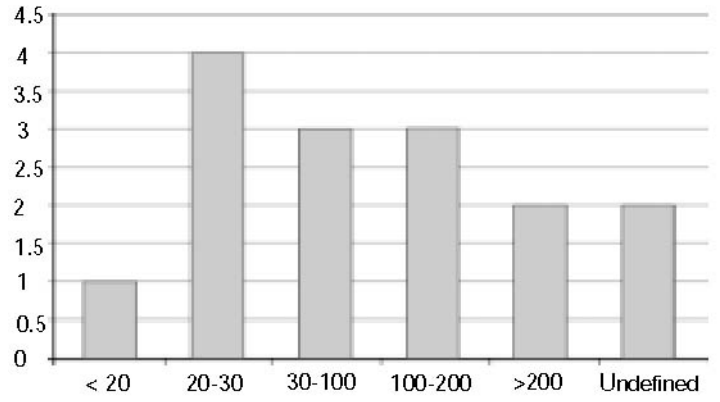
**Figure 1. User activities in CTCs**



used the Web in its community activities, but in this case the web site was developed by the Padre Luis Farinello Foundation and did not arise from the CTC.

There was little effort to popularize the CTCs. The CTCs had a fairly low profile in their immediate community. People interviewed noted that neither the CTC managers nor the government made much effort at public promotion. Those that had the greatest numbers of users were installed in or near schools. Most received between 20 and 50 users a week (Figure 2), which indicates an average of fewer than 10 users a day. Comparing the number of users to the number of computers per CTC, we find that each computer was used by only two people a day.

**Figure 2. Average number of users per week**




In addition, the CTCs faced economic and technical problems. The most widespread problem was economic constraints (91 percent), followed by technical problems. Because the government had no policy for advising the centres on how to obtain new sources of financing, they relied on the host institution (through grants or special fund-raising events). Moreover, many of the technical problems resulted from software failures, which could have been readily fixed if the coordinators had had basic training in installation and programming for the equipment.

The problems indicated above, relating primarily to connection, lack of public profile and absence of community activities, led us to reject the CTCs as the host for our test run. Our decision was influenced by the training deficiencies we found among most of the technical and educational coordinators, which meant that it would be difficult to find valid interlocutors for the experiment. While the design of the programme called for training as one of its main focuses, when it came to actual implementation those responsible for developing the content and application methodologies showed

little skill. Based on data collected during the interviews, we may say that the training courses offered had no thematic modules, schedule of activities or any way of evaluating the particular training needs of the individuals who were to run the CTCs. The criteria for selecting the coordinators, and the gaps in their training, explain why most of the CTCs are still just beginning to exploit the equipment and the potential offered by ICTs.

## Formal education

Having rejected the CTCs for our initial stage, we examined the formal education system to see if it would be suitable. For reasons of geographic proximity (since implementation would require lengthy and repeated site visits), we decided that the test site should be located in the province of Buenos Aires. We consulted two sources for our initial scoping: the National Statistics and Census Institute (INDEC) and the National Ministry of Culture and Education, the latest published data from which are for 1997.

**Table 6. Student enrolment by level of instruction and sector, 1997.**

| *Province* | *Total* | *Initial* | *Level of instruction* | | |
|---|---|---|---|---|---|
| | | | *Elementary*[6] | *Secondary*[7] | *Non-university higher education* |
| *Total for country* | 9,119,368 | 1,145,919 | 5,153,256 | 2,463,608 | 356,585 |
| *Buenos Aires* | 3,422,688 | 510,577 | 1,857,973 | 954,945 | 99,193 |

Students in the public and private schools of the province of Buenos Aires account for a third of the country's student population. Ninety-six percent of that population is enrolled at the initial, elementary and secondary levels, and this proportion reaches 97 percent in the province of Buenos Aires. We attempted to cross the data with indicators of the quantity and quality of computer equipment, by level of instruction and by institution, but we could not find reliable data.

In terms of content related to the Internet and local government, since the national education reforms of 1993 a number of technology working guides have been issued both by the provincial government of Buenos Aires[8] and by various private publishers, but none of these deal with the issue of municipal government and the Internet, as addressed in this paper.

In 2000 a series of experiments were launched to generate educational content on the Internet. Although they have yet to make significant progress,[9] they at least show that the basic issue is now on the government agenda. The launching of the national education portal "Educ.ar" <http://www.educ.ar>

in 2000 and the provincial portal for Buenos Aires in March 2001 provide two examples.

The conflicts that global networking generates in the education field are inherent in any social organization; and while there are relatively few cases of practical innovation in Argentina, the issue of the Internet and education is a subject of debate and, as in other countries, it is being addressed by increasing numbers of authors, and not only specialists in the area.[10]

## Internet Educativa

A programme called Internal Educativa was introduced in the municipality of Pinamar (province of Buenos Aires) in 1999, sponsored and financed by the Pinamar Telephone Cooperative (Telpin). It is aimed at all local public and private schools, at all levels and streams of instruction: general and special; initial, EGB (General Basic Education), and secondary/polymodal. Sixteen schools have now been given connectivity and training. The programme was subsequently expanded to include a broad range of public associations: libraries, environmental groups, museums, parish groups and para-cultural centres <http://www.telpin.com.ar/interneteducativa>.

All the installation costs, including the telephone line, the server, the hardware and software, were donated by Telpin. At the same time, a programme of stipends was introduced to attract senior students in technical schools with an interest in information technologies, as an incentive for taking over monitoring and maintenance of the network, and this was supplemented with training for teachers, also provided and financed by Telpin. This is the only experiment of its kind in the country that is totally financed by a cooperative. To date, the investment has amounted to some US$200,000[11] and in just over one year a total of 60 computers have been installed.

Teacher training is a key aspect of the experiment. This training was initially planned as a 40-hour module including classroom time, but at the end of that first module the teachers asked for further training. The programme now consists of three successive modules.[12] The objective is to train teachers in the use of the Internet for educational purposes. For this reason, it does not start with computer training (Word, Excel, etc.), as do most courses, but rather with the tools that will allow them to exist in reticular space (e-mail, HTML, etc.).

The training programme was assessed and approved by the education inspectors, supervisors and principals of the schools in Pinamar. The teaching methodology was developed in a series of seminars and continuing education workshops for teachers, complete with supporting material, and permanent monitoring and evaluation. It was conducted in three cycles:

- April/July 1999. Introduction to the educational use of the Internet: classroom use, field projects, exhibition of projects and evaluation
- August/December 1999. Web site construction for teachers

- April/December 2000. Publication of pedagogical content on each school's web page, prepared by teachers and students

By December 2000 all the schools had been equipped, and they now have technical maintenance, connection and free navigation, with touchtone telephone service available full-time at no charge. The programme now serves more than 300 teachers and 4,950 students. Thanks to this experiment, Pinamar is the first and only city in Argentina with 100 percent of its schools connected free of charge to the Internet.

Currently all the schools have their own web page, produced by the teachers. Setting aside considerations of aesthetics or content, which were not a priority at this stage, it is interesting to observe how each web page differs from the others and how effectively the tools have been mastered, since many incorporate image, sound and animation in addition to text. The secondary schools have begun to work online, with the objective of developing content in two areas: one pertaining to history and local identity and the other to driver education.

This experiment has produced some unexpected results and is beginning to generate new practices and social relations as well as to popularize use of the Internet among the local community. In some cases, the teachers are developing web pages for neighbourhood community organizations. At one school, the students worked on the concept of Internet "solidarity" or user ethics: they worked out an agreement with other schools that when one is not using the Internet one should disconnect, so as to avoid overloading the system and to ensure that everyone has an opportunity to use it.

The National Ministry of Culture and Education recently contracted Telpin to expand this experiment to other cities. In April 2001, a pilot experiment was launched in the city of Trenque Lauquén (province of Buenos Aires), with a "semi-presential mode" using videoconferencing, e-mail and discussion forums.

Thanks to its technological grounding and the positive attitude of the community, which had already been sensitized to the use of ICTs, we selected Pinamar as the most promising site in the country for testing the application.

## Pinamar and the Pinamar Telephone Cooperative (Telpin)

The district of Pinamar consists of the localities of Cariló, Valeria del Mar, Ostende, Pinamar and Montecarlo. It covers a total area of 6,720 hectares and has a seafront of 21 kilometres, including an urbanized sector extending along 12 kilometres of the Atlantic coast. The total population of the district is 24,379. Thirty-nine percent are economically active: of these, 64 percent have steady jobs, while the rest are unemployed or underemployed.[13]

The main economic activity is tourism, and this is reflected in the urban structure, which is divided in the conventional manner between the "served city" and the "serving city".

The founders of Pinamar were also involved in creating its telephone cooperative. For this reason Telpin, in addition to being one of the oldest cooperatives in the country, is deeply rooted in the local identity.[14] What is of interest here is the cooperative's policy of popularizing the Internet through the education system as a social service.

Telpin has consistently sought out technological innovations and has at the same time returned its profits to its members. It was the first provider to offer International direct dialing. Thanks to such services, and the high summer consumption resulting from the influx of tourists, it generates profits that are returned to the membership through discounts (subscribers do not pay for service during the summer) or to the community in the form of new services (Internet Educativa).

Telpin subscribers can obtain a second telephone line at a minimal cost of US$1; and since local calls are free, the only cost inherent in having an e-mail account and accessing the Internet is that of the server. In October 2000, Telpin had 1,180 subscribers to its server, of whom 50 had free service, 850 paid US$30 (full Internet services) and the rest paid US$9.90 for six hours of access daily.[15]

The cooperative's board of directors decided to develop the Internet Education programme to provide Internet links for schools and community associations with the intention of promoting the service and at the same time fulfilling a social function. In addition to this programme, it offers Internet service to private parties with a free three-month trial period.

## Educational content on ICTs and the city

Having selected Pinamar as our test case, we examined the curriculum provisions of the Federal Education Act to identify content that relates to ICTs and the city. This led us to select the Common Basic Content, which covers ethics and citizenship, social sciences and technology at the EGB and polymodal levels, and social sciences, natural sciences and technology at the initial level, on the basis of which we established the objectives for these content[16] at each level.

### Initial level

*Conceptual content:*

- Location in one's own and neighbouring geographic spaces: barrio, neighbourhood, city, town, etc.
- Local architecture, with its various construction methods and building materials.

*Objectives:*

- The student should be able to locate and identify familiar places on the Internet, and specifically on the municipal web site.

- The student should be able to describe the materials used for his own house or dwelling and relate them to concepts and experiences of private and shared spaces.

### First grade EGB

*Conceptual content:*
- Immediate geographic spaces: orientation, distance and location. Living space.

*Objectives:*
- The student should be able to locate and identify familiar places on the Internet, and specifically on the municipal web site.

### Second grade EGB

*Conceptual content:*
- Basic local institutions (educational, health, economic, political, religious, cultural) and their functions.

*Objectives:*
- The student should be able to locate geographically the various institutions in his barrio.
- The student should be able to communicate over the Internet with institutions in his barrio and receive a response to his concerns.

### Third grade EGB

*Conceptual content:*
- The principal authorities and their main functions.

*Objectives:*
- The student should be able to read an organization chart for the municipal government and other organizations in the city.
- Using this organization chart, the student should be able to identify the responsibilities of various municipal officials.

### Fourth grade EGB

*Conceptual content:*
- Urbanization and political boundaries (municipality, province, country).

*Objectives:*
- The student should be able to identify the political boundaries of his municipality on a map and understand the difference between geographic and political boundaries.

### Fifth grade EGB

*Conceptual content:*
- The public and private spheres.
- Basic social institutions.
- Forms of organization.

*Objectives:*
- The student should be able to identify those aspects of city life that belong to the public and private spheres.
- The student should recognize and identify the various social institutions in the city, distinguishing them as governmental or non-governmental, and classifying them by their activities and functions.

### Sixth grade EGB

*Conceptual content:*
- Urban spaces. Principal activities, their distribution and articulation within the urban space.

*Objectives:*
- The student should be able to identify and understand the different kinds of activities conducted within the physical territory, as well as their correlation with virtual space.

### Seventh grade EGB

*Conceptual content:*
- Means of transportation: networks, movements, transit flows. Spatial and temporal distances.

*Objectives:*
- The student should be able to identify the different kinds of urban physical networks and their spatial and temporal dimensions.

### Eighth grade EGB

*Conceptual content:*
- Social service units, from the local to the national levels.

*Objectives:*
- The student should be able to participate in social service activities of an NGO, evaluate them and communicate them.

### Ninth grade EGB

*Conceptual content:*
- Forms and channels of citizen participation.

*Objectives:*
- The student should be able to experience citizen participation in a digital environment, through contact with other citizens.

### Polymodal level

*Conceptual content:*
- Social constitutionalism and the meaning of modern citizenship.
- Examples of social participation: NGOs, labour unions, professional associations, currents of opinion.
- Urban and rural spaces.
- The meaning of "urban".
- Urban networks.
- Political spaces. Political organization of the world. National, provincial and local planning.
- Forms of interactive and intermedia communication: multimedia, databases, data networks.
- Computer applications and communication in society. Positive and negative impacts. The relationship between individuals and machines. Ethical questions on intellectual property and privacy of information.

*Objectives:*
The student should be able to do the following:
- Identify community problems and participate in efforts to resolve them.
- Participate in activities organized by the school to meet specific community needs.
- Formulate problems and provisional explanations.
- Design a research project and collect, organize and record information.
- Participate actively in the design of school research.
- Interpret the information.
- Communicate the information.

Having defined the conceptual content for each level, we reformulated the procedural content[17] and began work on designing the multimedia application for the Internet platform. The instructions included in the application suggest at least one activity for each level. At the same time, we tried to identify the best level to begin implementing and evaluating the experiment. We selected the initial level (five-year-old kindergarteners) for two reasons: first, work at this level has a greater impact on the local community, since families of children at that age tend to participate more in

school activities; second, because the teachers at that level are not subject to strict curricular rules, they generally have a less structured approach and are more willing to experiment.

## Internet application on ICTs and the city for kindergartens

In the content on social sciences, natural sciences and technology at the initial level, it is recognized that children are the subjects of activities with others, with objects and with natural components, they are consumers and users of technology of varying degrees of sophistication, and their daily social habits as well as the information they receive comprise a set of knowledge that will be compared, enriched and deepened in the school.

Starting from these premises, we selected the unit on the natural and social environment, which proposes that "recognition of the most significant places in the barrio and the zone will allow children to establish relationships among the components of the environment, and to recognize and appreciate what does and doesn't belong", which we felt was possible to achieve through activities in a virtual environment.

The specific content developed refers to one's own and other nearby geographic spaces, which in the case of Pinamar at the initial level, in this application, consists of locating the different localities (Pinamar, Ostende, Valeria del Mar and Cariló) on the map of the district and pinpointing within those localities the kindergartens, first-aid stations where children regularly go, parks and various institutions.

This activity allows for observation and the selection of information, by navigating within the application, and for recording information in drawings and tables; it also allows children to communicate, to explain ideas in their own words or with drawings, to exchange information with others, to organize this information, to communicate it and to draw conclusions. As well, it encourages an open working attitude towards investigating reality, in order to spark their curiosity.

The tool was constructed in two environments: programming on Flash 4, a dynamic environment that permits high interactivity, produces a design of great aesthetic quality, and offers relative economy in the packets of bytes to be sent over the Internet; and HTML programming, as an alternative, since the Flash environment requires a plug-in (although simple, free and readily obtainable) that must be installed in the students' computers.

For mapping, we used a GIS provided by Telpin, which also contributed the interactive database for map searches. The software, which is compatible with CAD applications, requires a visualizer (WIP5.exe), which comes with the application. It also allows working in different layers that can be activated or not, depending on the user's need, for which it was decided that the application should be distributed in full (containing all educational levels) so

that the teachers could use it freely both for the activities in the formal curriculum and for other activities outside the content module.

For the communicational design, we worked specifically with an iconographic language adapted to each level in accordance with conventional guidelines of cartographic representation. For the initial level, we used a child-friendly iconography that would allow students to recognize the places they were working with for each activity. The icons have links to photographs, videos and information in different formats (including formats that teachers and students may add) on the places indicated.

An operational online test was conducted and was rated very good in terms of the speed of downloading the map and images. The application can concurrently be found on the Telpin web site <http://www.telpin.com.ar/interneteducativa/proyectoung/ung/web>.

## The first experiment

The first experiment was conducted in the kindergarten No. 905 of Valeria del Mar for five-year-olds. We worked in the classroom with a group of 10 children who had no computer or Internet connection at home. We were impressed at the speed with which they appropriated this tool and the ease with which they adapted to the new language (use of such words as ***plan***, ***mouse***, ***download***, etc.), although it was impossible to measure whether the conceptual and procedural objectives of the activity were reached, since to do so we would have to test the content with several classes during the remainder of the school year.

As to the tool itself, we confirmed that the hypermedia design of the interface was user-friendly. To improve its capacity, it was agreed that it be updated every two months during the first year, in light of teachers' demands, and to evaluate it jointly at the end of that time.

We evaluated the experiment with teachers and principals at the initial level and verified that the tool met the pedagogical guidelines for the conceptual content and that the proposed procedural content had been successfully developed: accessing interactive maps of the district and identifying the different icons, as well as "clicking" on the icons that represent each child's home.

It was agreed that for the rest of the school year representations of the various urban spaces would be prepared with different resources and techniques, including mock-ups, plastic art productions and oral expression. The objective was that students should use these constructions to express the knowledge and skills acquired through the use of the application. As a result of the experiment, a parallel activity was also proposed, the sending of e-mail that would carry the signature of each child and that would allow the children to learn the spatial arrangement of the symbols on the keyboard and to identify the letters in their names. This activity would also be conducted and evaluated during the course of the year.

## Final considerations

On the day the application was introduced in Pinamar, the Casa Rosada[18] announced a plan for providing electricity to 1,700 schools in Argentina. This coincidence highlighted what was special about our experiment and also said something about the context within which it was conducted. To reproduce it is not going to be easy in the short term, without an adequate technological base and infrastructure. The main bottleneck, however, may lie in a shortage of local players (not only in the education system) to lead the experiment. The national education portal (Educ.ar), which is supposed to provide connectivity, training and content for all public and private schools in the country, is a very recent initiative. If its objectives are fulfilled, this would provide the technology and infrastructure for pursuing themes such as ICTs and the city.

One question that arose in establishing relations with local teachers was the need to secure institutional support at the provincial level, without which the experiment could not have been formally applied, since legal, technical and administrative considerations preclude activities outside the formal curriculum. For this reason, we asked the legislative and executive authorities of the provincial government to approve the project, and it was duly declared to be of "educational interest" and "legislative interest". This question highlights the special considerations that must be taken into account in any effort at innovation in the formal education system.

Another issue that arose from the relationship with local teachers is the ongoing debate within the education system as to who should develop the new content for the Internet platform. Our interviews revealed a widespread opinion that it is the teachers who should develop this content. We must point out that the teachers we interviewed had some degree of training in the educational use of the Internet, which sets them apart from the general teaching body. Nevertheless, there are some who will maintain the contrary. Echeverría (1999) points to the example of the French Revolution, which called upon its finest intellects and scientists to prepare new educational material. From this perspective, the task of preparing the current material (learning games, telematics and multimedia) is beyond the capacity of the education community and should be addressed by specialists in the sciences, technology and the humanities, while recognizing that involving the teachers can make the difference between success and failure.

Finally, in pursuing further initiatives to create ***habitus*** among the citizenry in the use of the Internet in formal education, we must not forget that this approach will reach only the school population, i.e. one-third of the people in the country. This fact highlights the importance of continuing to explore approaches that would help to create ***habitus*** by providing continual training through the channels of informal education.

## Notes

1. Apropos this point, an Internet-based application for local management, MO-L, "the municipality online", was developed as part of the project called "Internet and local government: a possible marriage?", sponsored and financed by the National Agency for Scientific and Technological Promotion, Argentina.
2. Decree 1018/98, signed by the then-President Carlos Menem, relating to Decree 554/97, which declared a national interest in ensuring Internet access for all residents of the country, under conditions of social and geographic equity.
3. Source: interview with Dr Ricardo Campero, coordinator of the Electronic Commerce Research Programme of the Ministry of Planning for Technology, Science and Productive Innovation, March 2000.
4. These included the Instituto Universitario Aeronáutico, Universidad Blas Pascal, Universidad Tecnológica Nacional and Universidad Nacional de Río Cuarto.
5. The National University of Quilmes, where the team that conducted this project is based, is located in the district of the same name. Quilmes is one of the five districts of Greater Buenos Aires that have more than 500,000 inhabitants, with more than 20 percent of their population living in shantytowns or substandard housing (INDEC 1991).
6. EGB (General Basic Education) at the primary and intermediate levels, according to the Federal Education Act.
7. EGB at the secondary (high school) and "polymodal" levels, according to the Federal Education Act.
8. General Directorate of Schools, province of Buenos Aires, modules 0 to 8, 1993/94.
9. In general, they amount to content that was originally published in print format and transferred to the Web. No hypermedia applications have yet been verified, i.e. content that has been redesigned for the new platform.
10. Castells (2001), Echeverría (2000), Fernández Hermana (1998), Schiavo and Finquelievich (1999), Terceiro (1996), Tiffin and Rajasingham (1997), among others.
11. Source: Juan Santoiani, systems manager, Telpin.
12. Source: Claudia Gómez Costa, education coordinator for Internet Educativa.
13. Source: Department of Commerce, municipality of Pinamar, December 2000. The figures do not include permanent residents who have not changed their legal address.
14. Argentina has some 300 telephone cooperatives. Telpin was started in 1963 with 92 telephones (source: Pinamar telephone directory, Pinamar Telephone Cooperative, 1998 edition).
15. Source: Juan Santoiani, systems manager, Telpin.
16. This work was done in cooperation with the education coordinator for Internet Educativa, Dr Claudia Gómez Costa.
17. The procedural content included the application instruction book.
18. Official residence of the President of Argentina.

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# Measuring qualitative and quantitative impacts: Design and implementation of online registration systems for telecentres using Linux platforms

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## Introduction

The registration system for community-based Internet access centres or telecentres that we have developed is now available at our web site <http://www.colnodo.apc.org/registro>, together with technical details of the project and instructions for installing each module. For this reason, this article focuses on the research process and on recommendations for telecentre administrators.

During the project, it became clear that telecentres needed a way to monitor physical access (user time) at their stations in order to facilitate invoicing, the design of promotional campaigns and the administration of the centres. This meant that the registration system should not be limited to capturing information but should have additional functions that could be used to support the management and sustainability of telecentres.

The registration system we developed not only allows telecentre administrators to recognize users and their profiles, but also facilitates administration in several ways:

- Graphic presentation of statistics that telecentre managers can readily interpret and understand
- Remote control over all stations of the network from any station in the centre or via the Internet
- "Scalability" in the application (it can support from 2 to 100 computers or more)
- Accommodation of different kinds of administrators with different levels of access for configuring and obtaining information from databases
- Control over the appearance of the interface (font, colour) using an online form

- Capability of translating the registration system interface into any language by changing just one file
- Possibility of adapting the terms found in the data-capture forms to the particular expressions used in each country (e.g.) the word ***bachillerato*** is used in Colombia for high school level, while the Mexican term is ***preparatoria***
- Possibility of installation on Windows platforms (with certain functional limitations)
- Possibility of controlling the duration and cost of promotional strategies to achieve sustainability for telecentres

The research group feels that it is very important to develop new modules for the application that will make it possible to:

- Automate installation of the application and of all the programs needed for it to function properly.
- Compare various telecentres at the local, national and regional levels. The application was designed to allow this module to be developed later.
- Expand the statistical analysis modules so that users of the application (telecentre administrators and researchers in new technologies) can compare variables using simple mechanisms for selecting those needed to construct new indicators.
- Develop a module to make backup copies of the system and facilitate the retrieval of information or of an earlier configuration if it is accidentally modified.
- Distribute the registration system in a way that meets the official requirements of GNU/GPL licences.

## Where did the idea of developing a telecentre registration system come from?

The Latin America and Caribbean region has seen many initiatives for expanding access to new information and communication technologies (ICTs) for communities and low-income groups. By the mid-1990s, access was considered a regional priority. In addition, given the scope of available technology, the deregulation of telecommunications markets in many Latin American countries and the growing community of interested users, there is now a combined need for access to the technology itself and to the information available over the Web. The development of content of interest to the Spanish-speaking community, and of rules for using information and their implications for policymakers and managers, has also become a priority for the coming years, without losing sight of the access question itself.

From this perspective, Colnodo has been working since 1996 on a community Internet access project called Neighbourhood Information Units

(***Unidades Informativas Barriales,*** UIB) <http://www.uib.colnodo.apc.org>. The main objective of this project is to provide access to ICTs for low-income communities in Bogota and, in this way, to help reduce the divide between those who have access and those who do not. In addition, we have also developed a local information system for each locality, based on its particular requirements and the issues that each organization is working on. Colnodo has also set up a public Internet access booth[1] with seven computers, a dedicated connection and a full-time coordinator. This facility supports the UIB initiatives and serves as an experimental space both for this research project and for other initiatives of Colnodo and the Association for Progressive Communications (APC) <http://www.apc.org>.

Under this project, we established three UIBs between 1997 and 1999 in three districts of Bogota (San Cristóbal, Bosa and Suba, located respectively in the southeast, southwest and northwest areas of the city). These places are coordinated by six women belonging to the project's three host organizations.[2] They have an average of more than 15 years' experience in community work in such areas as education, culture, environmental conservation, human rights, conflict resolution and low-income housing, and they are well known in their communities. This team of women has received technical and administrative training for running and maintaining the UIBs. The host organizations for the UIBs have appropriated these initiatives as an integral part of their work and are using them to build relations with a broader community, beyond their immediate activities.

Nearly two years after financing for the project was terminated, the UIBs are now developing local information systems as management support for social organizations, administrative entities in the capital district, and individual citizens, with the technical support of Colnodo in areas such as compiling local directories, databases for bibliographic consultations, geo-referencing systems, online publication of information from each entity, facilitating collaboration between those entities and their members, and other initiatives relating to the topics mentioned above.

Prior to the project implementation phase, we decided that we should record a series of activities and procedures that could serve as inputs for subsequent evaluations. We designed several very simple mechanisms (forms, surveys and lists), and from the outset the coordinators in each UIB applied these to users of the centre. These recording methods were intended to monitor development and implementation of the UIBs and to contribute to an evaluation of their impact upon termination of financing for the project, as a requirement of the donor agency, the International Development Research Centre (IDRC).

Although it was recognized as necessary from the outset, having quantitative and qualitative support information was found to be so useful that in 1999 every UIB started working to refine such mechanisms. We found that keeping daily records on each UIB's activities is essential for the following:

- Understanding the information and learning needs of the population served.
- Taking decisions to expand or reduce physical infrastructure and connectivity.
- Establishing access limits to avoid congestion.
- Determining training needs both for users and for coordinators in each UIB.

These mechanisms were applied manually, through personal contact between the UIB coordinator and the user. Problems of continuity arose in collecting data and completing the forms or surveys, which made analysis of the information more difficult.

This situation pointed to the need to design and implement automatic mechanisms for recording activities, uses and lessons learned that would serve to facilitate application of conventional evaluation methods (quantitative), to facilitate the exchange of experience, to promote the use of technology for continual evaluation, and to encourage peer assessment of the day-to-day efforts of the UIB coordinators (qualitative evaluation).

Simultaneously, using the e-mail list for the TELELAC project (coordinated by ChasquiNet-Ecuador), we found that the main problems facing the people and institutions that are sponsoring telecentres in the region relate directly to:

- the development and continual implementation of monitoring and evaluation mechanisms
- lack of venues and methodologies for exchanging lessons learned
- the definition of strategies and methods of self-financing

We feel that the development of registration mechanisms in the UIBs will be of practical interest to all those people who are working directly or indirectly in support of telecentres or any other facilities for allowing public access to the Internet, and therefore we have focused our research on developing interfaces for recording information on activities in the telecentres, such as frequency of use, user profiles, training sessions, and lessons learned, that can be introduced in full or partially.

## What have we achieved to date?

In the course of our research, we designed, developed and tested an interface for recording uses and users (on a Linux platform, but it also works in Windows, with some limitations) that allows the storage of data on the daily workings of the telecentres. In this way, orderly and coherent information, both quantitative and qualitative, on the services provided by each telecentre will be available both to the telecentre administrator and to external evaluators or researchers, donors, universities and governments.

The application we have designed allows every user to record his profile, with information on age, gender, schooling and occupation, among other variables (see the description below of variables for the registration system), at the beginning of the session. At the end of the session, the user will be able to file a report with the telecentre, using another form covering the performance of the centre and the effectiveness of the services offered.

All of this can be done through an online interface, at low costs to the telecentre (which does not have to buy software or pay for licences since the system is distributed under a GNU licence <http://www.gnu.org>) and in a simple, user-friendly form. All transactions with the system are done through an Internet navigator.

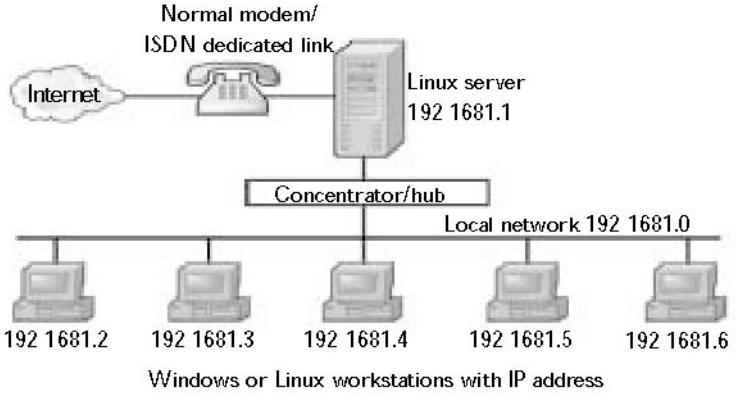
Information captured is stored in a database that automatically generates cumulative percentages as the basis for constructing indicators for classifying users by age, gender and level of schooling. The cumulative database and the results from applying the indicators can be used to support research into future telecentre initiatives.

As well, because information from the registration system can be shared among all telecentres using the system, it will be easy for any community interested in running a telecentre in Latin America and the Caribbean to learn about the negative and positive impacts of new ICTs.

Although the registration system has a built-in form for tabulating the variables, these can be presented to users in different ways so that questions are expressed in the appropriate vocabulary and in terms that the user will understand.

In February 2001 we began publishing the results, procedures and lessons from each proposed activity at <http://www.colnodo.apc.org/registro/>.

***Network topology for the telecentre system***



The application was developed using tools that are freely available over the Internet. These include:

- a SQUID proxy system (cache) that allows an Internet connection to be shared with a local network
- an Apache web server
- a MySQL database handler
- programs to control station access (ipchains) and for running commands (sudo)
- a program for analyzing the user log file for the proxy server (Webalizer)
- modules developed by Colnodo in PHP (dynamic web pages) for system administration and for presenting statistics from the user log file

While the application was developed and documented for a Linux platform, it can also be used on the Windows platform with some limitations. Our intent here is to ensure that telecentres using Windows will have no problem in running the application. Those parts of the process that change between the Linux and Windows platforms have to do with controlling the sending of Internet packets from stations to the Internet, i.e. where there is not full control over Internet access from stations so that users can use the system even if their session has ended. There are also some problems in graphics presentation in the Windows version of the statistics module. The Linux version allows Internet access stations to be blocked until the registration form is completed.

We developed a graphic design that can be personalized by whoever is using the application. Basically, this allows changing of the language (from the initial Spanish to any other language) as well as fonts and colour.

We have made progress in our research into tools for analyzing statistics for the SQUID proxy server (Webalizer <http://www.mrunix.net/webalizer>) so as to analyze statistics on the most frequently visited sites in the telecentres. For statistical analysis of the variables contained in the initial and end-of-session forms, we designed applications with PHP modules that can show the results in graphic and table formats.

## Description of variables for the registration system

The e-mail address list of the TELELAC "Telecentros" project was used to circulate the basic structure of the form that the user must fill out at the beginning or end of the session at the telecentre station.

The basic structure had been developed by the research team, the UIB coordinators and the external evaluator of the UIB project (Maria Quintero). The structure was refined on the basis of suggestions and comments received. The final structure shows:

- which data have to be registered only once
- which data must be registered repeatedly
- frequencies of registration
- the part of the process to which each type of registration applies
- the data that can be registered without intervention by the user or a third party

## Structure of the initial form

The initial form appears in the registration system at the time the user starts to use the station.

### User profile

The following variables relate to the identity of the user. They are intended to facilitate the definition of personal profiles for the population served by each telecentre for use in defining strategies and targets for promotional campaigns, according to sex, age, level of schooling, occupation and distance between home and telecentre.

*1. Name*
Optional. This is recorded only once. The system stores it in a database and the next time the person registers he will merely be asked for his identity (ID). This variable can be used in the future to personalize some of the telecentre services.

*2. ID document*
Required. It is recorded the first time a user accesses the service. If the system finds the data from the ID document in its database, it will allow the session to begin immediately. The system allows the user to update his data (i.e. to modify his user profile).

*3. Type of ID documentation*
Required. This is recorded the first time the user accesses the service. The type of the document can be edited (birth or citizenship certificate, ID card, passport) depending on the type used and the location (this document has different names in each country), but the field remains the same in the database.

*4. Gender*
Required. This allows the user log to be broken down into male and female users. This information is useful when it comes to measuring equity of access, establishing user times by gender or promoting gender-specific services.

*5. Age range*
Required. This is recorded the first time the user accesses the service. The age intervals are under 10, between 10 and 18, between 19 and 25, between 26 and 30, between 31 and 40, and over 40. The selection menu allows only one range to be selected. The administrator of the telecentre can refine the age range for example, instead of "over 40" the menu could include more age brackets in order to differentiate older adults (e.g. "over 60") but the categories created must always fall within the ranges described above to ensure that information is comparable between different centres.

*6. Level of schooling*
Optional. The ranges used are none, basic primary school, basic secondary school, technical education, university, and postgraduate (indicate complete or incomplete). This is recorded the first time the user accesses the service at the telecentre. Only one level is to be selected from the menu. The administrator of the telecentre can refine the levels: for example, instead of "basic secondary education" the menu could include "preparatory", but the categories created must always fall within the ranges described above to ensure that information is comparable between different centres.

*7. Occupation*
Optional. This is recorded the first time the user accesses the service. One category is to be selected from the menu. The telecentre administrator can remove from the drop-down list any items that do not apply to the user population. For example, in a school the list could be limited to "students" and "teachers".

*8. Distance from home to telecentre*
Optional. This is recorded the first time the user accesses the service. A range is to be selected from the drop-down menu. The administrator of the telecentre can refine the selection: for example, instead of "barrio" the menu could include "district", but the categories created must always fall within the initial ranges to ensure that information is comparable between different centres.

*9. Communications access at home*
Optional. The options included are telephone, television, radio, and press. It is recorded every time the user accesses the service, and answers from the previous session are retained so that when the question is posed at the next session it can be determined whether the use of ICTs has enhanced the user's capacity to access other communication media. There is a menu that allows several of the options to be selected.

## Description of the session

The variables listed below allow the system to measure the length of each session for each user of a telecentre computer. This will allow accurate invoicing for computer use. In this respect, the system includes a module to establish a fee structure based on user time.

As well, it allows the user to monitor the time he has spent at the computer and to programme his consumption to avoid unpleasant surprises when it comes time to pay. This information is useful for calculating the average length of sessions at the centre, for purposes of planning and upgrading its facilities, for programming business hours and for designing promotional strategies to encourage users to stay online as long as or longer than the average.

*10. Date session begins*
*11. Time session begins*
*12. Date session ends*
*13. Time session ends*
*14. Duration of session*
*15. Cost of the session.*

The date and time the session begins and ends are reorded by the system, and the duration and cost of the session are determined by the system.

## Identification of the telecentre

*16. The telecentre code*
This is activated only when the telecentre is registered as a user of this application. Using this code implies that the telecentre will share the data produced by this research project. Colnodo will assign a serial number for monitoring who is using the registration system and for compiling data and producing statistics on the telecentres registered in the programme (by region, country, typology, etc.). The intent is to produce consolidated statistics by groups of telecentres, either within the same chain (e.g. a national access programme, an Internet café company, a public schools network or a network of independent centres that collaborate voluntarily).

*17. User number*
This is generated automatically by the system when the user accesses the service the first time: this makes it possible to determine how many people have benefited from the service. If the system finds the user data already stored, it will not assign a new number but will use the existing one. This does not refer to the number of total sessions in the telecentre, but rather to the number of individuals who have used it.

## Structure of the final form

At the end of the session, the system will ask the user to complete a very simple closeout form. The telecentre administrator will use the information from this form to determine the degree of customer satisfaction and to identify and address any problems that users may experience. For example, if there are problems with connection speed, the centre will need to find a way of broadening its channel or changing the form of connection (e.g. switching to satellite access from telephone dial-up). If the problems have to do with the speed of the computers, the centre will have to expand the memory and disk space of the computers. If the problems have to do with users' skills, the centre could offer courses or workshops and invite specifically those users to participate.

In this last portion, the user can enter comments about the centre, about the quality of service or about the registration system itself. This information is stored in the registration system's administration module, where it is freely available to the telecentre administrator.

Users do not normally make entries in open text fields of this kind; but if they do, this information must be taken into account, and a decision will have to be made as to whether to implement the suggestions. It is important that users be able to see whether their comments have been taken into account, perhaps through a bulletin board where the centre can announce, for example, that it has decided to expand hours of service at the suggestion of users.

### Access to information and knowledge

The variables can be used to determine the quantity and quality of each user's access to information and knowledge through conventional communication media. They can also be used to determine the reasons why users choose to access the Internet through a telecentre and how to meet their needs most efficiently. As well, they can identify the services most in demand so that infrastructure can be adjusted accordingly and marketing strategies can be adapted to promote underused services. This information is of great importance in structuring the way the centre will advertise itself and for defining local information systems.

*18. Uses*

Optional. The options included here are navigation, e-mail, chat groups, FTP (file transfer protocol), music, video, telephony, word processing (text), data processing (electronic pages), page design, graphic design, games, multimedia courses, printing documents, scanning documents, and other. Each time a user accesses the service, his use will be recorded. There is a menu that allows several options to be selected, and an inventory of services offered is provided.

*19. Why? (What brought you here today?)*
Optional. The options offered are work, entertainment, study, friendship, business, research, and other. A record is made each time a user accesses the service, and the responses from the previous session are stored and compared to see whether the reasons are the same or have changed. The menu offers several options for selection.

### Efficiency and level of satisfaction

*20. Did it work as you hoped?*
Optional. At the end of the session, the user is asked to record his level of satisfaction by simply choosing yes or no.

*21. Did you find what you were looking for?*
Optional. At the end of the session, the user is asked to indicate his level of satisfaction by choosing yes or no.

*22. Observations*
Optional. Open text field.

## Statistical analysis

From the user profile variables, we selected three for statistical analysis of the information stored in the databases. These variables are sex, age range and level of schooling. They were selected because of their relevance and the need to determine the impact that ICTs may be having in relation to the gender, age and education level of users.

The analysis module in this application compares the percentages derived from the data compiled for the other variables with the three selected variables, and automatically generates columns of data and graphics (pie and bar graphs).

## What does cross-comparison of variables tell us?

We describe below the variables used and an analysis of the information that can be extracted by crossing each of those variables with the three variables selected for comparison (gender, age and level of schooling).

### Occupation

In the "occupation" variable, we distinguish between those requiring a university degree (in careers such as architecture, art, business administration, education, health, economics, humanities, law and politics, natural sciences, social sciences, engineering), student, military and trade.

*Gender versus occupation*
If the telecentre administrator knows which occupations are most common among men and women, for example, the centre's initialization pages can be designed to include content relevant to those occupations. Training workshops in the use of Internet tools (navigators and search engines) can be tailored to the information of greatest interest for these groups. Information on occupation will also give the administrator an idea of the level of complexity that users can handle in terms of graphics and reading comprehension.

*Level of schooling versus occupation*
By checking whether a user's occupation is related to his level of schooling, we can learn much about the labour market in our countries, where many people with university degrees are not working in their areas of training but in other areas. This could allow for more effective management of applications such as "employment grants", academic refresher courses, completion of studies, etc. Knowing the average education level of the community served by the centre can help to identify specific educational needs.

*Age versus occupation*
Comparing occupations against age ranges can show what the most traditional occupations are in the community and what changes that community is experiencing in terms of purchasing power, retaining young people, etc.

## Distance

The "distance" variable distinguishes whether users live in the neighbourhood where the access centre is located, in the same sector, in another one nearby or further away, or in another city.

*Gender versus distance*
Determining whether men or women live closer or further with respect to the access centre can be used to determine the centre's radius of coverage and influence; to determine the distribution cost of promotional flyers and posters; to structure accompaniment programmes for people who live further away (e.g. for young women in areas where crime rate is relatively high); and to define the hours of training workshops so that women and youngsters who live further away can attend without having to go home too late at night.

## Uses

The "uses" variable distinguishes services relating to Internet navigation, e-mail, chats, file transfer, music, video, voice-over-Internet Protocol (IP), word processing, data processing, page design, graphic design, games, multimedia, and printing and scanning documents.

*Level of schooling versus uses*
A user's level of schooling may indicate to the administrator the complexity of the services he would use. Online research or advanced search options might be less used among a population that has not completed elementary school. In this case, the centre's administration would need to make greater efforts to help each user cope at a higher level of complexity.

### Access to communication media

This variable distinguishes between the traditional media: telephone, radio, television, press and magazines.

*Age versus access to communication media*
With these variables, we can determine the degree of isolation from information and knowledge according to age within the local community. "Media access" also includes the Internet option, which could serve to determine the degree of importance that Internet access has for the community (e.g. whether it is higher than for the conventional media). This variable can also be used to determine how "oral" that community's culture is: this may suggest that information needs to be accessed through audiovisual services, which will require better connectivity. That might imply permanent expansion of the centre's connectivity channels or the search for new connectivity options that are swifter and more efficient but will also cost more – on the other hand, they may encourage more frequent use of audio and video services, and since this normally requires more connection time it may well generate higher revenue for the centre.

### Why? Motivation for using the centre

The "why?" variable distinguishes between those who use the centre's services for work, entertainment, study, business, friendship, research, and others to be specified. Knowing the motivation of those who visit the centre can be useful in designing promotional strategies targeted, for example, at people with relatives living outside the country or in another city who want to maintain contact in the most economical way and may decide to use voice-over-IP services (Net2Phone, DialPad, among others).

## Additional functions

The following is a description of additional functions of the registration system.

*Graphic presentation of statistics*
During development of the statistics module, we found that people have difficulty understanding statistical information if it is presented only in table format. We experimented with a graphics generation package. If the research user wishes, however, he can still consult the tables.

*Remote control over all workstations via the Internet*
One of the problems facing telecentre administrators is how to maintain control from their workstations over the use and duration of use of the terminals under their responsibility. This is manageable if the centre has fewer than 10 computers, but in larger centres a single person will be overwhelmed by the task. This module allows various functions to be controlled from one workstation.

*Scalability in the application*
Many networking solutions available on the market are designed for a certain number of terminals. The dynamics of telecentres suggest that they will increase their capacity as demand rises. The idea of making the application scalable (i.e. it can function properly with as few as 2 and as many as 100 or more computers ) is intended to allow for the expansion of installed capacity without having to modify the registration system and to install and configure it all over again.

*Defining different types of administrators with different levels of access*
When we started our research, we assumed that the telecentres would have the freedom to decide with whom to share information captured through the registration system. In this way, if in the future we develop a module for sharing information among centres, each one will be able to decide who can access its databases and to what depth.

*Controlling the appearance of the interface (logo, font, colour)*
Many telecentres have developed their own corporate image, or they belong to organizations or programmes that have predefined corporate colours. If the registration interface cannot be adapted to these designs, it may discourage use of the registration system by centre administrators.

*Capability of translating the registration system's interface into any language*
Translating applications is one of the most difficult tasks facing community access providers. An error in digitization can disconfigure the entire application, and it will take much time to restore it and may require shutting down the service for some time. For this reason, we introduced a feature that allows the entire interface to be translated by modifying just one file.

*Possibility of adapting terms in the forms to expressions peculiar to each country*
During the initial stages of our research, thanks to the cooperation of the virtual community Somos Telecentros, it became clear that the terms used for certain concepts vary from one country to another. For this reason, we designed a module that allows changes to the "external values" (names of the variables) that appear in the forms to be completed by the user, while retaining certain categories within the structure of the database. This means, for example, that when a user in Mexico is asked about his level of education

he can respond "***preparatoria***", while a Colombian user would reply "***bachillerato***", and the database will record both answers under the category "basic secondary education" for the variable "level of schooling".

Other additional features are the possibility of installation on a Windows platform, although with certain functional limitations, and the possibility of monitoring the duration and cost of promotional campaigns to ensure that the telecentre is self-sustaining.

## Recommendations to telecentre administrators

1. Develop mechanisms for automated installation of the application and of all programs required for it to function properly (plug and play), since in its current form the application requires several hours of work and specific technical knowledge to install it satisfactorily.
2. Conduct consolidated comparisons of several telecentres at the local, national and regional levels. The application was designed to allow subsequent development of this module to include an ID code for the telecentres among the identification variables. This module will be very useful for examining the functioning and performance of large or small telecentre networks belonging to the same project or organization, financed by the same donor, serving the same community, operating in the same city or country, or those that have decided to share information on their functioning and to work together.
3. Expand the statistical analysis modules so that application users (telecentre administrators and researchers in new technologies) can make new cross-comparisons of variables and use simple mechanisms for selecting the variables needed to build new indicators. During our research, we recognized that the number of indicators that can be derived from statistical tables depends on the objectives and scope of the research in question. The idea of this module is that researchers can select the variables they want for building research-specific indicators, using a very simple form.
4. Develop a module that allows backup copies of the system to be made and that facilitates the retrieval of information or of the previous configuration if it is accidentally modified.
5. Distribute the registration system in accordance with the official requirements of GNU/GPL licences. Meeting these requirements is essential if this application is to be included in GNU/GPL distribution programmes like Linux Red Hat. Unless all the standards are met, this application would not be recommended by the best-known suppliers of free distribution programmes and applications.

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## Notes

1. Planeta Colnodo <http://uib-teusaquillo.colnodo.apc.org>.
2. Fundación Programa de Educación para Adultos del Suroriente PEPASO, San Cristóbal <http://uib-pepaso.colnodo.apc.org>; Fundación Teatral Kerigma, Casa de la Cultura, Bosa <http://uib-kerigma.colnodo.apc.org>; Fundación AVP para el Desarrollo Social, Suba <http://uib-favp.colnodo.apc.org>.

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# The Internet, rights and society

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# The impact of new information and communication technologies on privacy rights

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## Introduction

The growing levels of information technology available to state agencies and individuals, and the exponential growth in access to sources of information over the Internet, are giving rise to situations that until a few years ago were unimaginable. In some cases, these applications can be abused by those so inclined to threaten some of our fundamental rights. Meanwhile, national legislation and international instruments governing the use of these applications may not be adequate: they are rapidly becoming out of date and are leaving potentially dangerous regulatory gaps. At the same time, both the content and the accessibility of information are being viewed in new ways and are being used, for example, as an instrument to make public policies more effective or to pursue private interests.

The situation is changing so fast that the conventional rules of ethics and law no longer seem effective, and the justice system has been little involved in the area of privacy violations. This means that the body of available case law (which is in fact a more dynamic way of establishing rules than the legislative route) is very limited.

On the Internet, as well as in the information systems of government and private parties, the growing capacity of search engines as well as increased storage capacity[2] are rendering the rights of privacy and intimacy ever more vulnerable. On the other hand, the ease of connectivity and the interactivity of data tend to blur the limits of information systems, and this is true not only of data that are stored electronically.

This research project attempts to assess the impact of information and communication technologies (ICTs), and in particular that of personal databases, on the rights to privacy and intimacy, with a view to developing legal, judicial and technical mechanisms for their protection. We also attempt to develop some paradigms for information systems that will meet the needs for which they were created (the principle of "end purpose") without posing a threat to privacy and intimacy.

We selected a group of countries (Argentina, Brazil, Costa Rica, Chile, Jamaica, Ecuador, Mexico, Dominican Republic, Trinidad and Tobago, Venezuela and Uruguay) in which we tried to identify situations, legislation and case law, if not in an exhaustive manner then at least ensuring that the information collected would provide a clear appreciation of violations and of approaches to guaranteeing those rights.[3]

## The right to privacy, intimacy and personal data

The treatment of rights to intimacy and privacy has differed between the Common Law tradition of Anglo-Saxon countries and continental law, primarily that of Spain, France and Latin America. In the Anglo-Saxon tradition, privacy rights cover a broader field (Shepherd 2001):

(a) As a right that is fundamental to liberty
(b) As a means of preventing and protecting against totalitarianism
(c) As the "right to be left alone"[4]

In the United States, the right to privacy was established by a series of Supreme Court decisions defining a realm of personal decisions in which the state could not intervene. The legal precedents refer to acts of many different kinds: in ***Pierce v. Society of Sisters***,[5] a law requiring initial instruction in English was struck down; in ***Skinner v. Oklahoma***,[6] a law requiring the sterilization of certain kinds of criminals was overturned. In ***Griswold v. Connecticut***,[7] which challenged a law prohibiting the use of contraceptives, the Court for the first time referred to the "right to privacy". The concept of privacy has since been extended to more controversial situations: ***Cruzan v. Director, Missouri Department of Health***[8] (refusing medical treatment), ***Roe v. Wade***[9] (abortion), and ***Washington v. Glucksberg***[10] (assisted suicide).

Rubenfeld (1989) points to the identification of the right to privacy as a set of prohibitions and protections against totalitarianism. This view suggests that the protection of privacy and personal data constitutes rights that should be of concern not only to industrialized countries with strong democratic traditions. Some developing countries have suffered totalitarian regimes that were totally out of control. What kind of power would a deeper and more individualized knowledge of individuals give such regimes? Is not privacy the best protection against state persecution for minorities and dissidents?

In the continental tradition, the rights to intimacy and to one's own image are closely related to the concept of defending one's honour. The first clear reference to the protection of intimacy is found in the ***Lex Comelia de iniuris*** (AD 81). Most current legislation considers the right to personality as a fundamental right (Peña González 1996).

Osvaldo Gozaíni (2001) offers some interesting thoughts about the history and process by which these rights took shape. "In current terms, the concern for intimacy is the result of a long historical process of the transformation of

conscience, beginning with the counter-reformation and on through the critique of religious conscience by the philosophers of the 18th century (Hobbes, Locke, Descartes, Spinoza), culminating in the construction of the moral conscience, begun by Thomasius and completed by Kant. It is man's freedom that allows him to judge his actions for himself and to determine his will on the basis of his innate inclination to morality. Juan Manuel Fernández López adds that this concept of man gives meaning to the current notion of intimacy as a necessary attribute of his new status of freedom–autonomy. The duality of the individual (as both internal and social being) is translated into a two-way intimacy that relates both to self (***ad se***) and to others (***ad alteros***). Intimacy, while it relates primarily to an individual's own, private space, acquires its full meaning only vis-à-vis others, against whom it is defended or with whom it is shared. Thus, intimacy is simultaneously a condition of the individual personality and of the social personality." Gozaíni maintains that while Europe pursues the defence of the individual through rules that specify the limits of the state and of individuals in the handling of data, the United States has essentially no constitutional policies on this issue: it has left it to the courts to review acts that may violate the right to privacy (for example, by including abortion within the intimate sphere of the woman), a process that led in 1994 to the Privacy Act. Similarly, the distinction that Europeans make between the data rights of individuals (ownership of data) and the rights of those who handle or administer those data (databases) seeks to expand the field of individual rights and limit the use of data in the possession of businesses, unless they have the owner's consent to use them for a specified purpose.

American jurisprudence, which is broad and generous in this area of fundamental rights, reveals a successive pattern of protections that began with the famous "right to be left alone", went on to address relations with the press and the communication media, and culminated with the protection of data that are compiled in computer format.

The work of Alberto Bianchi (1995) shows that in the United States the protection of the right of privacy embraces many cases and a large body of doctrine, although the problem always revolves around the concept to which Justice Louis Brandeis gave expression when he said that privacy signifies "the right to be left alone". Of course, Bianchi adds, if we go back to the origins of the right to privacy, we will find, in the first place, that it is a typically Anglo-American concept. Its history can be divided into four periods for methodological purposes. The first runs from the origins of the Common Law until 1890, when Warren and Brandeis published their celebrated article (1890). The second period extended to the essay published in 1960 by William Prosser and focused primarily on emerging issues of privacy and press. The third period, where the focus on privacy shifted from the United States to England, begins with the draft law prepared by Lord Mancroft and deals primarily with the conflict between privacy and the mass media. Finally, the fourth period begins in 1969 with the draft Walden Act, which for the first time raised the problem of ownership over personal data stored in computers.

In US legal history, the right to privacy is intended to protect individuals' feelings and sensitivities and not their property or their financial interests, and so it is seen as a personal right that ends with death.[11] It has been noted, for example, that criminal records for minors (which are protected) can be opened if a person dies under unexplained circumstances. This viewpoint is not shared in the continental system, where intimacy and privacy are linked to honour (Cifuentes 1995).

Another clear aspect of the continental tradition is that there is no privacy for "legal" or "moral" persons, i.e. corporations. The Supreme Court in Venezuela has repeatedly declared this (e.g. in ***Inversora Bohemia II CA and Valores HB***). By contrast, in the case of ***Collymore et al. v. General Attorney*** in Trinidad and Tobago, the Privy Council maintained that this right did extend to ***de facto*** corporations, such as labour unions.[12]

## Status of legislation in the region

### International instruments

**Table 1. International instruments relating to the rights of privacy and intimacy**

| | |
|---|---|
| 1948 | American Declaration on the Rights and Duties of Man (Articles II, III and XXII) |
| 1948 | Universal Declaration of Human Rights (Preamble, Articles 2.1, 16 and 18) |
| 1948 | Convention on the Prevention and Punishment of the Crime of Genocide (II) |
| 1966 | International Covenant on Economic, Social and Cultural Rights (Articles 2.1, 13.1, 13.3 and 17) |
| 1966 | International Covenant on Civil and Political Rights (Articles 2, 4 and 20). |
| 1967 | International Convention on the Elimination of All Forms of Racial Discrimination (Article 5) |
| 1969 | American Convention on Human Rights (Pact of San Jose) (Articles 1, 11, 12, 13.5, 16, 22.8 and 27 |
| 1980 | Guidelines of the Organisation for Economic Co-operation and Development (OECD) on the Protection of Privacy and Transborder Flows of Personal Data |
| 1989 | Convention on the Rights of the Child (Preamble, Articles 2, 14, 16, 20, 29, 30 and 40.2.VII) |
| 1990 | United Nations Guidelines concerning Computerized Personal Data |
| 1995 | Directive 95/46/CE of the European Parliament |
| 1998 | Universal Declaration on the Human Genome and Human Rights (Articles 5 and 7) |
| 2000 | Optional Protocol to the Convention on the Rights of the Child concerning the sale of children, child prostitution and child pornography (Article 2.c) |

## Legislative trends

Some countries' legislation contemplates different systems of access, or limitations, to personal databases, depending on the type of file involved. However, the question is difficult and requires further debate. In surveying current trends in the protection of personal data, we start with Directive 95/46/EC of the European Parliament and the Council of Europe, of October 24, 1995, "on the protection of individuals with regard to the processing of personal data and on the free movement of such data", which reads:

SECTION 1. PRINCIPLES RELATING TO DATA QUALITY

Article 6.1. Member States shall provide that personal data must be:

(a) processed fairly and lawfully;
(b) collected for specified, explicit and legitimate purposes and not further processed in a way incompatible with those purposes. Further processing of data for historical, statistical or scientific purposes shall not be considered as incompatible provided that Member States provide appropriate safeguards;
(c) adequate, relevant and not excessive in relation to the purposes for which they are collected and/or further processed;
(d) accurate and, where necessary, kept up to date; every reasonable step must be taken to ensure that data which are inaccurate or incomplete, having regard to the purposes for which they were collected or for which they are further processed, are erased or rectified;
(e) kept in a form which permits identification of data subjects for no longer than is necessary for the purposes for which the data were collected or for which they are further processed. Member States shall lay down appropriate safeguards for personal data stored for longer periods for historical, statistical or scientific use.

2. It shall be for the controller to ensure that paragraph 1 is complied with.

## The rights of intimacy and privacy in the Americas

Some American countries have legislation of a general nature for protecting privacy and personal data. In Canada, the Privacy Act (1983) replaced an earlier set of rights contained in Part IV of the Canadian Human Rights Act. The objective of the Privacy Act was to provide better protection from the impact of new technologies and the growing tendency of government to create information systems. This law enhances transparency and gives Canadians greater control over personal data stored in government systems.

The regulations require the government to:

- limit the collection of personal information to that which relates directly to government programmes or activities
- collect information directly from the person to whom it relates, wherever possible
- inform the person why the information is requested and how it will be used
- not to use the information for any other purpose, except as permitted by law
- retain the information in such a way that the person to whom it refers has a reasonable opportunity to obtain access to it
- ensure that the information is accurate, up-to-date and as complete as possible
- not release personal information except where this is permitted by the Privacy Act or other legislation

In the United States, privacy rights are not spelled out in the Constitution but are considered to fall under its "penumbra", i.e. they are implicitly provided by constitutional principles.[13] In successive judgements, the Supreme Court has held that the Fourth and the Fourteenth Amendments protect individuals from certain kinds of invasion in their private life. Currently, there are many provisions regarding privacy scattered throughout the US Code.

The Constitutions of Colombia, Brazil, Argentina and Peru contain generic protection that in some cases is distilled in legislation or regulations. Article 5 of the 1988 Brazilian Constitution establishes the right of ***habeas data***:

> TITLE II. FUNDAMENTAL RIGHTS AND GUARANTEES
>
> CHAPTER I. INDIVIDUAL AND COLLECTIVE RIGHTS AND DUTIES
>
> Article 5. All persons are equal before the law, without any distinction whatsoever, and Brazilians and foreigners resident in Brazil are assured of inviolability of the right of life, liberty, equality, security, and property, on the following terms:
>
> XXII. The right to habeas data is granted: a) to ensure knowledge of information relating to the person of the petitioner, contained in records or data banks of government entities or of public entities; b) for the correction of data, if the petitioner does not prefer to do so through confidential, judicial, or administrative proceedings.

Equivalent prescriptions are to be found in the 1991 Constitution of Colombia (Article 15), the 1993 Constitution of Peru (Article 200.3) and the 1994 Constitution of Argentina (Article 43).

Several countries already have specific legislation for protecting the rights of intimacy, privacy and personal data: Argentina (2000), Brazil (1997), Chile (1999), Ecuador (1997), Dominican Republic (1997) and Venezuela (1991). In most cases they are intended to regulate habeas data. In a few cases, such as Mexico and Uruguay, parliamentary initiatives are now under discussion.

## Comparative analysis of national standards

**Table 2: Legislation on privacy and intimacy**

| | |
|---|---|
| **Argentina** | |
| | Civil Code (Article 1071 bis) |
| 1997 | Financial Institutions Act (Law 21,526, Articles 39 and 40) |
| 1997 | Judicial Procedures Act (Law 11,683, Article 101 on Fiscal Secrecy) |
| 1990 | AIDS Prevention Act (Law 23,798) |
| 1994 | Constitution of Argentina (Articles 18, 19 and 43) and treaties incorporated into the National Constitution with the reforms of 1994, as they refer to the protection of private life |
| 1995 | Mediation and Conciliation Act (Article 11) |
| 1998 | Credit Cards Act (Law 25,065, Article 53) |
| 1999 | Ethics in the Exercise of Public Duties Act (Law 25,188, Articles 10 and 11) |
| 2000 | Personal Data Protection Act (Law 25,326) |
| 2000 | Alimony and Child Support Registration Act, Province of Neuquén |
| 2001 | Act Creating the National Registry of Haematopoietic Progenitor Cell Donors (Law 25,392) |
| **Brazil** | |
| 1964 | Law No. 4595 (Article 38) |
| 1996 | National Tax Code (Law No. 5172, Article 198) |
| 1978 | Constitution of the Federal Republic of Brazil (Article 5) |
| 1990 | Code of Consumer Protection and Defence (Articles 43, 44 and 45) |
| 1990 | Statute of the Child and the Adolescent (Articles 10.1, 17, 240, 241 and 247) |
| 1996 | Telephone Tapping Law (Law No. 9296) |
| 1997 | Law Regulating the Right to Access to Information and Governing Habeas Data Procedures |
| **Chile** | |
| 1928 | Decree 950 of 1928, Article 10, supplemented by Decree 516 of 1988, on the Commercial Information Bulletin |
| 1967 | Law 16,643 on Misleading Advertising |
| 1980 | Political Constitution of the Republic of Chile (Article 19, Paragraph 4). |

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Table 2 continued

| | |
|---|---|
| 1993 | Law 19,223 on Computer Crimes |
| 1994 | Decree 1137, Regulating the National Disabilities Registry (Law 9284) |
| 1999 | Law 19,628, Protection of Personal Data |

**Costa Rica**

| | |
|---|---|
| 1929 | Political Constitution of the Republic of Costa Rica (Articles 38 and 24) |
| 1989 | Constitutional Jurisdiction Act (Law 7135, Articles 2, 15, 29, 57 and 66). |
| 1978 | Criminal Code (Article 196). |
| 1989 | Constitutional Jurisdiction Act (Articles 2,15, 29, 57 and 66) |
| 1995 | Law Against Sexual Harassment in Employment and Education (Article 23). |
| 1995 | Creation of the 911 Emergency Call System (Law 7566, Article 13). |
| 1996 | Constitutional Reform (Article 24 and 26) (Law 7607, Article 1). |
| 1996 | Juvenile Criminal Justice Act (Articles 20, 21 and 99) |
| 1996 | Law on Equal Opportunities for Persons with Disabilities (Article 40). |
| 1996 | Code of Criminal Procedures (Articles 181, 196 and 295) |
| 1998 | National Statistics System (Law 7839, Article 10) |
| 1998 | Code of Childhood and Adolescence (Article 25) |

**Dominican Republic**

| | |
|---|---|
| 1962 | Law on Freedom of Expression and Thought (Articles 41 to 45) |
| 1965 | Banking Act (Articles 31 to 34) |
| 1994 | Political Constitution of the Dominican Republic (Articles 8.9 and 8.10). |
| 1994 | Code for the Protection of Children and Adolescents (Articles 66, 67 and 237). |
| 1997 | Criminal Code (Articles 336 to 338, as amended by Law 24-97). |
| 1998 | Telecommunications Act (Articles 5 and 6) |
| 2000 | Resolution 36 of the Dominican Telecommunications Institute (INDOTEL) (Articles 1 to 9). |
| 2001 | Law No. 11-01 on the Enforcement of Tax Obligations (Article 3, Paragraph I). |

**Ecuador**

| | |
|---|---|
| | Criminal Code (Articles 197 and 213) |
| 1974 | Judicial Functions Act (Article 201) |
| 1992 | Special Telecommunications Act (Law No. 184), Article 14. |
| 1996 | Minors Code (Article 168) |
| 1997 | Constitutional Control Act (Articles 24 and 45 on Habeas data) |
| 1998 | Political Constitution of the Republic of Ecuador (Article 23.8) |
| 2000 | Code of Criminal Procedures (Article 69.6 on the Rights of the Accused) |

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2000 Act to Reform the Disabilities Act (Article 14 on the National Registry of Disabilities and General Regulations to the Disabilities Act of February 4, 1994, Articles 51 and 52)
2001 Financial Institutions Act (Articles 88 to 94) Draft Law on Electronic Commerce, Electronic Signatures and Data Messages

**El Salvador**

1972 Labour Code, Article 406
1983 Constitution of the Republic of El Salvador (Articles 2 and 6)
1994 Code of Civil Procedures, Article 156 Notaries Public Act, Article 11.
1994 Young Offenders Act, Articles 5 and 30
1994 Family Court Act, Article 215.
1995 Transitional Law on the Registration of Family Status and Marriage Contracts, Articles 3 and 17
1997 Criminal Code, "Calumny and Injury" (Articles 177 to 183) and "Crimes relating to Intimacy" (Articles 184 to 191)

**Jamaica**

1962 Constitution of Jamaica (Chapter III, Titles 19 and 22)
1992 Banking Act (Title 45 and Table 4)

**Mexico**

1917 Federal Constitution (Articles 6 and 7)
1917 Law on Crimes relating to Printing (Articles 1 and 9)
1990 Credit Institutions Act (Articles 112 bis, 117 and 118)
1990 Financial Conglomerates Act (Article 33) Act to Protect and Defend Users of Financial Services (Articles 13, 14, 15)
2001 Draft Federal Law on the Protection of Personal Data, sponsored by Senator Antonio Garcia Torres, PRI

**Trinidad and Tobago**

1921 Act Establishing the Registrar General (Sections 4 to 6)
1925 Children's Act (Section 87)
1952 Statistics Act (Sections 8 and 9)
1955 Alcoholic Beverages Sale Permits Act (Section 57)
1960 Private Hospitals Act (Section 8)
1960 Food and Drugs Act (Table 2)
1965 Police Services Act (Sections 37 and 111)
1978 Firearms Act (Section 29)
1980 Constitution of the Republic of Trinidad and Tobago (Section 4(c))

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Table 2 continued

| | |
|---|---|
| 1999 | Freedom of Information Act (Section 29) and Freedom of Information Act (Amendment) |
| 2000 | Act Establishing the Registrar General (Amendment) (Section 3) |
| 2000 | Integrity in Public Life Act (Section 2 and Table) |
| 2000 | Computer Abuse Act (Part II, Sections 3 to 10) |
| 2000 | DNA Identification Act (Sections 39 and 40) |
| 2000 | Electronic Funds Transfer Crimes Act (Section 20) |
| 2000 | Draft Telecommunications Act (Sections 24, 65 and 80) |

**Uruguay**

| | |
|---|---|
| 1988 | *Acción de Amparo* (Appeal for Constitutional Protection) (Law 16,011) |
| 1997 | Constitution of the Republic (Articles 7 and 29) |
| 2000 | Draft Law on the Right to Information and Habeas data |
| 2000 | Draft Law Creating the National Registry of Alimony Debtors |
| 2000 | Draft Law Regulating Credit Bureaus and Similar Information Databases |
| 2000 | Draft Law Regulating the Use of Databases |
| 2000 | Draft Law Creating a Special Form of Civic Registration for Persons with Physical Disabilities |
| 2000 | Draft Law on Individuals or Corporations Administering, Managing or Obtaining Information from Any Database |
| 2000 | Draft Child and Adolescents Code (Articles 11, 22 (f) and 211 to 215) |

**Venezuela**

| | |
|---|---|
| 1999 | Constitution of the Republic of Venezuela (Articles 48, 60, 143 and 283.1) |
| 1977 | Transfusions and Blood Banks Act (Article 24) |
| 1979 | Criminal Records Act (Articles 2 and 6) |
| 1991 | Communications Privacy Act |
| 1998 | Resolution 2001-06-98 of the Superintendency of Banking |
| 2000 | Law on the Protection of Children and Adolescents (Articles 50, 65 to 68, 139, 227 and 228) |
| 2000 | Telecommunications Act (Article 190) |
| 2001 | Decree Law on Data Messages and Electronic Signatures |
| | Draft Public Defender Act |

## Conflict of rights

Most judicial cases involving violations of intimacy or privacy are decided by weighing the interests at stake. There are at least three possible scenarios:

- Conflict between fundamental rights.
- Weighing collective rights and interests.
- Weighing private rights and interests.

## Conflict between fundamental rights: Freedom of expression

The most interesting example of a conflict between fundamental rights occurs with freedom of expression. In a recent Declaration of Principles on Freedom of Expression, the Inter-American Commission on Human Rights, during its 108th regular session, declared:

> Privacy laws should not inhibit or restrict investigation and dissemination of information of public interest. The protection of a person's reputation should only be guaranteed through civil sanctions in those cases in which the person offended is a public official, a public person or a private person who has voluntarily become involved in matters of public interest. In addition, in these cases, it must be proven that in disseminating the news, the social communicator had the specific intent to inflict harm, was fully aware that false news was disseminated, or acted with gross negligence in efforts to determine the truth or falsity of such news.

The question has been addressed in a number of judicial cases. Perhaps the most significant was that resulting from publication in Argentina of a book entitled ***Impunidad diplomática*** (Diplomatic impunity) (Martorell 1993). The book was banned in Chile, and that decision was "confirmed" by the Supreme Court.[14] The case was brought before the Inter-American Commission on Human Rights, which finally recommended to the government of Chile that it allow the book to be distributed and sold freely.[15] In its statement of reasons, it said: "The Commission considers that it is not for the Commission to examine the content of the book in question or the conduct of Mr Martorell, because it does not have competence in the matter and because the right to honour is duly protected under Chilean law. Moreover, as the proceedings in the instant case show, those persons who believe that their honour and dignity had been impugned have, in the Chilean courts, adequate remedies to settle the question. For that reason, the Commission cannot accept the Chilean government's argument that the right to honour would be higher than the right to freedom of expression" (Fuentes Torrijo 2000: 427).

Freedom of expression has been given a different connotation in recent years, thanks to the attitude that newspapers have adopted with respect to the Internet. The current tendency is for newspapers to post their daily headlines and lead stories on their web sites, and to offer facilities for searching their previous editions. The search engines can look for news on the basis of personal names, which means that any news story containing such a name becomes in effect indefinitely accessible.

For analyzing the situation, there are a number of judicial decisions in the United States examining the loss of privacy rights, in particular for individuals who are categorized as "public figures". The California courts have also held that "public figures" are entitled to a "zone of privacy".[16]

The US Supreme Court has pointed to the conflict between freedom of the press and privacy rights in two precedent-setting judgements: ***Cox Broadcasting Corp. v. Cohn***[17] and ***Florida Star v. BJF.***[18] In both cases, the Court held that the First Amendment does not allow states to claim privacy when the press publishes truthful information legitimately obtained from public documents or proceedings involving matters of public interest. In assessing a public figure's claim for damages resulting from invasion of privacy, the courts have ruled that a famous person has to some extent lost the right of privacy.[19]

Williams (1999) maintains that the standard of "newsworthiness" used by the courts to evaluate claims for invasion of privacy is not sufficiently clear for editors to be reasonably able to avoid lawsuit and argues that the courts should analyze: (i) the social value of the facts published; (ii) the extent to which the article ostensibly intrudes into private matters; and (iii) the degree to which the person involved has placed himself in a position of public notoriety.

These concepts suggest two categories of public persons. "Voluntarily public persons" are those who have placed or exposed themselves before the public's gaze through their activities or through assuming a prominent role in institutions or activities of general public interest. Such considerations have been applied to actors,[20] professional athletes,[21] politicians,,[22] musicians, performers and cartoonists,[23] to deem them "public figures". It is argued that the public has a legitimate interest in obtaining information on voluntarily public persons and that this information may extend to aspects that for other persons would be private. In contrast, "involuntarily public persons" are those who have not sought public attention but who have become "news" as a result of their involvement or association with some event of public notoriety. This category includes, for example, victims of crimes or accidents, persons on trial for crimes or persons who have performed heroic acts. A person may become involuntarily public, and therefore lose a portion of his privacy, simply by the fact of being related to a person who is voluntarily public.[24] One relevant case for the definition of this category is ***Kapellas v. Kofman,***[25] in which a newspaper published an editorial critical of Ines Kapellas, a candidate for elected office, referring to the fact that her son had been arrested and that her daughter had been found wandering the streets on various occasions. The Supreme Court of California ruled that the children had lost their privacy as a result of their mother's candidacy. The courts have also held that those who lose their privacy can never retrieve it.[26]

It is obviously very difficult to establish who are public persons and, among them who are voluntarily or involuntarily public figures. Latin American legislation would seem more restrictive in the concept of involuntarily public persons. The Ethics in the Exercise of Public Duties Act (1999) of Argentina includes an exhaustive list of public persons who are required to reveal their assets.[27] In Trinidad and Tobago, the list of "persons in public life" contained in the Integrity in Public Life Act (2000), Section 2 and the final table, is highly restrictive.

In ***R.M.F.G. v. D.A.***,[28] the court ruled that "the rights to honour and to freedom of expression are of the same hierarchical order as fundamental rights"; and in ***H.V.P.***,[29] "when there is a conflict of rights. . . between the freedom of expression and information and the right to honour and intimacy, there must be a weighing of interests. . . interference in another person's honour can be justified in the public interest, in the general interest. . . ".[30]

In the Common Law, establishing liability for damages deriving from the disclosure of private information requires that the information have been widely published and not confined to a few persons or to limited circumstances. In 1972, the Constitution of California was amended to provide privacy as an inalienable right of citizens.[31] Before that amendment, in ***Hill v. National Collegiate Athletic Association***[32] and later in ***White v. Davis***,[33] the Supreme Court of California defined the criteria for deciding invasion of privacy claims. According to those rules, plaintiffs must: (i) identify a specific and legally protected privacy interest, (ii) prove that the plaintiff had a reasonable expectation of privacy, and (iii) prove a serious invasion of privacy.

The supremacy of the freedom of expression is under discussion at this time in relation to the case of ***Free Speech Coalition v. Reno***. The Child Pornography Prevention Act of 1996 prohibits the publication of any image that "appears" to show explicit sexual conduct by a child. In this case, the argument is over whether the law (the purpose of which is to protect children) applies to images created by software, in which no child has participated.[34] This is another interesting example of the difficulties in adapting juridical norms to technological changes. The case was accepted for consideration by the US Supreme Court on January 22, 2001.[35]

## Weighing the collective interest

In ***Vernonia School District v. Wayne Acton et ux***,[36] the US Supreme Court evaluated the Student Athlete Drug Policy that was adopted by the Vernonia School following the discovery that athletes were leaders of the drug culture among students because of concern that the use of drugs increases the risk of injury during sporting activities. The policy authorizes the taking of random urine samples from students participating in athletic programmes. James Acton was banned from the school football programme when he and his parents (also parties in the proceedings) refused their consent for such a test. They went to court, seeking an injunction and a corrective order on the grounds that the policy violated the Fourth and Fourteenth Amendments and the Constitution of Oregon.

The Supreme Court held that the policy was constitutional under the Fourth and Fourteenth Amendments. Whether a search meets the reasonableness standard "is judged by balancing its intrusion in the individual's Fourth Amendment interests against its promotion of legitimate governmental interests". The first factor to be considered in establishing "reasonableness" is the nature of the privacy interest, on which opposition to

the examination was based. The subjects of the policy are children who have been committed to the temporary custody of the state. As the school authority, the state can exercise a greater degree of supervision and control than it could over competent adults. The requirement that children in a public school submit to physical examinations and vaccination indicates that they have a diminished expectation of privacy with respect to medical examinations and procedures than the rest of the population. Student athletes have even less legitimate expectation of privacy, since by participating in athletic activities they expose themselves implicitly to a kind of "communal undress" and, moreover, athletes are subject to pre-season physical examinations and rules of conduct. The Supreme Court held that the Fourth Amendment does not require the "least invasive" search or examination, and therefore the argument that the analysis to determine drug use could be based on the suspicion of such use, even if proven, would not be decisive; it also pointed out that such an alternative presents substantive difficulties of its own.[37]

The ruling in ***CODEPU v. Gendarmería de Chile y otro*** (Supreme Court 1995) confirmed that installing microphones in prisons falls within the security measures contemplated by Decree No. 353 (2) of the Ministry of Justice. In this case, the court confirmed indirectly that public security takes precedence over privacy rights. The decision has been the subject of international debate.[38]

Normally, legislation and case law recognize the possibility of personal and documentary inspections when there are reasonable grounds to suspect that a crime has been committed. In Jamaica, in the case of ***King v. the Queen***[39] (Privy Council 1968), it was established that Title 18 of the Constabulary Force Act does not state the terms under which a personal search is to be conducted and that Article 22 does not give a justice of the peace the mandate to authorize a personal search. The evidence against the defendant (during a search of Mr Herman King without his consent, marijuana was found in his trouser pocket) was obtained illegally and must be excluded. On the contrary, in Trinidad and Tobago, in the case of ***D. Davidson vs. R. Williams and the Attorney General***[40] (Supreme Court 1988), the police obtained two warrants to search the plaintiff's house and to seize the documents mentioned in the warrants, which provided evidence that Title 4 (2a) of the Falsification Act had been violated. The plaintiff went to court arguing that the procedure used was illegal and unconstitutional, and seeking damages. The court rejected the claim that the plaintiff's rights under Title 4 (c) of the Constitution were affected.

Banking secrecy is treated in some legislation as coincident with the right to personal data. In the case of ***Douglas and Others v. Pindling***,[41] the court ruled that the right not to have banking information disclosed without consent, established in Section 10 of the Banks and Trust Companies Regulation (Amendment) Act of the Bahamas, was superseded by the public interest. A similar decision was rendered in the cases of ***Troy Megill v. General Attorney and Others*** and ***George Mayne v. General Attorney and Others***.[42]

### Weighing the private interest

Access to credit is seen as a private interest that contributes to economic development, which is a collective interest. For many years, obtaining a loan, either in cash or for the purchase of goods, was preceded by the posting of collateral (personal pledge or a mortgage on the goods). These requirements were in effect a barrier to obtaining loans for consumption, particularly for people with few resources. With the appearance of centralized information systems (credit bureaus), it was possible to develop databases on credit backgrounds. These databases contain personal information and allow access to credit both for persons who have no negative history and for those who have a positive history. Their defenders maintain that the existence of these credit bureaus does away with the inefficiency and ineffectiveness of resorting to the judicial system in suits to recover money. There is a generalized tendency in many countries that only an insignificant number of suits result in payment of the debt (directly or through auction), while in the remaining cases the debtor's insolvency or other circumstances will mean that the case concludes without resolution. Today, the risk of being reported to a credit bureau provides a disincentive to defaulting on payment, since the "sanction" for default is immediate, permanent and internationally known.

This situation is a source of debate: some argue that credit bureaus should be administered by the state, while others consider that this is a proper activity of the private sector. In the United States, for example, the borrower must give written authorization for the lender to consult the bureau, while in Latin America, at least in most cases, merchants can consult the bureau directly without even telling the borrower that his personal data are being checked. In some cases, debts that have been paid pursuant to legal proceedings are registered, while in other cases such data must be eliminated.[43]

Many of these problems are resolved through specific legislation – which is virtually non-existent in Latin America – and by recourse to habeas data.

## Access to information

One relevant point in analyzing the impact of new ICTs has to do with access to information – essentially, whether information is publicly accessible or restricted, and whether a person is guaranteed the right of access to his own information, which may include the possibility of correcting it or suppressing it. It is also relevant for the person to know that his information is being used and who is using it and for what purpose. The mechanism designed to protect these rights is habeas data.

With respect to habeas data a distinction is made between the form that protects the right to informational self-determination and the set of principles (equality, dignity, freedom) and rights (honour, reputation, intimacy, image, etc.) that can be violated by the handling of information – called the proper habeas data – and the extensive form that protects the right of access to public

information as the right to be informed in accordance with the republican principle that government acts are public. This distinction is merely a question of classification of the juridical goods protected. Nevertheless, both forms translate into certain powers that subjects may exercise for a variety of objectives, claiming subjective private rights in each case. Thus, a number of types and subtypes have been identified in doctrine (Sagües 1995).[44]

Informational habeas data covers access to records in order to know what information is stored, and it may be limited to this. Argentina, Brazil, Ecuador, Colombia, Guatemala, Peru and Paraguay make express provision for this, as does the Constitution of Portugal. One subtype within this category would be for the sole purpose of knowing what personal data are recorded, which may also include knowing certain specific public information, and is generally defined as the right of free access to sources of information, sometimes including the right to freedom of the press or of expression. Generally, this is limited when there is a state right to security. It is considered basic because it is the source of any other right to correct, suppress or request confidentiality for the data. Other subtypes relate to knowing the purpose (why and for whom the information was obtained) and the agent (identity of the person who sought and obtained the data).

Associative habeas data has to do with including a piece of information which, if excluded, would affect its owner and with clarifying any information contained. As an example with respect to credit bureaus, a person may request that an explanation be entered to the effect that he is not the principal debtor of an obligation, but rather the guarantor. The legislation of Argentina, Brazil, Colombia, Ecuador and Paraguay, as well as that of Portugal, provides for this expressly.

Remedial habeas data seeks to correct false, inaccurate or imprecise information as well as any other type of information that is so vague or ambiguous as to lead the reader to misinterpret it. For example, some databases may use expressions with a particular meaning that does not correspond to generally accepted technical use of the term (e.g. "disqualified debtor" in the juridical sense). Legislation in Argentina, Brazil, Colombia, Ecuador, Guatemala and Paraguay, as well as in Portugal, regulates this expressly.

Protective habeas data seeks to ensure that information is kept confidential and not disclosed to anyone. It is usually used for sensitive data that have to be stored, or for components of secret state data. Argentina, Peru and Portugal have constitutional provisions to this effect.

Habeas data of deletion seeks to eliminate data from files and is applied when preservation or confidentiality cannot be adequately protected (sensitive data, dangerous forms) or when further storage of the information makes no sense because it offers no benefit to society. This type is regulated in the legislation of Argentina, Ecuador and Paraguay.

To this point, the types and subtypes discussed are constitutionally recognized, but case law has also recognized other forms of habeas data:

- That used for challenging a mistaken interpretation of the information or of the decision stored.
- That used on a pre-emptive basis, until it has been decided whether the data should be retained or definitively cancelled.
- That used to de-personalize data or make it anonymous so that the subject referred to cannot be recognized. The right to security of data is the prevailing principle in this area, to the point that regulations require the use of technical measures to prevent unauthorized leaks.
- Habeas data is at times used for "assurance of security" purposes, where the court evaluates whether the proper technical means were used to prevent use of the data by unauthorized persons.
- The term ***compensatory*** applies to habeas data when seeking a court award of damages; and together with the "anonymous" form, it is always associated with other purposes, such as having the data furnished or corrected, or both.

Another point on which regulations differ relates to who is the active subject, an individual or a legal person. Depending on whether they include both categories or only the first, we may analyze the appropriateness of protecting one right or the other. If it is intimacy or privacy that is being protected, legal persons are not recognized and are excluded: the only aspect of legal persons that is protected is generally the economic one. In Spain, Germany, France and Ireland, in fact, such persons are excluded from protection. On the other hand, Switzerland, Austria, Denmark, Luxembourg and Norway provide protection with respect to the economic aspect. The United Nations allows contracting states to apply protection to legal persons (Puccinelli 1999).

Does protection cover only "sensitive data" or does it apply to all data? In some countries' legislation and case law, what must be protected is personal information referring to ideology, religion, colour, beliefs, etc., deemed to be "sensitive data" that if taken into account could imply discrimination and the violation of human rights. In other countries, however, it is considered that, with the cross-referencing of data and the absence of security as to their use, the speed with which computers can process information makes all data sensitive and therefore in need of protection.[45] Some countries' legislation enshrines the right to oppose the release of data (France) and may require consent to disclosure by the person involved (Spain). In the case of credit information, the debt must be certain, unpaid and already demanded by the creditor. In the case of private records, they must be registered and there must be proof that the data recorded there are accurate.[46]

Some countries, for example Argentina, Chile, Spain and Bolivia, have a specific law on habeas data. Others do not, although doctrine and case law generally apply other constitutional, legislative or regulatory norms to the same effect. Sometimes resort to constitutional protection is used, and on other occasions habeas data is sought (Pierini, Lorences and Tornabene 1999; Sosa 2000; Antik and Ramunno 2000; Slaibe and Gabot 2000).

## Risks and violations

The most relevant disputes relate not so much to the accumulation of information in paper format, as the civil registries of nearly all countries have been doing without entailing violations, but rather to the automated processing of those databases and the power of search engines. In this respect, legislation has progressed furthest in Europe.

DIRECTIVE 95/46/EC OF THE EUROPEAN PARLIAMENT AND THE COUNCIL OF EUROPE

SECTION II
CRITERIA FOR MAKING DATA PROCESSING LEGITIMATE

Article 7
Member States shall provide that personal data may be processed if:
(a) the data subject has unambiguously given his consent; or
(b) processing is necessary for the performance of a contract to which the data subject is party or in order to take steps at the request of the data subject prior to entering into a contract; or
(c) processing is necessary for compliance with a legal obligation to which the controller is subject; or
(d) processing is necessary in order to protect the vital interests of the data subject; or
(e) processing is necessary for the performance of a task carried out in the public interest or in the exercise of official authority vested in the controller or in a third party to whom the data are disclosed; or
(f) processing is necessary for the purposes of the legitimate interests pursued by the controller or by the third party or parties to whom the data are disclosed, except where such interests are overridden by the interests for fundamental rights and freedoms of the data subject which require protection under Article 1 (1).

SECTION III
SPECIAL CATEGORIES OF PROCESSING

Article 18 The processing of special categories of data
1. Member States shall prohibit the processing of personal data revealing racial or ethnic origin, political opinions, religious or philosophical beliefs, trade-union membership, and the processing of data concerning health or sex life.
2. Paragraph 1 shall not apply where:
   (a) the data subject has given his explicit consent to the processing of those data, except where the laws of the Member State provide that the prohibition referred to in paragraph 1 may not be lifted by the data subject's giving his consent; or

(b) processing is necessary for the purposes of carrying out the obligations and specific rights of the controller in the field of employment law in so far as it is authorized by national law providing for adequate safeguards; or

(c) processing is necessary to protect the vital interests of the data subject or of another person where the data subject is physically or legally incapable of giving his consent; or

(d) processing is carried out in the course of its legitimate activities with appropriate guarantees by a foundation, association or any other non-profit-seeking body with a political, philosophical, religious or trade-union aim and on condition that the processing relates solely to the members of the body or to persons who have regular contact with it in connection with its purposes and that the data are not disclosed to a third party without the consent of the data subjects; or

(e) the processing relates to data which are manifestly made public by the data subject or is necessary for the establishment, exercise or defence of legal claims.

3. Paragraph 1 shall not apply where processing of the data is required for the purposes of preventive medicine, medical diagnosis, the provision of care or treatment or the management of health-care services, and where those data are processed by a health professional subject under national law or rules established by national competent bodies to the obligation of professional secrecy or by another person also subject to an equivalent obligation of secrecy.
4. Subject to the provision of suitable safeguards, Member States may, for reasons of substantial public interest, lay down exemptions in addition to those laid down in paragraph 2 either by national law or by decision of the supervisory authority.
5. Processing of data relating to offences, criminal convictions or security measures may be carried out only under the control of official authority, or if suitable specific safeguards are provided under national law, subject to derogations which may be granted by the Member State under national provisions providing suitable specific safeguards. However, a complete register of criminal convictions may be kept only under the control of official authority. Member States may provide that data relating to administrative sanctions or judgements in civil cases shall also be processed under the control of official authority.
6. Derogations from paragraph 1 provided for in paragraphs 4 and 5 shall be notified to the Commission.
7. Member States shall determine the conditions under which a national identification number or any other identifier of general application may be processed.

For purposes of classifying risks and violations, it is interesting to distinguish those that arise as a consequence of a database.

## Primary generation of databases

Non-computerized archives are slow-moving and permanent, and errors in the data they contain can be recognized and corrected. Information processing systems – computerized databases – are swift, interconnected and impermanent, which means that errors cannot readily be corrected, a situation made all the worse by the speed with which they are disseminated and duplicated.

The generation of databases brings great benefits but also poses risks. To avoid these risks, a number of countries have established defence systems or protection models: (i) the judicial system (e.g. in the United States) which repairs damages after the fact – in these systems the role of surveillance bodies is merely supplementary; (ii) the administrative approach, in which the jurisdictional functions are given to government, is much used in Europe (Spain, Sweden, Germany), where specialized and independent bodies have been established with powers of sanction; and (iii) a mixed approach that seeks to strike a balance between the administrative and the judicial models. Here, control and protection mechanisms can be both preventive and repressive.

We must distinguish public records from private records. Public databases are those kept by government agencies and are normally reserved or secret. Examples of laws that govern such databases are Argentina's Law 11,801 on the Registry of Real Property; Law 22,617 on the Registry of Recidivism and Criminal Statistics; and Law 17,622 on INDEC (National Statistics and Census Institute), which refers to secret information collected for statistical purposes.

This raises the question: Who are the persons who are bound to fulfil the requirements imposed by law, and against whom the protective mechanisms (preventive or penalizing, i.e. establishing liability for damages) are applied? Brazilian and Guatemalan regulations restrict such application to public databanks or registries, while Colombia, Argentina, Peru and Ecuador extend it to private databases.

When it comes to defining and administering an information system, the fundamental principle is that of the end or purpose. Any information system has a purpose, and it must be designed to achieve that purpose and not to be used for any other. That purpose must be explicit. For example, the 1980 Liquor Licenses Act of Trinidad and Tobago reads: "For the purposes of this Act, every holder of a hotel spirit license or special hotel license under this Act shall keep a register in which . . ." There must be time limits (5, 7, 10 years) set for keeping the information in the database for that purpose.

The rights protected by these regulations, which are sometimes mentioned by the law and in other cases are deduced by judicial interpretation, are very broad. In some countries they apply to all personal rights: the right to life, intimacy, privacy, name, dignity, honour, integrity, freedom of conscience, virtual personality, personal data, informational self-determination. The Council of the European Union speaks of "protection of freedoms and. . . of the right to intimacy as regards the processing of personal data". This is also

known as the "right of domain over personal data" and is beginning to be considered as an autonomous and very personal right. In Argentina, several rulings and doctrines, regarded as innovative, consider this right to derive from human dignity, mentioning that it goes beyond intimacy or image alone to embrace honour and identity. "It derives from a technological and social phenomenon".[47] It may be called "a highly personal right to personal data", "a right to informational self-determination", "to information processing freedom", "a highly personal right of domain over personal data".

## Administration of justice

The point of departure is that the administration of justice must be transparent. Indeed, the publication of proceedings and decisions is one of the pillars of the system, and the knowledge of precedents ensures respect for the principle of equality before the law (Cadoux 1994). In this sense, the information that originates or is processed judicially or administratively may differ in identity and value. Nevertheless, the information that is normally included in information systems can be distinguished as to procedural or jurisprudential.

Systems for monitoring legal cases are strictly necessary for the efficient administration of justice. The books of registry of the courts have gradually been replaced by computerized systems that are increasingly centralized. These systems not only record great quantities of personal data but also make it possible to relate individuals acts, conflicts of interest or crimes. There is also a growing tendency to create electronic files that can record virtually all the information relating to the case (including victims, witnesses, attorneys and experts). This is clearly a way to ensure the universally desired prompt and efficient administration of justice. All computerized court records (except judgements) should be considered confidential, and their purpose must be restricted to the administration of justice. Justice systems must therefore provide a secure guarantee that the data will not be manipulated or deleted. The visual inspection of files and hardcopy documents must not be restricted, except as the law may provide.

Court records have been used for certain purposes that may constitute violations:

- Companies that sell information on credit histories may obtain and use records from commercial rulings.
- Job recruiters may petitition the labour courts to reveal whether a candidate for employment has brought labour claims.
- Petitions of a similar nature may be filed to the civil courts, for example to verify whether a potential tenant has a record of past evictions.

In all these cases, the intent is to predict future conduct, on the assumption that a person who was party to a dispute or who exercised his rights in the

past is likely to do so in the future (Cappelletti and Garth 1988). While judicial information is public, information systems created for the purpose of facilitating the administration of justice should not be used to serve the interests of third parties unrelated to the case in question.

The situation with judicial rulings and access to case law is different. Public knowledge of precedents guarantees the principle of equality for all citizens before the law. For this reason, and except where the law determines otherwise, judicial decisions must be public and all possible measures must be taken to make them accessible (Rotunda 1995).

This issue poses some difficulties. Court rulings contain a great deal of personal information and reveal facts that fall within the private sphere. The aim of guaranteeing equality before the law does not require that data be accessible through a search engine, but it is desirable that decisions be exposed to public scrutiny – for example in the press – and that they be appraised or criticized. Many law reviews and web sites quoting judgements have begun to take precautions. Certain personal data will be selectively removed (generally the names of the parties to the dispute and those of the witnesses, attorneys and perhaps the judge), the assumption being that what is important is to reveal the rationale and the essentials of the decision and not to identify the parties to the dispute. In the end, once a ruling is identified by its juridical content (i.e. of fact or of law), the personal data can nearly always be accessed by applying to the court and requesting the record of proceedings. The kind of search that should be avoided is one that seeks to identify court cases in which a specific individual is involved.

The tendency to suppress personal data reflects a balance between the rights of intimacy and privacy and those of equality before the law: in some cases, personal names are replaced by initials, and in other cases portions of the ruling are suppressed if they are not part of the fundamental decision (e.g. the fees paid for attorneys and experts). Nevertheless, the fact of suppressing personal data carries a significant additional cost. Online reviews and case law providers are divided on this point. Some eliminate names only in certain cases, others in all cases (e.g. ***Aranzadi*** in Spain). There are also providers who eliminate only those names that the law specifically prohibits and who allow the use of names in search engines (e.g. the Court of Justice of the Federal District and Territories in Brazil, the Costa Rican Juridical Information System, and in the United States the publishers Lexis and West Law). On March 8, 2001, a motion was brought before the Court of Appeals of Santiago relating to the search function of a recently inaugurated web site <http://www.poderjudicial.cl>, where upon introducing her name in the search system (for checking the status of pending cases) the person found that it produced data on a paternity suit she had brought with respect to her daughter.[48]

## Health information

In the health field, the creation of databases or information systems containing medical prescriptions or facilitating access to personal clinical data could be considered a risk. Access to such information has sparked controversy, particularly because it may be based on discriminatory notions or attitudes. Justice W. Brennan of the US Supreme Court, in an opinion in the case of ***Whalen v. Roe***, 429 US 589,607 (1977), where the plaintiff challenged the constitutionality of a New York State law requiring the compulsory registration of all medical prescriptions in a centralized database, wrote: "The central storage and easy accessibility of computerized data vastly increase the potential for abuse of the information, and I am not prepared to say that future developments will not demonstrate the necessity of some curb on such technology." The situation has not changed much. The recent Health Security Act in the United States recognizes the need for strict rules to administer information without harming privacy. It sets forth the following principles: (i) defined and limited circumstances under which consultation of medical records is authorized; (ii) "minimum necessary disclosure" of medical records; (iii) the "right to know" who has information on a person; and (iv) the "right of access" to that information, and to be notified of any corrections or modifications (Shapiro and Annas 1994).

It has also been noted that marketing firms will purchase used medical prescription forms from pharmacies and enter them in databases for use in statistical analysis of drug use trends. While the names of patients are not recorded, the names of their physicians are, and the list showing their preferences will be used for calls by drug salesmen. The clients for this service are large pharmaceutical laboratories.

Databases of clinical histories, blood donors[49] and vaccinations have become commonplace in recent years, although the information is sensitive and should be protected. Many hospitals have also begun to post clinical histories on the Internet.

A person's condition as a carrier of HIV, the AIDS virus, may require special privacy protection. In Argentina, the AIDS Prevention Act (Law 23,798 of 1990) provides that "in no case may individuals be identifiable through forms, records or stored data, which must to this end be kept in codified form", and "the system used must be limited to the initials of the person's name and surname, and the day and year of birth". For example, when judicial records make mention of an HIV carrier, that person's name is replaced by a number, and this is true for paper records as well. By reason of this law, the legal review ***El Derecho*** publishes judicial cases without revealing even the HIV carrier's initials, using instead the letters N.N. The Supreme Court of Venezuela has defined its position on AIDS and privacy in ***N.A. and Others***".[50]

In ***N.N. v. the State***,[51] moral damages for discrimination were awarded a public employee suffering from AIDS, even though the results of the test were not disclosed, because the state, his employer, had failed to fulfil its

duty of maintaining confidentiality. The amount of damages was set at US$14,000, certainly the highest such award that we found during our research on Latin America.

Chile has presented a case that was difficult to remedy legally. Vivo Positivo is a self-help organization for HIV carriers. The list of its members fell into the hands of a funeral parlour, which sent out letters to every member inviting them to use its services. To prove that the law had been violated, the plaintiffs would have to show that the firm sent letters of this kind to HIV carriers more frequently than to other persons. Statistical evidence of this kind is non-existent in Latin American courts.

In the insurance field, health information can be used to assess the risk of contracting diseases or for predicting life expectancy. For this reason, such information could be used by insurance companies to refuse coverage for life insurance, medical assistance or retirement benefits.[52]

Genetic databases are sure to pose a problem for the future (Annas 1999; Roche 1996). Trinidad and Tobago passed the DNA Identification Act in 2000 for creating a personal genetic database, compulsory for persons who have been convicted by a court of appeals[53] and for those agreeing to register.

## Information related to children

There is a strong tradition in Latin American legislation to protect the names and images of children and adolescents from publication in the press, especially if they are victims or perpetrators of crime.[54] Yet some countries have deemed it advantageous to equip their child protection agencies with information systems to store personal data on health, violations or situations of risk for children in their care. The rationale for such records is that they allow for individual monitoring, which is certainly of benefit to the children, and can be used for statistical studies and research for planning and designing policies.[55] Nevertheless, the systems have failed to strike a proper balance between such objectives and the need for protection of personal data (Gregorio 1999). Nor has sufficient attention been given to the security of those systems, and there are no clear criminal penalties for persons who violate data security and confidentiality.[56]

In *S., V. v. M., D.A.*,[57] the court ruled that, when there is a conflict between a child's right to intimacy and the right to freedom of expression, judicial protection of the child's higher interest must be strictly limited to what is indispensable, so as to avoid unjust restriction on freedom of the press, since that freedom, which allows the publication of news of concern to the community as a social and cultural body, requires that restrictions, sanctions and limitations be imposed only by law and in accordance with a restrictive interpretation.

Adoption procedures are generally secret and in some countries documents relating to biological parentage are destroyed, yet the Internet has sites devoted to tracing biological links.[58]

School records also present the possibility for discrimination. In the United

States, disciplinary measures for violating school rules are considered a part of school records and are protected by the Family Educational Right to Privacy Act.[59]

There are generally few disputes over violations of children's privacy by their parents, yet the state telephone company in Uruguay (ANTEL) published an advertisement in which it highlighted, as one use of the caller identification feature, the possibility of "controlling the friendships of an adolescent child". Several countries, including France, have legislation establishing an age beyond which children have a degree of privacy from parental supervision. The Venezuelan Child and Adolescent Protection Act establishes rules on the confidentiality of correspondence. In the United States, there are web sites offering the possibility of detecting drug consumption on the basis of a hair sample, which is generally taken by the parents without the adolescent's consent.[60]

Other databases compile information on adults that is related to children. In the United States, there are national databases with personal data on "deadbeat dads", fathers who have shirked their child support obligations. These databases interact with banking institutions to restrict such persons' transactions. This practice has been sharply criticized (Schwartz 1992). In Argentina, legislation is under consideration to create a National Registry of Alimony Debtors, something that already exists in some provinces.[61] In the United States, several states have databases on suspected child molesters.[62]

## Other state records

The civil registries, perhaps the oldest form of public records, were generally based on "indexes" that were annexed to each registry book (typically covering one calendar year). This system offered an efficient search mechanism, but it was limited in the sense that the user had to know the year and the place of the event (e.g. a birth, marriage, death). The conversion of the civil registries into computerized, centralized databases would allow for searches into parentage, homonyms and other areas that could violate or threaten privacy.

Voters' lists contain personal data, including some that are extremely sensitive, such as affiliation with a political party (as in Argentina). We also found that some countries (e.g. the Dominican Republic and Venezuela) have created web sites that can display personal information for a specific identification card number.

Criminal records hold data on confirmed judgements and are governed by specific rules in most countries, where they are administered by the state and treated as confidential. Nevertheless, this information is highly sensitive and there is a risk that these records could be replaced by police records of arrests. In El Salvador, juvenile delinquency legislation prohibits the police from keeping records of this kind on children and adolescents.

People's international movements are increasingly being recorded. The old paper forms are being replaced by new optical recognition devices and passports and other personal identification can now be read automatically.

Border-crossing records contain sensitive personal data and information on private life. The "purpose" of maintaining these databases is not clear.

In Ecuador, the National Narcotics and Psychotropic Substances Control Council (CONSEP) keeps a database of crimes under the Narcotics and Psychotropic Substances Act.[63]

A decision of the Venezuelan Supreme Court in the case of ***R.C.M. y otros v. Consejo Nacional Electoral*** (2000) is highly significant, as it establishes a limit on the concept of transparency in state information and on the concept of habeas data: "What the plaintiffs are seeking is not access to administrative files and records, but the provision of computerized electoral information complete with the results obtained at each and every polling station, broken down station by station." This decision means that transparency and the right to information do not imply the right to access or search computerized state records, since the purpose for which they were developed relates solely to state functions. Thus, there is no right to obtain copies of public records. The 1999 Freedom of Information Act of Trinidad and Tobago and the US Freedom of Information Act of 1996 give citizens the right (with some exceptions) to access official documents. Section 30 of the Trinidad and Tobago law excludes documents that could affect personal privacy, as well as other documents for ***raisons d'état***. In ***Bruno F. Villaseñor***;[64] the court ruled that the right to information enshrined in the last part of Article 6 of the Federal Constitution is not absolute but is limited by national interests and those of society, as well as by the rights of other parties (e.g. to privacy).

### Records on persons with disabilities and their families

Some countries (e.g. Chile, Ecuador, Mexico, Uruguay) maintain records on persons with some form of disability. In some cases these are official and in others they are kept by self-help associations (e.g. the Down's Association of Uruguay). Inclusion in these registries implies eligibility for certain social benefits or subsidies. Yet such databases can also be used for purposes of discrimination, or to restrict eligibility for life insurance or private pension systems (as in El Salvador).

### Personal identification systems

Personal identification (ID) systems are now able to store great quantities of information that far exceed what is needed for identification purposes, and the owner of the ID document may not even be aware that such information exists. In Venezuela, the government is about to introduce a new system of ID documents. While the details have not yet been announced, the government's call for tenders included provisions for an enormous database of fingerprints and a remote-readable chip to be inserted in the ID documents. A document of this kind will be issued to newborns in Malaysia, with a memory chip that includes an ID number, name, name of parents and citizenship status.[65]

Information that is illegible to the document's owner is found in the form of bar codes on the ID documents of Costa Rica and the Dominican Republic. In the Philippines, the so-called social security ID card has not only a bar code that includes fingerprints but also a magnetic device that allows the owner's social security contributions to be read in "information kiosks" and that in future will allow transactions at automated teller machines.[66]

### Credit risk information systems

The lack of clear legislation to regulate this activity no doubt translates into violations of the rights to privacy and intimacy. The ideal rule would be to require credit bureaus to verify every piece of data entered in their records, but this information is normally received informally from their clients, with no substantiating documentation. On this point, it is interesting to analyze the case of ***Hoffman Fuenzalida, Luis v. Boletín de Informaciones Comerciales***, which raises a very important point.[67] By releasing the credit bureau from any form of civil liability for erroneous information, and transferring that liability to the institution that provided the data, the court was in effect removing all incentive for the bureau to concern itself with the quality of information. It would certainly seem contradictory that the Supreme Court of Costa Rica, in ***Félix Przedborski v. Mauricio Herrera y La Nación*** (2001), should insist that the truthfulness of a source in Belgium be verified and that links to a site in that country be eliminated (thereby limiting freedom of expression) and yet it should not be a requirement for a credit bureau to verify the truthfulness of information, in light of the rights to privacy and intimacy. This situation should surely be rectified.

Another situation of risk arises in the lack of effective control over the information contained in credit bureaus' databases. We noted that several of these databases not only contained credit information but also other kinds of data that were not necessarily obtained in a legitimate way (criminal records, labour judgements, traffic violations, consumption profiles, etc.), and we also found cases of personal vendettas involving the entry of false information in the victim's database (del Villar, Díaz de León and Gil Hubert 2000; Miller, 2000).

### Workplace monitoring

In the workplace, the employer can monitor his employees' telephone conversations with clients for reasons of quality control. In some cases, there must be a recorded message or special tone indicating that the conversation is being recorded or monitored. In the United States, the Electronic Communications Privacy Act, 18 US Code 2510 et seq. (the federal law that regulates interstate communications), allows for the unannounced monitoring of calls. Internal calls between employees can also be monitored. The employer can have access to the record of telephone calls made from a specific extension. Magnetic disks, e-mail and voicemail can be monitored, and video

cameras can be stationed at selected places.[68] Privacy in the workplace is thereby substantially reduced, with the justification that all this monitoring will enhance productivity, prevent theft, avoid civil liability for employees' acts and prevent industrial or commercial espionage. One of the few exceptions is to be found in the Employee Polygraph Protection Act of 1988, which prohibits lie detector tests.

It is difficult to draw a clear line between the private information of the employee and that of the employer, but in extreme cases these practices may amount to violations of intimacy and privacy. To prevent such conflicts, some employers have established their own internal rules.

There is also debate as to whether an employer can require an employee to submit to medical tests (e.g. for HIV) or psychological examinations. In many cases, the employer insists that these are justified on grounds of security.

Nevertheless, the Supreme Court of the Dominican Republic, in ***Agromán Empresa Constructora SA v. BP***,[69] held that there can be facts of a personal nature that relate exclusively to an employee's private life and not to his work.

## Database by-products

### Telephone services

Telephone companies keep a list of calls received and calls made for individual telephones. These data can be processed and can provide information on a person's private life. While there is no record of violations or complaints relating to these databases, they have been used pursuant to a court order in criminal investigations (as in the investigation of the murder of José Luis Cabezas in Argentina).

Caller identification systems do not represent a direct invasion of privacy. Nevertheless, if the owner of the telephone uses that system to identify calls received by other people (e.g. in hotels or by parents with respect to their children), this could possibly be considered a violation. As well, we noted that some companies that receive service requests by telephone use the caller identification system to generate databases on their clients. For example, radio taxi firms keep historical files on the date, time and destination of trips.

In some countries (e.g. Jamaica and Uruguay) the debt status (service billings) of a telephone company's customer can be obtained simply by knowing his telephone number. In Jamaica there is an automated service for this purpose, available by dialling 1-919-1919 (Roxborough 1999); and in Uruguay the owner of a telephone line can be identified at public terminals in the telephone company's offices.

As a result of the Communications Assistance for Law Enforcement Act, telephone companies in the United States will have to equip their mobile phones with geographic positioning systems accurate to within 50 metres, for intelligence purposes (by the Federal Bureau of Investigation or FBI) and

for tracking emergency (911) calls. Even without such devices, it is possible to locate a cellular phone to a fair degree of accuracy in densely populated areas, by identifying the nearest antenna: in large cities antennas are placed at distances of a few tens or hundreds of metres.

### Credit cards

Companies that issue credit cards have databases that can not only reveal a person's purchasing profile but also locate him in time and space. Some of them use this information in real time to prevent fraud. We have not detected any violations with respect to these databases, presumably because those companies maintain adequate security and confidentiality. In terms of legislation, we may cite the Credit Cards Act of Argentina (Law 25,065 of 1998), which prohibits the provision of information to credit bureaus.[70]

### Consumer profiles

Many businesses regularly request personal data for compiling a "customer profile". Such information can even be requested for cash sales. These databases are shared and combined with those generated by other businesses, and they can result in invasions of privacy, such as new-product offers by mail, telephone, e-mail, etc.

There is now widespread use of lotteries and competitions for which entrants must complete a coupon with personal data. Those data are stored and processed and can be used or sold to telephone marketers.

## Risks not related to databases

### Communications

Telephone eavesdropping in many countries constitutes a violation of the rights to intimacy and privacy. There is an important distinction to be made here, depending on whether the wiretap is ordered by a judge or is conducted by the police or other security forces, or is requested by private individuals.

Legislation dealing with such violations has been adopted in Ecuador (Special Telecommunications Act, Law 184 of 1992, Article 14); in Venezuela (Telecommunications Act, 2000, Article 190); and in the Dominican Republic, where Supreme Court Resolution 80 of 2001 instructs judges, in cases relating to Resolution 36-00 of the Dominican Telecommunications Institute (INDOTEL), to "consider as illegal telephone interception any direct or indirect interference, interception, intervention, reception, ordering, permission, espionage, listening and provision of means, for one's own account or that of another, without prior warrant of a court". In Mexico the Supreme Court ruled, in the case of ***Fernando Koram Valle y otro, amparo directo,***[71] that "if the telephone interception was not preceded by a court order, it is an unconstitutional act

and it and the fruits thereof are automatically null and void". In Jamaica[72] the legality of a police wiretap in the course of investigating a crime is considered to be regulated by the precedent of ***Malone v. Commissioner for the Metropolitan Police*** (No. 2).[73]

Decisional law also tends to reject evidence (from telephone wiretaps) that has been obtained illegally. In the Argentine case ***In re Sergio F. Lazica,***[74] the court ruled that the transcription of a telephone conversation had no validity or effectiveness because it was spurious evidence obtained surreptitiously and therefore represented a direct violation of the guarantee of privacy enshrined in Articles 18 and 19 of the Argentine Constitution.

When it comes to intercepting communications by persons deprived of their liberty, the situation may differ: in Brazil it is considered illegitimate and a violation of the right of defence, while in Chile it is considered legal to place microphones in prison cells for security purposes.

## Internet

In the context of the Internet, there are certain techniques and practices that violate privacy, even though in principle they may appear inoffensive (Vibes 2000). "Spam" consists in sending e-mail messages to a long list of persons, generally for advertising purposes, but can also involve circulating chain letters, petitions, etc. Some e-mail providers have introduced spam filters, although this could itself be seen as a further intrusion.

"Cookies" consist of pieces of information that a web server can store on the user's computer in order to record "favourites", for example. The user is generally unaware of the presence of these cookies and of the fact that his visits to a certain site or, thanks to browser errors, his Internet activity as a whole may be tracked.

There are no clear or universal rules on the allocation of domain names, and so we find cases of "cyber squatters" who make a practice of registering the names of celebrities or companies as domain names, for the purpose of selling them or discrediting the person or company. In some countries, the courts deal with these situations on a case-by-case basis, while in others (e.g. Uruguay) the company that allocates domain names reserves the right to withdraw them if it considers that they are being abused in this way.

The web sites of some government agencies allow access to personal information by simply entering an identification number. Examples are the sites of the Central Bank of Argentina <http://www.bcra.gov.ar/sesfaaaa.htm>, the Internal Revenue Service of Ecuador <http://www.sri.gov.ec/html/ruc_consulta.html>, the National Elections Council of Venezuela <http://www.cne.ve/donde.asp>, and the Central Elections Board of the Dominican Republic <http://www.jce.do/consultas/index.asp>.

## Other forms of invasion of privacy

In many countries we found that the information contained on automobile licence plates bore no strict relation to the purpose for which they were created. For example, including the owner's place of residence is excessive information and reveals a personal fact that could generate an additional risk (e.g. becoming the target of a robbery). This is a problem in Brazil, Mexico and Uruguay.

There are also other violations that show that the concept of intimacy and privacy has broader implications. In ***Szwec, Andrés v. Carrefour Argentina SA,***[75] the court ruled that Carrefour had violated the privacy of the plaintiff because an error on its billing and receipt documents, which reproduced his telephone number, caused him to be disturbed at home by calls from people trying to reach the supermarket. He was awarded damages of US$3,500. In ***João Rodrigues v. Viernes Entretenimiento CA,***[76] the court declared that "an environment with significant noise levels is prejudicial to health and disruptive of intimacy". In ***Julia Vanessa Castro Sánchez v. Tercera Comisaria y otros,***[77] the court said that "the fact of photographing a person passing along the public way, even without that person's consent, does not constitute a crime; although the court considers that, pursuant to Articles 29 and 30 of the Civil Code and Article 24 of the Constitution, it would be a violation of that person's constitutional rights to personality and privacy if the photographs were published, reproduced, exhibited or sold without that person's consent, except in the cases listed therein relating to public notoriety or the needs of justice or the police". In ***Rischmani Grinblatt, Francisca v. Consorcio Periodistico de Chile SA,***[78] the court found that "the fact of attending a public place does not imply consent for the release of a photograph taken in that place".

## Devices and technologies that invade privacy

Current technology, supported in large part by the constant increase in computer power and information storage capacity, is giving rise to extremely powerful surveillance devices and procedures. The following are some of the best known.

The FBI admitted that it was using a product called Carnivore,[79] developed for the purpose of "bugging" e-mail traffic within the United States (incoming and outgoing), which automatically selects messages that appear suspicious.

Global positioning systems (GPS, GLONASS) allow the position of an object or a person to be located within a few metres anywhere on the planet.[80] This makes it possible not only to conduct accurate land surveys but also to determine the exact position of an escaped prisoner or a lost child. Bracelets are now in use that integrate GPS with cellular phone networks or radio

receivers for relaying positions. Thus, it is possible to track a fugitive or to confirm whether a house arrest or a restriction order is being observed. The company Digital Angel <http://www.digitalangel.net> developed technology for implanting a device of this kind in the human body: body heat generates the needed electricity, and the device allows the wearer's pulse and temperature to be monitored. Although the company presented it as an excellent way of supervising children and the elderly, its market studies showed that the public is still leery of this kind of implant, and so the company decided to postpone its launch until the market is more receptive. Meanwhile, it is working to develop externally-carried versions of the device.

For the March 12, 2001, elections in Uganda, the government decided to use face recognition technology to combat electoral fraud. The task was undertaken by the US company Viisage Technology Inc. <http://www.viisage.com>, which was awarded a contract by the Ugandan government to record the faces of approximately 10 million persons eligible to vote in the country. Recording the faces involved converting photographs into 128 vectors representing facial characteristics, including nose profile, lip thickness and the distance between the eyes. This task was conducted during the voting process.

The US government will pay US$500 million[81] to the digital telephone industry to introduce "back doors" to facilitate intelligence work. This and other initiatives, such as adding tracking functions to cellcular phones, are being undertaken in accordance with a law approved by the US Congress in 1994, known as the Communications Assistance for Law Enforcement Act .[82]

The Dutch government recently carried out an investigation for the European Parliament to confirm the existence of Echelon. This is a massive espionage organization run by the United States, Great Britain and other Commonwealth countries that can overhear and filter communications of all kinds (voice, data, etc.) by intercepting microwave and satellite transmissions, using powerful information extraction tools and a vast network of satellites and antennas, at least in the United Kingdom and the United States. The European Parliament formed a special committee to study this case, on the basis of numerous complaints and demonstrations of its existence. Apparently this organization has been used to conduct industrial espionage against countries of the European Union.[83]

In a study published in April 2000,[84] the American Management Association found that the proportion of US companies engaged in some kind of active surveillance over their employees rose from 45 percent in 1998 to 74 percent in 1999. E-mail monitoring rose from 27 percent to 30 percent over the same period.

The International Data Corp. (IDC) estimates that, worldwide, corporations spend some US$62 million on Internet monitoring and filtering software. One study by IDC predicts that such spending will reach US$561 million by 2005.

## Reordering ideas

The evolution of rights (legislation) has often gone hand-in-hand with technological development. Automobiles have become steadily more powerful and more widely used since they were first introduced. And since their invention (and that of the railway), there has been conflict between the benefits they offer and the consequences or risks that they present. Although the rights to life and personal integrity were sufficiently established before the invention of the automobile, accidents began to increase significantly.

It is important to note that, despite the severe criticism and the apocalyptic forecasts that were made about the risks inherent in the automobile, the first changes in legislation were to adjust and expand the scope of legislation on damages. The intent was to provide financial compensation for violations of the rights to life and to personal integrity. While legal rules governing automobile traffic were being developed, such policies alone were incapable of reducing the number of accidents and of deaths and injuries. In fact, legislation introducing vehicle safety and performance standards probably had more to do with this. And yet, more than any laws and traffic regulations, it was liability lawsuits against manufacturers (e.g. the Ford Pinto case) that finally forced them to come up with safer automobile designs.[85]

This analogy shows once again the tardiness or failure of legislation in creating effective protection for rights and its inability to control or hold back technological developments. We may say that safety improvements were due more to technological solutions (safer designs) than to any laws or regulations protecting rights. Swiftly changing liability legislation and the ability of the courts to deal with new situations were strong incentives for regulating the automotive market.

There may be a certain analogy with the protection of privacy and intimacy rights. But in this case, is it sufficient to leave it to civil liability to provide the incentives that will bring order to the new ICTs? We must remember that the automotive industry developed first in countries that had very strong civil liability systems. Today, information systems are making the fastest progress in developing countries, where there are virtually no established systems of civil liability nor any tradition of suing for damages and, in those cases that reach the courts, the amounts of compensation are insignificant compared to the profits to be made from marketing personal data. We need only mention that in Latin America punitive damages do not exist – or they are not provided for in existing legislation – while in the United States awards for such damages amount to billions of dollars (Alterini and Filippini 1986).

### Rethinking personal data

In analyzing the purpose of an information system and evaluating the risks of invasion of intimacy and privacy, we need to identify some data categories.

### *Statistical data*

Information that is used only to compile statistics and to conduct research or monitoring, does not have to reveal the names of the parties involved (except perhaps for the government or parties on which multiple files are kept). The most important consequence is that the information that is included for these purposes alone can be protected by "statistical secrecy". The rules governing statistical information usually impose certain obligations on individuals and legal persons to provide data. As a counterpart, they are guaranteed a degree of confidentiality, meaning that no individual's data will be disclosed or published that could be used to identify that individual. Publication of the data will be limited to conventional statistical techniques.

### *Reference data*

Reference information contained in the system makes it possible to access or process documentary and personal identification for management purposes.

### *Documentary data*

Information of documentary value is used to support sound decision-making. If the parties, for example, can obtain information on a court decision or a notification by consulting the information system, that information must have documentary value. For all data classified as documentary, there must be an assurance that the information cannot be modified, or that any change to the data will leave a trail identifying who modified it and when.

### *Registration data*

The most important characteristic of this information is its legal effects and its completeness: in a registration system, the absence of information has documentary value. The principles governing registration and the management of registries are: (i) rogation: the registry does not act of its own accord but at the request of the interested party, through intervention by the administrative authorities or pursuant to a court order; (ii) any document registered can be contested; (iii) there is a presumption of truth in registered information; (iv) the registry must examine documents diligently and ensure that those registered meet the applicable legal standards.

Little has been said about the role that information plays in decision-making. On this point, we may cite France's Law on Data Processing, Data Files and Individual Liberties.[86]

> LAW 78-17 OF JANUARY 6, 1978, ON DATA PROCESSING, DATA FILES AND INDIVIDUAL LIBERTIES
>
> Article 1: Data processing must be at the service of each citizen. Its development must be pursued within the realm of international cooperation. It must not infringe either on human identity, or on human rights, or on private life, or on freedom whether individual or public.

> Article 2: No judicial decision involving an appreciation of human behaviour may be based on automatically processed information purporting to define the profile or the personality of the interested party. No administrative or private decision involving an appreciation of human behaviour may be based solely on automatically processed information purporting to define the profile or the personality of the interested party.

## Government policies

Historically, the law has created mechanisms not to limit technological developments but to regulate them, to establish a system of incentives, and to create criminal and civil liabilities. This was the case with the automobile, which gave rise to acceptance of the inherent social risk and the payment of personal damages. Disputes of this kind are rarely resolved by legislation. In most cases, the result is a set of rules based on precedents.

Nevertheless, there is a need for a coherent set of public policies to govern the generation of information systems and the protection of personal data. General legislation should establish that the creation of any information system for storing personal data must be preceded by a needs analysis, a risk analysis and an explicit statement of purpose. The personal information stored must be the minimum necessary to that purpose.

There is also a requirement for public policies to control the processing of personal data, in both the public and private spheres. The control authority function may be exercised by a specific official or body (e.g. Spain's Data Protection Agency), or it may be assigned to the public defender or ombudsman.[87]

Explicit public policies must be defined relating to the need for information systems containing personal data and to their storage, transfer and accessibility. These policies must be dynamic and must be based on an analysis of new developments and new violations. The objective of these policies should be to overcome the incapacity of general legislation to resolve unforeseen situations.

The supervisory body must investigate complaints and violations, and it must verify that information systems have an explicit purpose, that the information collected is the minimum required to meet that purpose, that the systems respect security standards proportionate to the risks involved, and that in the case of private systems they are covered by civil liability insurance.

Services offered over the Internet must be carefully analyzed, and search mechanisms should be developed that make it possible to exclude personal data.

## Technological solutions

### Security in the Internet environment

The Internet's construction as an open communication system not only makes it interoperable but also renders it vulnerable to certain risks, including surreptitious intrusion, such as hacking, and human error. We may identify three kinds of inherent risks. Programming errors or "bugs" and problems caused by configuration errors on web servers that allow unauthorized remote users to steal documents and to obtain information on the computer providing the web server function so that the system can be penetrated. There are also risks in navigator or browser programs that may result in improper use of personal information provided with or without the knowledge of the user. Using traffic "eavesdropping" techniques, data sent between the browser and the server can be intercepted.

These weaknesses may be exploited innocently or deliberately. Recent incidents have included the penetration of the database of an electronic commerce company and the theft of thousands of credit card numbers (Ward 1997). A recent survey published in the United States indicates that there are five serious attacks every month on electronic commerce web sites.[88]

The US Department of Defense reported that 80 percent of its sites had been penetrated and that in 1996 alone there were 250,000 attempted intrusions into its computers.[89] Such vulnerability suggests that critical information should not be exposed over the World Wide Web. In other words, the kinds of information stored in equipment that is accessible over the Internet should be kept to a minimum, and critical data should be strictly segregated from the rest. This could include horizontal selection of information, such as removing a certain class of cases from a judgements database, or vertical selection, such as removing the names of the parties from all cases or from a certain class of cases.

### Some possible techniques for enforcing privacy on the Web[90]

#### *Labelling and licensing technologies*

Labelling technologies license the use of symbols called ***trustmarks*** to online merchants through an ongoing programme of certification and auditing. Auditing conducted by well-respected firms will ensure the integrity of the trustmarks and strengthen consumer confidence. By clicking on the trustmark symbol, the individual can read the web site's privacy statement. At a minimum, the site should reveal what type of information it collects, how the site uses that data, with whom the site shares that information, whether the individual can opt out of having the data used by that site or a third party, whether the data can be changed or updated by the individual, and whether one can delete or deactivate one's data from the web site database. One example of this type of firm is TRUSTe <http://www.truste.com>.

### *Blocking technologies*

A technology known as PICS, or the Platform for Internet Content Selection, developed by Massachusettts Institute of Technology's World Wide Web Consortium (W3C), will attach labels to describe any document on the Internet or any web site. In browsing the Web, an individual will not be able to enter those sites which he or she has set as being undesirable. In addition to labelling offensive material, the technology can also describe a web site's information practices, such as what personal information it collects and whether that information is reused or resold.[91]

### *Data exchange technologies*

An example of this type of approach is the project developed by W3C, called P3P, short for Platform for Privacy Preferences.[92] Once implemented, P3P would permit web sites to state their privacy practices, based on a specified set of statements about how they would use, transfer, disclose and allow access to personal data collected by them. The user would also create a set of privacy preferences. If the web site's practices and the user's preferences matched, there would be seamless access to that web site. However, if a match could not be achieved, the user could negotiate with the web site (though the possibility exists that a user could be denied entry if not enough personal data was volunteered to the site).

### *Anonymous profiling*

An alternative approach to collecting personal data over the Internet is anonymous profiling. While demographic information would still be released under this scheme, personally identifying data would not. In other words, the data would not be linked to a subject or associated with a particular name.

### *Encryption*

Although many of these technologies and applications are still in the developmental stage, what can be said with some assurance is that there is a growing consensus that digital signatures and encryption will form the basic tools for electronic transactions. Encryption is needed to ensure security, including authentication,[93] confidentiality, data integrity and non-repudiation.[94] Several forms of electronic encryption exist, with public key encryption being strongly favoured, often in conjunction with the use of single-key systems.

The most extensive use of this system is PGP, "Pretty Good Privacy" <http://www.pgp.com>. The system encrypts the message using a single key that is generated at random for each procedure and is in turn encrypted with a public–private key mechanism. In other words, the public key is used only to encrypt and the private key only to decrypt the message. In this way, the decryption key remains in the sole possession of the information addressee. This type of encryption uses keys with up to 2,056 characters that would take thousands of years of processing time to break, given the current state of the art.

### *Digital signatures*

Digital signatures are needed to authenticate the parties to an online transaction, just as handwritten signatures affixed to paper documents authenticate the identity of the individuals involved. Unlike handwritten signatures, however, digital signatures are transferable, and that transferability needs to be managed and contained to retain the system's reliability.

A digital signature resembles a pseudonym more closely than a real name because it is a secret piece of information that one possesses, which is then linked to an individual's name. This leads to two central risks associated with its use: (1) initial impersonation at the time of certification of the digital signature (the risk of false attestation); and (2) the "secret" information, namely the digital signature, being duplicated outside of the control of the bona fide individual (the risk of theft, misuse or loss).

The existence of these risks has sparked the development of new authentication technologies: biometric authentication (such as by fingerprints, voiceprints, retinal scans, iris scans, hand geometry, facial thermograms, etc.). Paradoxically, these techniques create a whole new world of possible violations of privacy.

### *Secure transmission*

These applications provide secure transfer of information between a browser and a server through the use of encryption. Two competing standards exist: Secure HTTP and Secure Sockets Layer (SSL). The drawback to these technologies is that they allow the web site to decrypt the transmitted information, opening the door to the possibility of fraudulent use.

### *Credit card transaction protocols*

Using public key cryptographic techniques and digital signatures, the Secure Electronic Transactions (SET) protocol, developed by Visa and MasterCard, mimics the current credit card processing system. Its advantage is that it does not permit the online merchant to read the credit card information. In any case, the entity issuing the card knows and certifies movements.

### *Electronic cash or virtual money*

Electronic money or e-cash is predicated on a different strategy in order to be used over an open network like the Internet. The strategy is to avoid sending personal data, as is the case with credit card information, but rather to send electronic cash or tokens, with the individual providing no identifiable personal data over the Internet. With one form of this technology developed by David Chaum (Chaum, et al. n.d.: 319–27), the individual remains completely anonymous.

There are various versions that embody this idea, but they fall essentially under two systems: (1) hardware-based stored-value cards or smart cards and (2) software-based stored-value or prepaid payment systems for executing payments over open networks. The former are hardware or card-based

systems that permit individuals to use plastic cards with a magnetic strip or a smart card embedded with a computer chip; the latter are software- or network-based systems that work with installed software through a personal computer connected to a network.

There are two basic ways to represent the value of the funds stored: balance-based, in which a single balance is stored and updated with each transaction, and note-based, in which electronic notes, each with a fixed value and serial number (comparable, for example, to a real banknote), are transferred from one device to another. These values are encrypted when transmitted in order to ensure confidentiality and data integrity. In one instance, a note-based technology developed by eCash Technologies Inc. <http://www.digicash.com> uses a "blind signature" where the process ensures that no identifying information may be traced back to the individual.

### *Security at computer centres and other physical elements*

Although great stress is placed on protecting communication between remote computers, most thefts of information in fact are done in "the old way", i.e. by directly accessing the equipment where the records are stored. This means that attention must be devoted to preventing intrusion, theft and tampering of the equipment, as well as to installations and activities such as those involved in computer centres, information transport, backup information, extractable storage devices (floppy disks, CD ROM, etc.), notebooks, printers and desks.

Royal Decree No. 994/1999[95] of the Spanish government offers sound criteria for the security of physical elements, classified by the level of security.

## Technology for controlling the use and handling of data

### *Distributed information systems*

A distributed information system consists of two or more distinct information subsystems that cooperate with each other. Each subsystem is capable of processing locally stored data. Data stored for remote access or for centralized maintenance purposes must be stored in accordance with a global conceptual scheme, on which a common database scheme is designed. According to Date 86, it is helpful to think of a distributed system as a partnership among a set of independent but cooperating centralized systems.[96]

Distributed systems contribute to the protection of privacy and offer the capacity to apply different levels of security to personal information on the same individual. In this way, for example, a database with demographic and identification data can be vertically partitioned and the two parts physically separated so that identity data are stored under extremely strict security conditions while demographic data, with a lower level of security, are available, for example, for research.

The main risk to individual privacy lies in the high degree of integration of information systems today. In other words, it is possible to monitor an individual's behaviour in different areas, thanks to the capacity to cross

information of all types: what the person is buying, to whom he calls or writes, whether or not he is in debt, whether he is ill, etc. It is the high degree of integration of all this information that provides real power. Dispersing it effectively will facilitate the erection of barriers that determine which subsystems can collaborate and what information can be crossed, for purposes of protecting privacy.

### *Authentication technologies*

A key principle, and one that must be observed for any security policy, is that of responsibility. In other words, it must be possible to identify who is responsible for each action conducted in digital space. This calls for correct identification, which in turn requires proper authentication. There are three conventional types of authentication: (i) something that the user knows (a password), (ii) something that the user has (a key, a smart card), and (iii) something that the user "is" or "does" (biometrics). Although it is simple and widely accepted, knowledge-based authentication is vulnerable to dictionary-based intrusion and "brute force" attack by trying all possible character combinations.

Biometrics narrows the line that separates identification methods from authentication methods. There are two main phases in biometric authentication. In the enrolment phase, a certain characteristic of the user is measured. This may be a physical characteristic such as his fingerprints, his hand geometry, the configuration of veins in his retina, the pattern of the iris, facial geometry or DNA, or it may be a behavioural characteristic such as his voice or the dynamics of signing his name. In any of these cases, current technology makes it possible to analyze and extract a numerical representation (e.g. in the form of vectors) of the characteristic. This can be so refined as to express the differences between any two faces. To authenticate the person, the characteristic must be measured again and the numerical result compared with that stored in the first phase. The person is then authenticated, depending on how close the newly calculated value is to the stored value.

While these authentication systems are highly advanced and accurate, it must be noted that biometric identifiers are not keys. For example, they cannot be hidden, changed or destroyed. The uniqueness of biometric identifiers, the fact that they cannot be transferred and cannot be lost or forgotten, gives them an advantage over knowledge-based systems. But, as noted earlier, they pose a new risk to privacy, so they must be handled and stored with great care and used only for purposes authorized by the individual involved.

### *Handling notifications*

After taking all security measures deemed necessary and applying authorization and authentication policies as appropriate to the classification of the information being handled, we must consider the possibility that these precautions will be evaded. It is very important, then, to minimize the time during which an intrusion goes undetected. To achieve this, records must be

kept of all activities involving the system conducted by any of the users who have a right to the information. These records, besides providing a means of tracking damage, can be inspected automatically so as to detect patterns that suggest a possible intrusion into the system, for example successive failed attempts at authentication. The system administrator or the security officer must then be notified, so that he can investigate what may be a serious situation. As well, the system must provide warning of especially delicate or suspicious transactions, such as copying, downloading or massive modifications of information.

## Conclusion

Whenever the protection of privacy and personal data is sacrificed, the rationale is based on resolving a conflict of interests: public safety, combating drugs, freedom of the press (Budano Roig 1998), where the balance is tipped against privacy and intimacy. It is clear that there are no general rules that can be established by the legislative route: the issue falls clearly in the terrain of the courts, which are asked to dispense justice in individual cases.

What we have at the moment is a number of disparate criteria applied within state organs with respect to the access that should be given to information collected in the course of their activities or contained in private databanks. It is certain, as well, that the volume of such information and the means of accessing it will continue to grow, as will the demand for information, whether for legitimate or other purposes. It is highly advisable, therefore, to consider legislation to cover the situations discussed here and to define general principles that would apply to the computerization process.

Such legislation must be compatible with and supplementary to laws that determine the scope of habeas data, which is still not regulated in some countries, since in principle nearly all information in the public sphere is publicly accessible. Guidelines are needed, however, to strengthen the position of the citizen, who currently finds himself defenceless in terms of the use that may be made of this information. Data collection should be subject to limits in the form of some standard rules that require demonstration of the need for the data and the purpose for which it is to be used, as well as the identification of those who are entitled to request such information.

The process of creating data processing systems should be transparent and accessible to all. Government agencies working with databases should maintain contact with independent institutions and non-governmental organizations that can provide expert advisory services and convey the opinion of specific sectors. Risk analysis should examine the effects and consequences that data processing systems can have on society.

Legislation should prevent stored information from generating or permitting any form of discrimination or prejudice, for example the compiling of data on religious beliefs, political opinions, sexual attitudes, ethnic origin, disabilities, etc. Time limits should be set on how long the data are to be

kept, and procedures for deleting them should be defined. Freedom of information does not imply or excuse the indiscriminate disclosure of data, nor does it mean converting the public administration into an information service. Legislation should establish those cases where information on an individual can be supplied to third persons.

There is a need for some policy decisions in this area, either to open state information to any user while allowing individuals to place reservations on their information or, on the contrary, to restrict access to those who can demonstrate a legitimate interest. Clear definitions in this area are needed for the proper development and efficiency of information systems, as well as for public information services and government registries and, in particular, for the statistical processing of data.

Search engines facilitate the task of obtaining information and for this reason they are recognized as very useful; yet they are the principal technological weapon that can be wielded against privacy rights. However difficult this may be to arrange, search engines should be designed to "jump over" personal data: this will mean segregating information that relates unequivocally to a given person within a computerized registry (either textual or structured).

Self-regulation has proven successful in similar areas, and therefore, we feel in light of the cases described and until there are explicit rules or policies in place that the design of information systems should seek to maintain the balance between, on one hand, publicity and transparency in state activities and the legitimacy of private activities that involve the accumulation of personal data, and on the other hand the protection of privacy and intimacy for individuals (and in particular for those in the most vulnerable groups).

Today, this balance is assured by recent trends in the protection of personal data:

- The principle of "end purpose"
- The principle of proportionality (the data must be adequate, relevant and not excessive)
- The requirement that data must be obtained and handled legally and legitimately
- Right of access to the information (the right to know, before it is processed, what personal information is involved and how it is to be processed, transmitted and transferred to other people)
- The right to know to whom one's personal data have been transferred
- The right to oppose the processing of one's data, on legitimate grounds
- The right of rectification of personal data
- Specific action to enforce habeas data
- Deletion of records when they have ceased to be necessary or relevant to their purpose
- Statistical secrecy
- Existence of an authority to supervise and protect personal data

- Strict control over organizations that market personal data
- Severe penalties for those who violate the rules and those who steal information

A number of different policies are needed to strike the desired balance. The growing tendency of the state, and frequently the legislature itself, to create databases and registries is the source of many of the violations that occur today. There should be a set of rules establishing requirements for their creation and conditions for their operation, including measures to ensure confidentiality and security. In the words of Leggiere (1998), many risks or violations are the result of "ignorance" about the power of these new technologies.[97] Nor should we forget that the protection of privacy is a protection against totalitarian systems.[98]

In the private sector, there is a need for laws to govern specific activities, such as credit bureaus, credit cards, banks, telephones, and clinical records. These laws must seek to balance economic interests against the rights of privacy and intimacy. Among their key elements are that: (i) the assignment of civil liability must be designed as an incentive to protect fundamental rights; (ii) there must be suitable watchdog agencies; and (iii) database managers should be required to adopt strict security measures. In regulating these activities, it is essential that the courts keep abreast of new technological developments and that they offer ready and effective access to habeas data.

The most difficult problem relates to the Internet, particularly when freedom of expression is involved, as in online newspapers. The Internet today is governed by the laws of the market,[99] and in fact it has subverted some of the conventional market disciplines. This makes it very difficult to enforce respect for human rights on the Internet. It will be important to analyze the evolution of the right to freedom of expression,[100] in particular the decision that the US Supreme Court is to render in the case of ***Free Speech Coalition v. Reno.***[101] While there may be a growing move to self-regulation on the Internet, the web sites that pose the greatest risk are those that manage to evade all regulation.

## Notes

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2. This process may be seen as a new and qualitative leap in the expansion of the human memory. For centuries, human beings have sought to extend and protect their memory. The earliest cave paintings, icons, oral transmission, printing and (to some extent) art and history – all were mechanisms of memory support. Man has created countless systems for keeping records, but his main problem has been to find mechanisms for searching those records. Thus,

indexes could be used to search paper records. But there are other procedures, as well: for example, in agrarian communities of Bolivia, when an agreement was reached on the boundaries of a farm, it was indicated with stone walls, but this symbolic delineation was not considered sufficient, and a powerful system of recording the event was added: small children were brought to the place and beaten with the boundary stakes – they would thus retain for many years a vivid memory of the place where the markers had been set. It is in fact the search mechanisms that signify the expansion of memory. Perhaps the most interesting innovation in the creation of search engines was that developed by Sigmund Freud. The psychoanalyst can be seen as a search engine, allowing an individual to dig deep into his own memory. It is search engines that are transforming the concept of memory and that have made individuals more vulnerable.

3. We also examined some situations in Canada, Spain, the United States, France and other countries of the Americas, including El Salvador and the Bahamas.
4. It was Justice Louis Brandeis who coined the expression "the right to be left alone", in ***Olmstead v. US***, 277 US 438.
5. 268 US 510 (1925).
6. 316 US 535 (1942).
7. 381 US 479 (1965).
8. 497 US 261 (1990).
9. 410 US 113 (1973).
10. 521 US 702 (1997).
11. See 62A American Jurisprudence 2nd Privacy 25. An exception in common law would be Section 30 of the Freedom of Information Act of 1999 of Trinidad and Tobago, which protects the privacy of dead persons.
12. 12 WIR 5 and 15 WIR 229.
13. ***Griswold v. Connecticut***, 381 US 479 (1965).
14. ***Luksic Craig, Andróico v. Editorial Planeta***, Supreme Court, June 15, 1993. "The author of the book 'Diplomatic Impunity' has committed an arbitrary and illegal act that has signified deprivation, disturbance and threat pursuant to Article 19 (4) of the Constitution, by revealing facts that belong to the private and intimate life of individuals. The appeal for protection was accepted and the book was banned from entry and distribution in Chile." On the issue of censorship, see Article 19 (12) and Article 1 of the Constitution.
15. ***Francisco Martorell v. Chile***, Case 11,230, Report No. 11/96, Inter-Am. C.H.R., OEA/Ser.L/V/II.95.Doc. 7 rev. p. 234 (1997). "The Government of Chile has pointed out that the rights to honour and dignity often conflict with freedom of expression, that the State must endeavour to balance these rights with the guarantees inherent in freedom of expression, and that a right may be sacrificed for the sake of what is considered to be a higher right."
16. See ***Diaz v. Oakland Tribune Inc.***, 188 Cal. Rptr. 762, 772-73 (Cal. Ct. App. 1983).
17. 420 US 469 (1975).
18. 491 US 524 (1989).

19. *Carlisle v. Fawcett Publication Inc.*, 20 Cal. Rptr. 405, 414 (Cal. Ct. App. 1962).
20. *O'Hilderbrandt v. Colombia Broad. Sys.*, 114 Cal. Rptr. 826, 830 (Cal. Ct. App., 1974).
21. *Cepeda v. Cowles Magazines and Broad.*, 393 F. 2d 417, 419 (9th Cir. 1968).
22. *Miller v. Bakersfield News-Bulletin*, 1919 Cal. Rptr. 92, 94 (Cal. Ct. App. 1975); *Yorty v. Chandler*, 91 Cal. Rptr. 709, 712 (Cal. Ct. App. 1970).
23. *Star Editorial v. United States District Court*, 7 F. 3d 856, 861 (9th Cir. 1993); *Montandon v. Triangle Publication*, 120 Cal. Rptr. 186, 191 (Cal. Ct. App. 1975).
24. As defined in *Carlisle*, note 19.
25. 459 P. 2d 912 (Cal. 1969).
26. In *Sidis v. F-R Publishing Corp.*, 113 F. 2d 806 (2d Cir. 1940), the plaintiff was a child prodigy who had gained notoriety by graduating from university at the age of 17. Twenty years later, a magazine published a story contrasting those early achievements with his current life. The court ruled that the article did not violate his privacy because he continued to be a public figure.
27. For example, a former Vice President of Argentina, Carlos Alvarez, has declared his assets on his web site <http://www.chachoalvarez.com>.
28. Ruling of March 2, 1993, of the Criminal Court of Appeals of Uruguay, 107 *La Justicia Uruguaya* No. 12,338.
29. Ruling of March 13, 1999, of the Criminal Court of Appeals of Uruguay, 107 *La Justicia Uruguaya* No. 13,724.
30. See also *Movimiento al Socialism MAS v. Governador del Estado Apure*, ruling No. 1155 of May 18, 1999, of the Supreme Court of Venezuela.
31. California Constitution Article I (1) reads: "All people are by nature free and independent and have inalienable rights. Among these are enjoying and defending life and liberty, acquiring, possessing and protecting property, and pursuing and obtaining safety, happiness and privacy."
32. 865 P. 2d 633 (Cal. 1994).
33. 533 P. 2d 222 (Cal. 1975).
34. See Optional Protocol to the Convention on the Rights of the Child concerning the sale of children, child prostitution and child pornography, Article 2c.
35. Compare "PC peep show: Computers, privacy and child pornography", *John Marshall Law Review* 27 (1989): 989–1013.
36. 000 US u10263, ruling of June 26, 1995. In general terms, the content of this paragraph is based on the opinion of Justice Antonin Scalia.
37. According to Traband (1995), this ruling reverses the burden of proof, violates the presumption of innocence, and sows mistrust between students and teachers. See Also *AVP v. Ministerio de Education y Cultura y Comité Olímpico Uruguayo* (Civil Court of Appeals, 5th Cir. 1998), in which the court held that journalistic reporting on doping issues, naming those involved, helps to eradicate this harmful practice while keeping the public informed on a matter of evident public interest, in this case the conduct of the country's athletes and the reasons why they were not invited to join the national team (118 *La Justicia Uruguaya* No. 13,590).

38. As is natural, the Supreme Court of Brazil in ***Paulstein Aureliano de Almeida, habeas corpus*** (1996), found that "the violation of the secrecy of telephone conversations for purposes of criminal investigation or judicial proceedings is not self-applicable: it requires a law establishing the hypotheses and the form that will permit a court warrant. . . . The guarantee that is provided by the Constitution, until such time as legislation is defined, does not distinguish public from private telephones, even those installed within a residence, because the juridical good protected is the privacy of persons, a dogmatic prerogative of all citizens."
39. 10 JLR 438.
40. 1 TTLR 189.
41. Privy Council (1996) 48 WIR 1.
42. Court of Appeals, Jamaica, 1994, 31 JLR 87.
43. Compare ***Bravo, Francisco v. Alfaro Standen SA, Assa SA***, Court of Appeals of Santiago, 2000: "A person who honours his debts must be removed from the records of overdue debtors"; and ***Bettenhauser Keim, Francisco v. Congresin Ltda y DICOM SA***, Court of Appeals of Valdivia, 1996: "A credit bureau is guilty of an arbitrary act if it refuses to eliminate a person from a list of debtors after it has been demonstrated by reliable documentation that his debt has been fully discharged."
44. Alternatively see ***Subtipos de Habeas data en el Derecho Argentino: sus posibilidades en el Peruano***, Argentine Association of Constitutional Law, 1996.
45. ***Lazcano Quintana, Guillermo v. Veraz SA***, National Civil Court of Appeals (Argentina), February 23, 1999 (La Ley, ADLA XXVI-C, 1491). Note to the ruling by Santos Cifuentes (1999); Rabinovich-Berkman, ***Cuestiones actuales en derechos personalísimos, Dunken, 1997, and Derecho Civil. Parte General***, Astrea, 1999.
46. LORTAD (Automated Data Processing Act).
47. ***Lazcano Quintana, Guillermo v. Veraz SA***, National Civil Court, Hall D, February 23, 1999; ***Urteaga, Facundo R. v. Estado Mayor Conjunto de las Fuerzas Armadas***, Supreme Court, October 15, 1998. See Cifuentes (1999).
48. The appeal was submitted by the Latin American Network of Women Transforming the Economy (REMTE-Chile) and the National Gender, Business and Human Rights Network against the body representing the judiciary (see Bidart Campos 1992: 415).
49. Law 23,990 on the National Blood System in Argentina and the 1977 Transfusions and Blood Banks Act in Venezuela are examples of legislation on such information.
50. "The right of non-discrimination will mean nothing for them if, for fear of their privacy, they retreat into isolation, cut themselves off from their activities, hide their suffering or feel guilt when in fact there is no reason to do so. Privacy is a right of everyone, and whenever a request for confidentiality is made in such cases the Court will take into account the reasons offered."
51. Administrative Disputes Court of Montevideo, first session, 1997, 1 ***Lex*** (1997) 17–27.

52. The Supreme Court of Costa Rica, in ***M.J.J. v. Instituto Nacional de Seguros***, denied an appeal, ruling that, "in effect, it is not illegitimate discrimination but a reasonable differentiation if distinct conditions are established with respect to premiums or benefits for persons with certain functional limitations, as is done with respect to the age of an applicant. There are obvious grounds for unequal treatment in these cases, and so the court cannot accept the appellant's argument that he is in a condition of equality with other persons who do not have his physical problem, and that he must be treated as such." This point of view strips the insurance system of its eminently social function. Moreover, there must be a limit on the number of variables used in calculating premiums, otherwise the size of the sub-populations would be reduced to the point that the actuarial concept of "insurance" would be rendered meaningless.
53. Section 39 (2) also covers persons convicted within the last five years, or against whom charges are pending.
54. US Bureau of Justice Statistics (1997) ***Privacy and Juvenile Justice Records: A mid-decade status report.***
55. In Latin America and the Caribbean, such systems were promoted by the SIPI programme of the Inter-American Children's Institute of the Organization of American States <http://www.iin.org.uy>.
56. Some security provisions have been built into the new Draft Code of the Child and Adolescent of Uruguay, Articles 11, 22 (f) and 211 to 215.
57. ***S., V. v. M., D.A.*** precautionary measures, filiation, Supreme Court of Argentina, April 3, 2001.
58. Adoption Records Database <http://www.skylace.net/adoption>.
59. 20 US 1232g.
60. Sample sites: <http://www.drugtestwithhair.com> and <http://www.drugfreeteenagers.com>.
61. The laws of Neuquén and the city of Buenos Aires allow for an alimony or support debtor to be prohibited from leaving the country until he meets his obligations. Other jurisdictions have adopted similar restrictions, for example, Srt. 90 of the Child Defence Act of Colombia and Article 220 of the Uruguayan Code of the Child.
62. See ***Hodge v. Jones***, 31 F. 3d 157, cert. denied 115 S. Ct. 581 (1994) and Jones (1995).
63. In ***P.M.D.J. v. CONSEP***, an appeal for habeas data was brought before the Constitutional Court of Ecuador. The court ordered that the appellant be deleted from the list because the particular article of the law criminalizing the possession of small narcotic doses had been repealed.
64. Appeal to the Supreme Court of Mexico, 2000. ***Semanario Judicial de la Federación y su Gaceta***, Vol. 11 (April 2000), P.LX/2000, p. 74.
65. Government to issue identity cards to newborns babies, ***The Star*** (Malaysia), March 16, 2001.
66. <http://www.ss.gov.ph/other/othe5001.htm>.

67. Supreme Court of Chile, 1996. "The appeal for protection must be brought against the banking institution that reported the complaints recorded in the Boletín Histórico, and not against the latter institution, which was acting in accordance with law."
68. Software is now available for recording any activity performed on a computer, including not only incoming and outgoing e-mail but also web sites visited, periodic screen scans and keystroke monitoring. This information is sent secretly to the "spy's" computer, and the user is unable to erase his tracks.
69. Ruling of September 9, 1974, Boletín Judicial No. 766, pp. 2437–44.
70. Article 53: "Entities issuing credit or bank cards are prohibited from informing 'personal financial background databases' on the holders and beneficiaries of credit card extensions or options when the holder has not paid his obligations, or is in arrears or undergoing refinancing, without prejudice to the obligation to inform the Central Bank of Argentina. Reporting entities are jointly and severally liable for damages and injury caused to beneficiaries of credit card extensions or options as a consequence of information provided."
71. *Semanario Judicial de la Federación* (1987), Vol. 217-228 (7), p. 75.
72. The Jamaican Constitution does not expressly prohibit wiretaps, but it provides a point of departure for analyzing the legal implications (cf. Section 22). In analyzing crimes under the Telephone Act of 1893 (Section 20), it is interesting to see how frequently axiological gaps appear in the face of new crimes resulting from the application of new technologies; it is difficult to cover them all in legislation and, generally speaking, they are treated as violations of constitutional rights.
73. (1979), Chancery Division 344 and (1979) 2 AII ER 620. See Demeriex (1992: 306–313).
74. National Court of Appeals in Criminal and Correctional Matters (Argentina), 1997. Another relevant decision is *In re Manuel Goggero* (National Court of Appeals in Criminal and Correctional Matters, 1999), reiterating the ruling established by the court in numerous precedents, to the effect that evidence obtained by a private party, even without the consent of the person involved, does not contravene any constitutional or procedural norm, regardless of its evidentiary value, but this is not applicable when it is the state itself that obtains it through one of its administrative organs, in the course of an unauthorized investigation or initiative. Such irregular investigation by the state, using subterfuge to obtain information and evidence on persons suspected of a crime, violates the constitutional principles that set minimum standards for due process and that are a condition of validity for any conviction. Similarly, ruling RHC 10534 of the Supreme Court of Brazil declares: "The recording of a conversation by one of the interlocutors does not constitute telephone tapping, and is admissible as proof in criminal proceedings" DJ 11/12/2000, p. 218.
75. Cámara Nacional Civil, sala E (1997), 1999-ii *Jurisprudencia Argentina* (1999) 339042.

76. See *Viernes Entretenimiento CA amparo*, Supreme Court of Venezuela, 2000.
77. Action for *habeas corpus*, Supreme Court of Costa Rica, 1991.
78. Supreme Court of Chile, motion for protection, 1997, 468 *Fallos del Mes* 2055-2058.
79. Internet and data interception capabilities developed by FBI, <http://www.fbi.gov/congress/congress00/kerr072400.htm>
80. This type of equipment uses triangulation with signals from groups of satellites to fix a position on the ground. One such group of satellites is maintained by the US government (GPS), and another by the Russian government (GLONASS). Both are available for civilian use (research, aviation, automobiles, etc.). The US system introduces slippage in the signal so that accuracy for civilian equipment is degraded, although objects can still be located within 10 metres.
81. FBI, Implementation of the Communications Assistance for Law Enforcement Act (CALEA), <http://www.fbi.gov/congress/congress97/calea2.htm>.
82. Communications Assistance for Law Enforcement Act, <http://www.epic.org/privacy/wiretap/calea/calealaw.html> (HR 4922).
83. <http://www.europarl.eu.int/committees.echelon_home.htm>.
84. American Management Association (2000), Workplace testing, monitoring and surveillance, <http://www.amanet.org/research/pdfs/monitr_surv.pdf>.
85. Birsch and Fielder (1994).
86. J.O. of January 7, 1978, as corrected in the J.O. of January 25, 1978.
87. See, for example, the veto exercised by the President of Argentina against Article 29 of the Personal Data Protection Act (Law 25,326 of 2000), presumably in an effort to avoid the cost of creating an administrative structure.
88. Yasin (1997) <http://www.techweb.com/wire/news/1997/11/1120hack.html>.
89 US General Accounting Office Information security: Computer attacks at Department of Defense pose increasing risks, May 22, 1996. <http://www.gao.gov/AindexFY96/abstracts/ai96084.htm>.
90 Information and Privacy Commissioner, Ontario, Canada. ***Privacy: The key to electronic commerce***, <http://www.ipc.on.ca/english/pubpres.sum_pap/papers-comm.htm>.
91. Resnick (1997) <http://www.sciam.com/0397issue/0397resnick.html>.
92. World Wide Web Consortium, P3P Vocabulary Working Group, Grammatical model and data design model, October 22, 1997, <http://www.w3.org/TR/WD-P3P-grammar.html> ; and P3P Architecture Working Group, General overview of the P3P architecture, October 22, 1997, <http://www.w3.org/TR/WD-P3P-arch.html>.
93. In this context, "authentication" means that the sender and the receiver can confirm the identity of the other party, as well as the origin and destination of the information.
94. "Non-repudiation" implies that the creator/sender of the information cannot deny authorship of the message or of the information.

95. Royal Decree 994/1999, regulating security measures for computerized files containing personal data, Spain, <http://www.agenciaprotecciondatos.org/datd8.html>.
96. Makrygiannis (n.d.) <http://www.adb.gu.se/-nickolas/papers/IRIS18.pdf> .
97. Leggiere (1998) <http://www.upenn.edu.gazette/1198/leggiere.html>.
98. See note 12 and accompanying text.
99. The end of privacy: The surveillance society", ***The Economist***, May 1, 1999, pp. 21–3.
100. Some legal systems recognize limitations on freedom of the press. The German Constitution, for example, provides in Article 5 (2) that "These rights are subject to limitations in the provisions of general statutes, in statutory provisions for the protection of the youth, and in the right to personal honour".
101. This case was resolved after its publication in Spanish; the Supreme Court made freedom of expression to prevail.

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# Copyright and the Internet

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## The two faces of ICTs and intellectual property

The human species has an inexhaustible capacity to be both captivated and terrified by its own creations. What is particularly disconcerting is that the forces of fascination and fear are sometimes bound up in the same object. The new information and communication technologies (ICTs), and in particular the Internet, are one embodiment of this paradox.

Many look upon the Internet, or rather the World Wide Web, as a magical stairway to a utopia in which knowledge, education, culture and decision-making are all democratized. Others see it as an unfettered world in constant motion, beyond the control of states, where everyone can be free. Still others find in it a market that operates without borders, customs formalities, business hours or even money, at least in its conventional form.

On the other hand, there are those who see the Web as a downward-spiralling staircase, something that envelops and dehumanizes us, plunging us into an unreal world where personal relationships do not exist, a world of solitary consumers who have exchanged the real world for a chaotic universe consisting only of fleeting images and sounds that devour distances and sacrifice privacy to the point of suffocation.

Curiously, intellectual property is also the object of much debate. Once relegated to the status of a minor legal discipline, intellectual property has assumed great importance for the workings of the economy and the information society. Like the Internet, it attracts both praise and diatribes. Some would elevate it to the status of an inviolable human right, as the perfect and perhaps the only incentive to creativity, investment and innovation. Yet as others see it, intellectual property rights represent the enshrining of the expropriation, monopolization and commercialization of knowledge, culture and information by those who wield economic power.

These views of the Internet and of intellectual property would seem to be rooted primarily in our mythical or utopian imagination, which no doubt has profound human value and meaning. At the same time, however, and in an attempt to shed some objective light on our ideas and our actions, these issues deserve careful analysis.

The present paper is an attempt at such an analysis, in the form of an essay with a specific focus: the links between the Internet and copyright. In it we shall discuss the legal concepts involved and analyze them critically from the viewpoint of countries that are mired in poverty and social inequality

and that are at the same time rich in culture, in biodiversity and also in fears and dreams.

We shall first outline the concept of intellectual property in general, and copyright in particular. We shall then apply this concept to the new information technologies as they relate to a few central themes: author and producer, originality, reproduction and communication, fair use and private copying. Finally, we shall suggest some hypotheses about how copyright can be respected in the course of appropriation and dissemination of works over the Internet.

The central thesis of this essay is that the notion of copyright, at least in its conventional form, falls far short of providing adequate protection for intellectual property over the Internet. These shortcomings arise both from the social and technical characteristics of the Internet and from the distortion that copyright has suffered in the process of applying it to the digital age.

As we shall see, efforts to achieve the true objectives of copyright have been vitiated by two extreme approaches, which have resulted in either excessive protection or no protection at all. These extreme approaches are also obstacles to the socially beneficial use of the Internet itself. Consequently, there is a need for new legislation that will respond better to the social use of the digital environment. There are in fact legal and institutional frameworks in which developing countries can negotiate rules and policies for the dissemination of knowledge, but civil society must also play an active role.

## The concept of intellectual property

Like the god Janus, intellectual property has two faces: that of appropriation, exclusivity and exclusion on one hand, and that of socialization and dissemination on the other.

Intellectual property is a complex set of legal and economic measures intended to protect the exclusive exploitation of intangible goods. Just as a company is the owner of its plant and vehicles, it can in a sense be the "owner"[2] of an invention embodied in a new artefact and of the trademark that it places on that artefact. If someone publishes a book recounting the history of that invention, the writer may have authorship rights to the text of the book.

Generally speaking, intellectual property is divided into three broad areas:

1. Copyright, the area that embraces the protection of literary, artistic and scientific works, as well as the content of new information technologies. This is the principal subject of the present essay.
2. Industrial property rights, which include the protection of inventions (patents), trademarks and other distinctive signs.
3. Rights to new plant varieties.

There are other intellectual creations, sometimes of significant economic value, that do not fall squarely into any of these categories, such as the traditional knowledge of indigenous peoples, for which special regimes are now under consideration.

The nucleus of intellectual property is ***ius excluendi***, or the right to exclude, i.e. the possibility that the owner of these property rights may exclude others from using or exploiting a work, an invention or a trademark for economic purposes. In this case, only the holder of those rights or a person authorized by him may produce, use, reproduce, transform or, in general, commercialize those intangibles.

On the other hand, exclusive intellectual rights are never absolute because they are subject to a series of exceptions and limitations in observance of the social interest, among which we may highlight the "temporary nature" of those rights, and so-called fair use.[3]

Each regime also has its own limitations: for example, while a literary work may be protected by copyright, it can be quoted and even reproduced within certain bounds for educational, cultural or information purposes. Although in principle a patented invention cannot be legally manufactured except by the owner of the patent or persons authorized by him, there are compulsory licensing systems whereby the state, under exceptional circumstances, may require a patent holder to transfer his exclusive right, temporarily and with compensation.

On the other hand, in a state that enshrines other constitutional rights besides those to intellectual property, the latter must be made compatible with other constitutional values such as the right to culture, to information, to education, to scientific and technological development, or to freedom of expression. This point is frequently overlooked by those who champion intellectual rights uncritically.

In a constitutional state, intellectual property is exercised within a constitutional framework, as is any other right. Modern constitutional systems actively seek to achieve balance and mutual limitation, when necessary, between competing constitutional rights, rather than allowing some rights to exclude or negate others. They strive in this way to ensure the simultaneous exercise of as many rights as possible.

From the economic point of view, limitations on intellectual property acquire their full meaning and necessity in the context of a market economy. As an exclusive and excluding right, intellectual property is the equivalent, or nearly, of a monopoly[4] and is in this sense contrary to the freedom to produce or commercialize goods or services.

For this reason, competition law and policies have been seen as an indispensable counterpart to intellectual property and are intended to prevent the abuse of intellectual property rights. If intellectual property rights were absolute, there would be no room for innovation and the free flow of ideas.

Unfortunately, it is the economic interests of industrialized countries that predominate in international negotiations in this field, as well as in much domestic legislation, and this fact has progressively shifted the balance between exclusion and dissemination in the area of intellectual property, tipping the scales increasingly towards the protection of ownership interests, sometimes to the point of damaging the public interest (Buydens 1999).

Thus, for example, the biotechnology industry has been pressing for the expansion of patent rights over elements that were traditionally excluded, such as living beings and discoveries. The software industry has been lobbying for the protection of computer programs under copyright law, relying on a forced comparison with literary works. The intention here is to protect not only the selection and arrangement of elements in a database, but its content as well. There is a generalized tendency to grant excessively long terms of protection for intellectual property, to apply such protection to new fields that were formerly excluded, and to eliminate or diminish exceptions and, in general, the possibilities of fair use for protected intellectual goods.

In contrast, economically valuable forms of information generated in developing countries go unprotected and in fact are frequently appropriated as intellectual property by companies in industrialized countries. Examples of such information include the ancestral knowledge of indigenous communities and genetic information from megadiversity countries, information that is extremely useful to transnational producers of pharmaceuticals, agricultural inputs and biotechnology. The cultural products of developing countries, such as handicrafts and folklore, face a similar situation.

The pressure of developed countries, especially the United States, to enhance the protection of intellectual property has translated into legal and institutional reforms in developing countries. Yet those reforms, and the level of protection they afford, have been of very limited effect. Paradoxically, this situation may be attributed to the fact that these pressures have been purely external, while there are no interest groups within developing countries campaigning for effective protection[5] (Sell 1998).

These criticisms of the excesses and abuses of intellectual property rights by no means imply that those rights are not socially useful. Much of our information, works and inventions would never have been produced without this protection, and many cultural industries and authors demand and deserve it. Without protection, many inventions and transactions would not take place. In a market economy, it is unrealistic to expect that businesses would spend huge amounts developing proprietary information only to find themselves immediately displaced in the market by competitors offering cheap knock-offs of their products.

It is no coincidence that authorship rights are included in declarations of human rights. Intellectual creations are linked to the rights to personality and to labour rights, both of which affect human dignity directly. Intellectual work can and must be recognized, both socially and economically. Otherwise we would find ourselves in a regime where this form of human labour is in

effect plundered, and that would probably and paradoxically bring us to a situation of absolute monopoly (Lévy 1999). What we are questioning here, then, is not the principle that the rights of intellectual creators should be recognized, either through a profoundly overhauled copyright law or through new legislation, but rather the scope and structure of copyright, the forms of remuneration and the exceptions applicable to the Internet, and above all its relation to the public interests at stake.

In fact, whenever national industries producing goods of high intellectual value-added have emerged in developing countries, the interest in intellectual property protection has risen accordingly, as can be seen in the cases of video and music producers in Brazil, South Korea, Mexico, the Philippines and Singapore, or the computer industry in Thailand and Malaysia, or pharmaceuticals in India (Sell 1998).

Within this political economy of intellectual property, the relationship to the Internet has some very special features. The great capacity to communicate and reproduce works placed on the Internet lends both urgency and complexity to this balance, which is not only legal but very real, between exclusion and dissemination.

Excessive protection of works circulating over the Internet would make it difficult or impossible to make creative use of them. Writing a book, composing a piece of music or creating a graphic design using Internet resources would require an endless series of authorizations to use protected texts, sounds or graphics. This would make the process extremely onerous and complex. On the other hand, weak or ineffective protection would discourage authors and producers from placing their works on the Internet, if they want to protect and exploit them economically. The easy and often uncontrollable reproduction of works that the Internet allows, in the absence of protection, would make the Web a lawless land where many creators would fear to tread.

The mechanism whereby developed countries, and especially the United States, have brought pressure for greater protection of intellectual property has been to link it with trade. The argument is that no country can afford to export goods or investment to another country where its products will be counterfeited and sold at much lower prices. The United States, for example, has therefore taken commercial retaliation against countries that failed to protect intellectual property.

The Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS) represents the institutionalization, through a multilateral mechanism negotiated in the context of the General Agreement on Tariffs and Trade (GATT), of minimum international standards for intellectual property. TRIPS contains no ad hoc provisions relating to digital media networks, but rather universalizes software protection through copyright. Moreover, TRIPS allows for the development of information policies for teaching, research and private use, through exceptions to exclusive rights (Correa 1996).

With the "de-territorialization" of the Internet, however, this linkage between intellectual property and international trade becomes relative. Electronic trade via the Internet, for example, allows instantaneous transactions in which both the goods acquired and the price paid may be virtual, and hence very different from those that are the object of conventional international trade and investment. Of course, anyone who sells over the Internet can protect his information via copyright, but he cannot discriminate between countries that offer greater or lesser degrees of protection.

## Intellectual property and new information technologies

There is a direct link between intellectual property and the new ICTs. Of all the conventional legal measures, intellectual property has been the preferred mechanism, especially among developing countries, for protecting the production and marketing of informational goods or goods with a high information content.

In an economy where a great portion of value-added derives from technology and embodied information, the nature of information as a public good in itself is clearly problematic. Producing information often requires significant investment, as is the case with new computer programs, databases, multimedia works, musical recordings or film productions. Paradoxically, with the new technologies available, reproducing this information has become easy and inexpensive, as can be seen in the widespread illegal copying of software, videos and books.

If producing information is expensive and difficult, while copying it is cheap and easy, why would a business, for example a computer programming company, invest in producing new software? The answers will differ: it may be that the company that produces the originals will benefit from being the first in the market, or that company may be the recipient of government subsidies, or it may simply be that there are always consumers who will prefer the original product. Yet there is a further answer to be found in intellectual property itself. If the government ensures an acceptable degree of exclusivity to the company in producing its programs, competition based on copying can at least be diminished or controlled (Cooter and Ulen 1998).

For developing countries, which are primarily importers and consumers of the information transmitted with these new technologies, the problems and challenges are complex. In the absence of solid empirical studies, we may nevertheless venture to say that intellectual property will be more important to a country's international trading interest the more significant its production of goods is linked to ICTs (Correa 1999). For countries that are primarily importers and consumers, the important thing is to ensure that the level of intellectual property protection does not inhibit trade, technology transfer, and domestic production and innovation.

A deeper challenge for developing countries is to make themselves into innovative producers of these informational goods. This is a complex but

not an impossible undertaking, as can be seen in the success of government efforts to develop the computer industry in countries like Brazil, India, South Korea and Costa Rica. In Latin America as a whole, the copyright for computer programs is usually held by foreign companies. Production within the region has been confined for the most part to the publishing industry and the creation of musical and television works (Correa 1999).

## Copyright and the Internet

The Internet poses problems of intellectual property rights over ICTs that are both complex and fascinating. In terms of intellectual property specifically, the Internet has a particular impact on copyright and trademarks (and on the relationship between trademarks and domain names). In this paper, as noted earlier, we shall focus exclusively on the first of these relationships, which is copyright.

Copyright consists essentially in the exclusive power of the owner of such rights to exploit a work for economic purposes: by "work", we mean here an artistic or literary creation, a scientific text or the content of new information technologies. In other words, copyright is the legal power to exclude others from making economic use of a work. Yet, as we shall see, it also includes other kinds of rights, known as moral rights.

From the economic viewpoint, a copyright holder may perform, authorize or prohibit the reproduction, communication, distribution, importation and translation of copyrighted works. The relationship of copyright to the Internet, then, is a direct one, since the Internet circulates many works, such as texts, images, music, computer programs, databases, plans, designs, etc.

The central issue with respect to copyright and the Internet, and to intellectual property in general, is to strike a balance between exclusion and dissemination. It is clear that authors and producers must be entitled to recognition of their creative effort and their financial investment, but culture and ideas cannot be monopolized, except at the cost of the cultural and educational development of the community.

For example, people who write and publish school textbooks must have authorship rights, but if those rights lead to monopolistic price-fixing that makes the works inaccessible we will be faced with an education policy problem that goes beyond copyright issues. On this point, the Appendix to the Berne Convention allows for compulsory licensing by developing countries for translation of works for school, university and research purposes. Those licences are intended to make available certain works to meet the needs of the public or the education system at a price comparable to that in their country of origin. The social role and importance of copyright, then, cannot be evaluated in isolation from other social considerations.

Generally speaking, to prevent abuse in the exercise of authorship rights, those rights are granted for a limited time only and are subject to exceptions and fair-use provisions. The existence and exercise of fair use is essential if

intellectual property rights are not to become obstacles to economic competition and the dissemination of knowledge.

In copyright theory, fair uses are exceptions that do not affect normal exploitation of the work and do not harm the legitimate interests of the copyright holder. In addition to the ability to quote extracts, other fair uses include the dissemination of media articles or commentaries, citing the source, and the dissemination of lectures and speeches to the press, personal use of speaker's notes, etc.

The most far-reaching international rule-setting initiative on copyright and the Internet is that of the World Intellectual Property Organization (WIPO).[6] In 1996 this United Nations agency proposed, for the ratification of at least 30 countries, the WIPO Copyright Treaty (WCT). This treaty comprises, together with the Performances and Phonograms Treaty, the WIPO Internet treaties.

According to its Article 1, the WCT is essentially a special agreement within the meaning of the Berne Convention for the Protection of Literary and Artistic Works (1971). Its basic thrust is to extend conventional copyright protection to works in digital environments and networks. We shall express some reservations throughout this article as to the real prospects for that undertaking, recognizing that the Internet effectively undermines the conceptual basis of many aspects of copyright.

These reservations are shared by many critics. When it comes to applying copyright in digital network environments, as one author has noted, "any revision must include a more profound analysis of the nature of authorship rights, and in particular the possibility of maintaining the traditional formulation of exclusive rights in the face of a growing collectivization that could be better addressed through rights of compensation or other legal formulas" (Correa 1996).

In any event, the Agreed Statement on Article 10 of the WCT provides that contracting parties may "carry forward and appropriately extend into the digital environment limitations and exceptions in their national laws which have been considered acceptable under the Berne Convention. Similarly, these provisions should be understood to permit Contracting Parties to devise new exceptions and limitations that are appropriate in the digital network environment" (WIPO 1997).

Even within the framework of these multilateral negotiations, then, there is room for states to legislate policies in this area. In designing such rules or policies, it must be borne in mind that the Internet can also constitute a means for concentrating information, education and wealth, as well as an instrument for democratizing them.

In Latin American societies, inequitable as they are, states must develop technology and education policies that will serve to disseminate knowledge. It is in the context of these democratizing policies that the rights to intellectual property on the Internet, and its "exceptions and fair use", must be protected and regulated. It is in the context of these policies that copyright must be

redesigned to adapt it to the digital age. Authorship rights must contain balancing factors of a scope that will provide real incentives to the production and dissemination of knowledge and wealth but that will never pose barriers to those processes.

## The Internet and the right of integrity in a work

Authors' rights to their works go beyond economic or property rights. As we have noted, in the Romano-Germanic legal systems there are also moral rights of authorship. These rights recognize the author's interests in the work. Chief among these rights are the right to be identified as the author of the work (paternity or right of attribution), the right to withhold it from publication (right of disclosure and withdrawal), and the right to object to any distortion of the work (right of integrity in the work).

In contrast to property rights, moral rights cannot be transferred and they have no time limits. These rights show that copyright is not a purely commercial affair but is also linked to so-called personal rights, i.e. those that arise from the condition of persons as such.

The moral right to integrity in a work is directly related to the property rights to transformation of that work. We may expect, then, that once the author transfers his property rights there may be conflict between the transformations that the new holders wish to make to the work and the moral right of the author to prevent its distortion (right of integrity). Such a situation can readily occur between the person who designs a web page and the person for whom it is designed.

The Internet, however, poses other unusual situations for copyright and in particular the rights of integrity and transformation. A work may be placed on a server and updated countless times by many individuals (as is the case with Linux). This situation is clearly very different from that of a book, a painting or a video, reproduction of which requires a material support on which a version of the work has already been established. In other words, digital network technology gives such versatility to works that its impact on the right of transformation and in particular on the right of integrity is obvious.

In contrast to television and radio, where reproduction possibilities are limited to recording a video or audio work, the Internet offers many more alternatives in terms of the kinds of works that can be transmitted, as well as a greater capacity to reproduce and transform those works. Even more important is the fact that, while national authorities can readily control what goes on in a television or radio station, it is far less easy to control access to information from the Internet, or its extraction and transformation.

## Reproduction and communication

Among the economic rights (property rights) of authors are the rights to control the reproduction, communication and public distribution of their

works. By reproduction, we mean replicating the work in any medium or by any procedure, including digital storage. Communication, on the other hand, consists in making the work accessible to a number of individuals, assembled or not, as in a theatre production, the screening of a film or the transmission of a radio programme. Distribution means making the original work or copies of it available to the public, by sale, lease or any other manner.

The Internet disrupts the traditional structures of these concepts because it superimposes them to the point where they are difficult to differentiate. By connecting a computer to the Internet, we can download works that are protected by copyright. This connection therefore implies automatic "reproduction" of protected works, since in technical terms the Internet requires our computer to make a partial and temporary copy of the web pages we visit. At the same time there is an act of communication, although here it is not clear whether that communication is public or private. In a sense, there is also distribution, both for the copies that our computer makes and for the many possibilities we have to make a "private copy", by printing or recording the information.

Another property right of the author or copyright holder is that of "adapting or modifying the work", yet the editing possibilities of current programs give us the ability, at least in a private setting, of modifying the works that we find on the Internet. Moreover, if the system permits access, we can modify the work online. We can change pictures, musical works, literary texts or computer programs, transforming ourselves in this way from audience into co-authors, thereby breaking the concepts of integrity and of author, producer and audience.

This superimposing of property rights can even coincide with another property right, that of "importing". If their works are produced outside their own country, authors have the right to import or repatriate them, unless they have already been marketed abroad (exhaustion of rights). Yet, when it comes to the Internet, it may well be that a work – a text, a photograph or a piece of music – can be purchased abroad, and online, by the use of a credit card. Is this an act of importing?

Internet technology, then, has blurred the conceptual boundaries between the property rights of authors. It makes automatic copies and sends them to us in unpublished form, sweeping away frontiers in seconds. Digital reproduction technologies vastly surpass analog technologies in terms of volume capacity, speed and quality, and they make mass reproduction possible at the domestic level (Marks and Turnbull 1999).

These technological and social characteristics of the Internet mean that, for copyright purposes, their dissemination function comes out ahead of their exclusion function. Proof of this can be seen in phenomena such as Napster, virtual libraries that offer free information, virtual editions of magazines, computer programs that can be freely downloaded and, in general, the great number of public and private services that are available free over the Internet. In many of these cases, the financing is provided not by the surfer but from

advertising placed on the sites the surfer visits and from the economically valuable information that the service gathers from surfers (Lévy 1999).

Of course, there are other interests exerting pressure in the opposite direction, in the sense of regulating or protecting copyright over the Internet. The Napster case and the demands of the recording industry point clearly in this direction. Other phenomena such as the registration of copyright for information placed on web sites, payment for access to that information, identification of persons visiting the site or the contractual stipulation of conditions of access are all expressions of this demand for the protection of such rights.

## Authors and producers

There is an important distinction to be made between authors and producers. The author is the intellectual creator of a work, while the producer takes the initiative to finance production of the work and place it on the market. The author may assign his economic rights to the producer, as happens when the author is an employee of the producer.

There has been a recent trend in copyright law to strengthen the rights of producers at the expense of those of authors. The legal clout of those who invest in a computer program is greater today than that of the person who designed it. There has been a similar development with "neighbouring rights"[7] of broadcasters and phonogram producers, the investments and technical activities of which are protected in a manner similar to the creative activity of authors and artists.

Legal experts and economists seeking to enhance protection of authors' rights frequently argue that the economic benefits from this kind of monopoly provide an incentive to authors. This statement, debatable as it is when applied to authors, would seem however to be more admissible today in the case of investors and producers.

In a market economy, the protection of investment in intellectual property, whether desirable or not, is a real issue and poses the need for policies, regulations, limitations or exclusions that will affect other values and public interests. If such policies and regulations are to serve these social interests, they cannot be identical for all countries. While countries that dominate the production of copyrighted or copyrightable information will call for greater protection, consumer countries of such information will, or should, seek to ensure an adequate degree of flexibility. Yet as those countries themselves become producers of information, for example through the growth of their cultural industries, they too will come to feel the need for broader protection.

In any event, the Internet now poses a series of copyright questions. Can and should the Internet make every person an author? By eliminating publishers and producers, does it give a new voice and new rights to authors, or does it make authors into both authors and producers? Can a socially desirable and technologically feasible balance be struck between appropriation and dissemination?

The difficulty with private appropriation of information in general – its nature as a public good that in reality always requires some kind of material support, the fact that it is more a process or an event than an object (Lévy 1999) – comes to a head in the case of the Internet.

These are just some of the particular features that give rise to doubts about the suitability of copyright for regulating the circulation of works over the Internet. It would seem more reasonable to overhaul copyright completely or to create new laws that will not only preserve the dissemination potential of the Internet but will recognize a new kind of authorship rights, as required.

Although it may seem far-fetched, comparing the Internet to a drinking water system can serve to illustrate the idea that in using a photograph, for example, or downloading music from the Web, we are turning on an information faucet rather than reproducing a product (Lévy 1999). Just as we pay to use a little water, we could also pay to use some of this information, if only to make sure that it keeps on being produced. Yet, in looking at things this way, we are already adopting a normative approach that will reshape copyright significantly.

Alternatives of this kind could perhaps be appropriate for developing countries, to the extent that they preserve the dissemination of information over the Internet while recognizing certain rights of private creators who want or need to earn revenue from their works. This would certainly seem to be the alternative under consideration in the Napster case.

Problems may arise at the point of intersection between copyright and criminal law, relating for example to originality and new technological possibilities of accessing literary, visual or musical works placed on the Web or "collaborative works" created using the Internet. If a group of authors writes a book using the Internet, it is technically possible to capture this information and plagiarize it. Proving this in court could require evidence of a technical kind previously unimaginable in intellectual property proceedings.

## The Internet and originality

Originality is a key concept in copyright. Imagine, for example, what it would mean if someone sought to protect a book or picture copied from someone else. Similarly, a simple list such as a telephone book or information that by its nature cannot be exclusive, such as the wording of laws, can hardly be considered original creations subject to copyright protection.

Legislation does not generally define what is meant by "originality": it has been left to judges and treaty drafters to provide a definition. While in common-law countries the prevailing view has been that an original work must be a unique creation and not a copy, continental European legal systems have insisted that an original work is a projection of the author's personality, the material expression of his creativity (Rengifo 1996).

Today, these two approaches have converged, and the newly dominant concept of originality requires a degree of creativity on the part of the author

– the author must have created his work through independent effort without openly or surreptitiously copying a preexisting work (Rengifo 1996).

The notion of copyright reflects the spirit of the Renaissance and thus stresses the individual's contribution in the creative process. Seen from other cultural viewpoints, such as that of many indigenous peoples, the author is always a collective being. A craftsman, for example, is an artist expressing the tradition of the community. In effect, the individual contribution must not obscure the social dimension in the creation of a work. The history of art and science provides countless examples of social sources feeding the most creative genius.

Since creation is both an individual and a social process, copyright must seek to strike a balance between these two kinds of interests. An overly lax or broad concept of originality will mean that virtually any kind of information can be regarded as copyrightable. There is in fact a trend to extend copyright protection to any work in which time and money have been invested: computer programs with an obvious structure, the contents of databases, hypertext on the Internet, web pages with very standard formats. What this says is that the thing that is really being protected is an economic investment and not creativity.

A very narrow and strict concept of originality, on the other hand, will mean that many works that represent an innovative contribution may go unprotected. This can be discouraging to small but valuable innovations and transformations, and it will tend to reinforce the monopoly of those who are successful in obtaining protection.

The Internet raises questions about the concept of originality, such as those surrounding certain versions of ***art.net*** that allow for a kind of artistic Linux – the Internet makes it possible for us not only to see a painting, hear a song or read a literary text but also to transform them, to be both spectator and co-creator. Cyberspace can let us join in a collective aesthetic creation where everyone can participate, where the distinction between author and producer or that between author and audience becomes increasingly blurred.

Without going into aesthetic considerations about this prospect, we may note the cracks that this technology is producing in the legal foundations of copyright, where concepts such as "author", "originality" and "integrity" depend on a clear distinction between author and audience.

## Online program protection

The Internet's high degree of interactivity also has complex implications for the production and marketing of computer programs online. Computer programs are a problem for copyright in any case: while two programs may have an identical structure, the copy can be disguised by merely tinkering with its visible features (Sarra 2000).

In principle, computer programs available over the Internet are protected by copyright. Paradoxically, in certain cases the Internet can even enhance

the level of protection. One technological response to preventing copying and counterfeiting has been to use cryptography (Sarra 2000).

Marketing software over the Internet provides opportunities for small businesses and independent professionals, who would find it difficult to compete with large producers through conventional marketing channels (Sarra 2000). This option could enhance the economic potential of software producers in developing countries.

Despite cryptography, there remain legal difficulties in determining whether a program is original and what the scope of protection should be. For example, if someone penetrates the internal structure of a computer program (the source code) downloaded from the Web and instead of copying it uses it to create a new program, we are faced with what is called reverse engineering. Is reverse engineering illegal and an infringement of copyright?

A basic principle of copyright is that it protects the form in which ideas are expressed, not the ideas themselves. It is a specific picture representing a forest or a text explaining a scientific theory that will be protected, not the idea of painting a forest or the scientific theory itself. Similarly, the mathematical ideas underlying a computer program cannot be protected, but the way in which those theories are used to design a specific program is copyrightable. If things were otherwise, it would be tantamount to prohibiting a novelist from reading other novels in order to write his own.

The possibility of reverse engineering increases with the greater accessibility and circulation of programs that the Internet makes possible. Consistent with emerging jurisprudence in the United States and Japan, and with the European Council Directive on computer programs, legislators and authorities in developing countries will have to allow reverse engineering as long as it does not represent a step towards plagiarism. Reverse engineering must not be seen as a copy but rather as research into the ideas of the program – in legal terms, "fair use", i.e. an activity that, at least by itself, does not interfere with normal exploitation of the original work nor with the rights of the original author.

Reverse engineering is essential for the technological and economic development of software industries in developing countries, and it constitutes a technical necessity for ensuring interoperability between programs. This clarification is necessary because some legal provisions, such as Andean Decision 351, could be interpreted as prohibiting reverse engineering.

Andean Decision 351, like much national legislation, authorizes a person acquiring a computer program only to load and run it on his hard disk and to keep a backup copy. Unfortunately for the interests of developing countries, these are the only exceptions to copyright that this rule permits (Alvarez and Restrepo 1997).

Nevertheless, when properly conducted, reverse engineering is not only necessary but compatible with the fundamental principles of copyright, which are to protect the author or the holder of author's rights while striking a balance vis-à-vis social needs for the dissemination of ideas, culture, science

and technology. To prohibit reverse engineering would be equivalent to copyrighting ideas, which as we have seen is contrary to the basic principles of copyright.

## Databases

The "originality" problem appears again in the case of databases. The Internet contains countless databases that can be accessed through a connected or authorized computer from anywhere in the world. These databases can be quickly and perfectly reproduced. This poses the problem of what exactly it is that copyright protects in a database placed on the Internet. Here we must distinguish between different parts of the database: the program or software that runs it, the content or data inside it, and the container itself.

All of these database parts might seem to be protected by copyright. Yet when it comes to the data or content, we must note that what is protected is the "selection or arrangement of their content" to the extent that they constitute intellectual creations. There is no protection for the data or material itself when it has been taken from the public domain.[8] This is the meaning of Article 5 of WCT and Article 10.2 of the TRIPS Agreement, as well as the interpretation that the Andean Court of Justice has given to Articles 4, 28 and 58 of Andean Decision 351 on Copyright.

It is also essential to clarify what is protected in databases in order to maintain the balance we have been discussing between exclusion and dissemination. We may say that authorship rights deriving from the creativity, work and investment of someone who constructs a database must be balanced against the needs, benefits and fair use of users (Sarra 2000). In effect, scientists, researchers, educators and the general public also have rights and interests in accessing information.

In preparing a database and posting it on the Internet, then, the author of that compilation or the person who has rights to it must, on one hand, respect the rights of those who prepared the data and, on the other hand, allow the public to access that information and make use of it by extracting from it freely, if it was taken from the public domain and if it is used in a manner consistent with fair use.

While it is difficult to maintain this balance, it is important to do so. There has been a tendency, particularly within the European Community,[9] to provide overprotection for databases or, more precisely, to broaden the legal concept of databases to include any compilation that represents significant economic investment. According to this view, copyright should apply not only to the selection or creative arrangement of data but to the content itself (Buydens 1999), on the grounds that some databases are ***sui generis*** and so the investment in updating, verifying and presenting their content must be protected (Sarra 2000). Unauthorized extraction of information from those databases, then, would be a violation of copyright, even if that information was taken and compiled from the public domain.

Such an approach certainly gives excessive scope to authorship rights over databases, to the point of breaking the balance with social rights and interests in access to information and with fair use by the public. In contrast, the US Supreme Court (***Feist Publications Inc. v. Rural Telephone Service, 1991***) rejected copyright to alphabetical listings of names, addresses and telephone numbers, on the grounds that such information was obvious and did not entail the modicum of creativity necessary for copyright protection.

One of the strengths of the Internet lies precisely in the fact that information from databases can be widely accessed and used. Hypertext links, for example, can be seen as a database, and they are indeed one of the keys to the development of the Web. To protect hypertext links on the grounds that building them into a web page involves investment or creativity would inhibit rather than facilitate the use and growth of the Web.

The simple aggregation of data, however labour-intensive it may be, cannot in itself be protected – it is only the original selection and creative arrangement of information that is copyrightable. To maintain otherwise would be in a sense to legalize the private appropriation of information already in the public domain, and that would be contrary to the basic principles of human rights and constitutional rights to information, culture and education.

Other restrictions on technological developments related to database use include "prohibition on" or "sanction for" the import of tools or technologies that can be used to copy databases, as well as provisions that hold Internet goods and services providers liable for violations committed by users. Such measures can readily become a means of extending excessive protection to intellectual property and converting it into a system of monopolistic abuse.

## Web pages

Another problem that relates directly to originality has to do with the protection of web pages that may include and combine text, photographs, music, video and other copyrightable works. Under such a system, the authors of web pages would have to obtain the appropriate authorizations. The new web page, in turn, would be protected as a new work. This is more or less what happens now in producing a film, where the music, text and images used are protected by previous copyrights, and the film production itself is protected as a new work.

The originality problem arises with the need to differentiate creative pages that are part of a business marketing strategy from other pages created with standard software and designs that are similar to thousands of others circulating on the Internet (Sarra 2000). A further problem has to do with determining who should have authorship rights, since businesses frequently contract other firms to design their web pages. In this case, in the absence of an agreement to the contrary, copyright will go to the firm that contracted and paid for the preparation of the page (Sarra 2000).

## Private and unauthorized copying

If we record a musical or audiovisual work on a home cassette player and even if we photocopy part of a book that belongs to us, we are not violating copyright. In effect, this is what is known as "private copying". It consists in reproducing a work for purely personal reasons, i.e. for private use without any intention to profit thereby. This is different from "unauthorized copying", which is generally done on a mass scale and for profit, and for which there is no compensation mechanism.

Generally speaking, intellectual property laws permit private copying and provide for the payment of compensation for any economic loss suffered by holders of the copyright. These compensation payments are generally financed by imposing a levy on the importers of recording devices such as photocopiers, recording machines, etc.

The question then arises: does our reproduction for personal use of works posted on the Internet constitute private copying? In principle, there is no great difference between recording a work on an audio or video cassette, on the hard drive of our computer, or on a diskette. In all cases, there will be a problem if we make multiple copies with the intent of selling them.

Nevertheless, unlike the situation with private audio or video copies, there is as yet no legislative mechanism to provide financial compensation for the loss that private copying of a work on the Internet may imply. There is no copying levy on the import of computers, since their function is not restricted to reproduction. On the other hand, the automatic copy that a computer makes of a work on the Internet, in contrast to a private copy, is involuntary and temporary. It often reflects a technical rather than a personal need.

When it comes to the voluntary printing or recording of a work placed on the Internet, this would seem to correspond more clearly to the concept of private copying. Yet some acts, such as placing a work on a web page different from the one where we found it or resending it electronically, may constitute a use that, while not necessarily commercial, exceeds the private sphere and could violate copyright.

Some works on the Internet may be susceptible of communication beyond the personal sphere, depending on the context in which it is used. It is natural enough for the text of an e-mail letter, for example, to be widely disseminated by a participant in a discussion group, but if it is a personal communication it will involve the right to privacy and perhaps copyright as well.

## Neighbouring rights and the Internet

Neighbouring rights protect the property and moral interests of those who help to make copyrighted works accessible to the public. For example, a singer may perform a musical work or a radio station may broadcast it. On one hand, there is copyright to the musical composition, and on the other hand

there are neighbouring or related rights to the performance or broadcasting of the work. Although related, they are distinct rights. They are called neighbouring or related rights precisely because they are directly related to authorship rights.

Neighbouring rights protect the property and moral rights of performing artists, producers of sound recordings, and broadcasting organizations. In terms of protecting investment, there is a tendency to lump together within a single category artistic activities such as those of performers and the technical processes of recording and broadcasting sounds. In any event, the connection between neighbouring rights and the Internet arises from the fact that many of these performances and recordings are widely disseminated over the Web. Illegal reproduction thus affects not only copyright but neighbouring rights as well.

The property rights conveyed by neighbouring rights refer to the power to authorize or prohibit reproduction, distribution, rental and, in general, public communication of performances and to receive compensation for such communication.

The WIPO Performances and Phonograms Treaty (WPPT) extends to the digital environment the rights and protection of the 1961 Rome Convention on neighbouring rights. Attention should be drawn, however, to the Agreed Statement concerning Article 15. It declares that the diplomatic delegations that adopted the treaty were unable to achieve consensus on the exact scope of rights of broadcasting and communication to the public that should be enjoyed by performers and phonogram producers in the digital age.

Another aspect to note is the provision of Article 16 of the WPPT, whereby contracting parties may, in their national legislation, provide for limitations and exceptions to neighbouring rights in the digital environment, provided that such limitations are consistent with fair use as defined in the Berne Convention.

Articles 15 and 16 of the WPPT, then, confirm the idea put forth here: copyright, including neighbouring rights, must be significantly redimensioned to meet the challenges of the digital age.

## Technical protection against unauthorized copying

In addition to legal measures, efforts have also been made to develop new technologies to prevent the infringement of copyright in works on the Internet. The Millennium Act in the United States and Article 11 of the WCT grant legal protection to authors and producers against attempts to circumvent these technical measures.

These technical measures are varied and complex. They range from the encryption of information to mechanisms that will provide warning of copyright before a work is reproduced. In other cases, they prevent the making

of more than one copy, and they provide various systems for identifying the user or any inadvertent and harmless errors that will show when a database has been copied, for example.

These technologies have also been the subject of much debate. For those seeking protection, they are ideal mechanisms for insuring their rights without necessarily limiting those of users. For their critics, such technologies limit the right to information and to the fair use of private copies and, in some cases, even threaten the right to privacy.

Some of these technologies are already in use: the results have been uneven, but it is clear that their indiscriminate application would certainly represent an attack on the legitimate rights of users. Moreover, as the companies themselves recognize, these technologies suffer from several technical limitations and are by themselves inadequate for providing effective protection (Marks and Turnbull 1999).

## The problem of jurisdiction

The Internet is global, while intellectual property laws, despite their internationalization through bilateral and multilateral treaties, continue to be based on national states, their laws and authorities. This discrepancy gives rise to complicated jurisdictional problems. When Internet use infringes upon copyright, who is entitled or required to complain? Should the plaintiff go to court in his home jurisdiction or that of the Internet goods or services provider, or perhaps that of the person accused of the violation?

International private law governs the legal relationships between the nationals of different states. It is clear that schemes of this kind are inadequate to the extent that they are based upon territoriality (Sarra 2000). Internet jurisdiction is further complicated by the speed at which information travels over the Internet, the possibility that a single page or portal can be found on different servers located in several countries, and the fact that consumers can conduct transactions from any access point in the world.

Indeed, some see in this lack of central control and of defined rules and authorities a revolutionary aspect of the Internet. We may be on the threshold of a new social reality under a global government and systems of self-regulation. Yet this does not dispense with relationships of power within the system. Thus, for example, it is the most highly computerized societies that will dominate because it is in their countries that the companies, institutions and servers that control the flow of key information, such as domain names, will be located (Simon 1998).

One response to the lack of defined standards, authorities and jurisdiction has been the emergence of systems of arbitration and self-regulation. This phenomenon supports the so-called legal pluralism theories, which hold that there are many juridical orders beyond those created by the state.

## Electronic commerce and copyright

The Internet is generating new forms of trade. Commercial transactions over the Internet are not, as some maintain, simply a complement to traditional national and international trade, conducted via the telecommunication media (Bertrand and Piette-Coudol 1999). Such transactions, at least over the Internet, are not always merely complementary because they often involve informational goods and they are paid for by sending information (especially credit card numbers). These transactions are nearly always instantaneous, which makes it difficult to determine whether the contracting parties have given their legal consent. On this point, we must recall that the Internet consumer frequently has no direct contact with merchandise and often conducts the transaction with or via a server (Barbieri 1998).

On the Internet, the "adhesion contract", whereby the consumer simply accepts or "adheres to" the supplier's conditions of contract, is the most common legal format. Although the adhesion contract is a legal procedure that is widely used in mass commerce today, that procedure is proliferating over the Internet and the forms of legal control designed for such contracts (such as public registries and lists of prohibited abusive or oppressive clauses) do not seem readily applicable.

It is precisely in such adhesion contracts that companies can include abusive clauses relating to copyright – for example, a company providing information via databases may establish a contractual prohibition on the use of data that may have been taken from the public domain.

The Internet's impact on trade gives a new and significant economic dimension to information. Information today is wealth, and the technical possibilities for businesses to keep records on purchasers' habits and interests mean that it is the consumer who, by the simple act of searching for information on the Web, produces that wealth (Lévy 1999). From this viewpoint, as Bob Metcalfe has noted, the more computers there are connected and the more information there is circulated, the more wealth will be generated. We are faced, then, with a new kind of externality digital externalities (Simon 1998). Many writers have pointed to the disappearance of commercial intermediaries on the Internet, the emergence of digital money, and demand-based production, among other aspects.

It is these sharp differences between conventional trade and electronic trade that have given rise to a new set of rules and laws focused on electronic trade. Such legislation tends to encourage user identification systems and seeks to give electronic contracts equal force with conventional contracts.

In terms of copyright, a key problem is the registration of protected rights. Copyright arises at the time of creation and does not require any legal registration – if this is done, it is simply for evidentiary purposes in case of litigation. National copyright offices maintain this information, which is also useful for finding out who is the owner of what work. The volume, speed

and transnational nature of circulation of these works over the Internet demand new forms of registration.

One criticism of the requirement for conventional licences for the use of copyrighted works placed on the Internet is that it is difficult to identify protected works and their owners. WIPO has accordingly proposed establishment of a global information network of national and regional copyright registries, both public and private (WIPOnet). Such a network would make it possible for persons interested in using copyrighted works anywhere in the world to find information on copyright holders, learn about licensing conditions, and even obtain a licence (Koskinen-Olsson 1999).

On this point, we must repeat that such a registry, at least in conventional copyright theory, would merely provide evidence of copyright and would not by itself constitute rights. It has traditionally been held that copyright is born with the creation of a work, not with its registration. A global copyright registry would therefore provide information only on registered works and not on all legally protected works. If such a registry were to be useful, then only works registered in it should be protected. This would amount to a further structural amendment to copyright, which would then be born, at least as far as circulation on the Internet is concerned, only when it is registered in some local or regional office connected to the global registry.

## Conclusion

The legal system does not seem to be adapting as swiftly as it should to the challenges of the information economy and society. One response to these challenges has been to insist on Internet self-regulation.

It is in the relationship between the Internet and copyright that this discrepancy becomes obvious. The traditional categories of author, originality, reproduction, communication, import, integrity, fair use and private copying do not hold up when they are applied to Internet works.

Some of the responses to this discrepancy have included the design of technical protection systems against copying, global copyright registries, introduction of criminal penalties for piracy, and discussion or issuance of new rules, such as the WIPO Internet treaties or the US Millennium Act.

These responses, however, fail to address the central problem: the nature of digital information and the technical and social implications of its circulation over the Internet. The intention is to take laws that were designed for analog information and apply them forcibly to digital information. The result is frequently to distort such laws and render them inapplicable.

What we need, then, is to redesign or create laws that will address the rights of authors, performers and producers while striking a balance with the rights of Internet users, fair use and the rights to the information and culture that the Internet provides.

In this process, care will be needed, in particular, to guarantee educational use of the Internet by libraries and researchers, to allow fair use of databases and reverse engineering of software on the Internet for research purposes, and to develop new systems for registering and compensating rights in ways that are appropriate to the digital environment of the Internet, thereby fostering its growth and its democratic use.

Those who are committed to projects for democratizing the Internet in Latin America, as well as educators and researchers in general, must pool their efforts and forge alliances in support of appropriate policies and legislation. The WIPO Internet treaties, the subregional integration schemes and the Free Trade Agreement of The Americas are all potential scenarios where action should be pursued. Organizations devoted to protecting the rights to information, privacy and the freedom of expression over the Internet in the United States and other industrialized countries may turn out to be valuable allies.

## Notes

1. Lawyer and political scientist, currently teaching economic law at the Ecuador campus of the Universidad Andina Simón Bolívar in Quito.
2. The simile is relative and therefore debatable, because there are major differences between common property and intellectual property, which is time-bound and characterized by inherent limitations and intangible objects.
3. *Usos honrados* is the equivalent in civil law of "fair use" in common-law countries.
4. This statement must be conditioned by the fact that, if there is to be a monopoly, the exclusive right conferred by intellectual property must eliminate competition in a market for a specific product or service (the relevant market), for which there is no substitute product or service.
5. According to Susan Sell (1998), this contrasts with the comparatively greater effectiveness, reflecting the greater interest of national industries, that has been achieved in the enforcement of antitrust legislation.
6. Other important documents include the Bangemann Report, the European Community Green Paper, and the conclusions of the Stockholm Group.
7. Neighbouring rights are rights related to the communication of works protected by copyright. They include economic and moral rights to the public communication of works by performing artists, producers of sound recordings, and broadcasting organizations.
8. In fact, such information may or may not be subject to previous copyright. If it is not, it is because the information was taken from the public domain, for example a collection of extracts from legislation. If there is preexisting copyright, such information will be protected as far as those previous authors are concerned, for example in the case of a database consisting of extracts from encyclopaedias.

9. We refer here to the European Community Common Position (EC) No. 20-95 for a Community Directive on the legal protection of databases. In a similar vein, WIPO has proposed a treaty on the *sui generis* protection of databases.

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# Public policy and the Internet

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# Towards a model of franchises for community telecentres in Latin America

Scott S. Robinson

## Introduction

The short-term outlook for the growth and consolidation of community telecentres in Latin America is not very promising. These institutions, still weak and struggling with inadequate business plans and relatively closed information and communication technology (ICT) product markets, offer the public a variety of digital services, training and local content development, at modest costs. They are widely thought to be useful catalysts for social development. The factors working against their survival are many, and the organizations and individuals committed to this kind of "orgware" must analyze the various related components: first of all, the context of digital services markets, the profile of public policies, and the emerging culture of cyber cafés in the region; secondly, the heterogeneous modus operandi of existing telecentres as well as the risks facing them in the current environment and down the road, the respective institutional configurations in support of initiatives for spanning the digital divide, and a profile of key players in the private sector, government, multilateral institutions and civil society; third, the need for viable business plans using present-day or future technological options in addition to appropriate incentives for the users of today and tomorrow. The purpose of this essay is to review this landscape and to contribute to the debate swirling around the Internet (why? for whom?), as well as to suggest a hybrid model for franchising community telecentres in the region.

## Background

It is a fact that the misnamed digital divide is widening in Latin America today. That so-called divide has nothing to do with "digital" per se, but refers instead to the growing socioeconomic polarization that is taking us back to the status of a postcolonial dual economy, with a few rich people who are connected to the Web and many more, the poor, who are not (in Latin America today, the ratio may be 96:4).[1] This landscape varies depending on the transparency and the degree of openness in the telecommunications sector

and the corresponding level of prevailing competition. There is no doubt that regional elites constitute the first generation of Internet users and that they are making increasing and effective use of it as a tool for work and communication. These dominant sectors are already well plugged into the Internet and are increasingly capable and comfortable in using it in their plans for investment and maintaining their historical control. But the growth of connectivity and its productive and creative use among lower-income groups have turned out to be a much slower process than was predicted during the heady days when the Internet first took hold in the region in the late 1990s, and it is here that we must focus our analysis and our concerns about the future of relevant public policies.

We are currently witnessing the gradual concentration of the global and regional markets for the supply of digital technology and services: trunk carriers are expanding their networks in the region, and new firms are arriving, flush with working capital, such as Telefonica de España and America Online (AOL), while at the same time there have been a series of mergers between domestic and foreign firms and a slowdown in the pace of privatization of public enterprises, compared to the initial stage of the Internet's expansion in Latin America (1995–2000). This is happening at a time when the US economy is slowing, with a concomitant and dramatic deceleration in the telecommunications or "dot-com" industry worldwide, together with a sharp fall in the value of their shares on the New York NASDAQ market.[2] The result has been recurrent employment cutbacks and the failure of digital start-ups, as well as a distrust of investing in new digital business ventures. And yet, paradoxically, the number of digital service users in the region is growing strongly.[3] But how can this pace be maintained, given the profile of the new urban user in Latin America and the setting of expensive credit and reduced purchasing power in the market for Internet-based services? We may expect that the recently observed growth in the region will shortly come to a halt, as existing urban, middle-class markets are saturated, and that it will be impossible to expand the user base among low-income and rural groups, given current costs. These are the facts of life in the new regional market, which is dominated by transnational corporations with their greater financial capacity, their control of leading-edge technologies, their aggressive policy for negotiating concessions in protected markets, and their ability to wait out temporary limits on demand and increases in investment costs. The first arrivals in the regional market, those that established their names among first-generation users, either as hardware, software or service suppliers, are the ones that have the best chance of staying in business at a time of shrinking capacities to pay and consolidation among service providers. And these firms are not local – they are transnationals, or joint ventures with domestic companies. This is not surprising, but it should alert us to the speed at which service providers are concentrating and to the growing privatization of Internet content and delivery.

We are faced, then, with a situation in which planning for the commercial environment is being shaped by strong international and regional forces (i.e. national elites) that have conspired to lay the groundwork for what we may call the future "digital mode of production". In effect, this refers to the legal framework in each country that allows connections to the digital backbone of the Internet, clear rules of the game for businesses that can afford the high entry costs that leading-edge technological development implies in terms of investment in technology and licences, the proportions of domestic and international shareholding interests, interconnection charges, compulsory links to the respective national security apparatus, and even the tax benefits for those who are the first to market. I suggest that there was a process of accommodation among capitalist groups in the middle of the last decade, just when the Internet proved that it was in Latin America to stay (thanks to subsidies for connecting public universities, which turned out in fact to be hidden subsidies for private firms in some countries). Although it has yet to be documented by contemporary historians, this process involved a series of discrete seminars within the private academic institutions (many of them religiously affiliated) that are training the executive class for today and tomorrow, where participants analyzed this new technology and the legal framework that would suit the interest of strategic groups in each country, and then worked out the terms of negotiation with digital technology suppliers and foreign financial partners. With few exceptions, the national elites did very well for themselves, hiring the advice they needed to understand the new playing field at this key point in the transition to the digital mode of production.

Over the last five years, we have witnessed the approval of national telecommunications laws, the creation or strengthening of regulatory bodies for this new services market, the appearance of the first companies supplying these digital products in their domestic markets, the introduction of investments necessary to provide connections for clients who are able to pay (a process that is now nearly complete), and the consequent absorption of the computer and information culture by the elites who run these businesses (and, arguably, the countries themselves). These elites have been preoccupied with revising their strategic business planning and positioning themselves within the new international division of labour. Yet many people recognize that there can be no mass market for these digital services in their countries, where broad segments of the population are cut off from participating in this global process because of their increasing poverty and their geographic isolation. What we have is a revisionist recasting of the current model of development.[4]

One outcome of the current shrinkage in the market for digital services and products – the "dot-com crisis" – is that venture capital has dried up,[5] and at the same time there has been a maturing of the market among the regional elites, whose capacity to pay or finance allowed them to incorporate

digital services into their various commercial and financial interests during the first phase of Internet expansion in Latin America. But bringing connectivity to people in low-income neighbourhoods and rural districts does not offer the same rate of return. In other words, private initiative, which is always seeking to expand its markets, looks with a jaundiced eye on the market potential of mass connectivity. That segment of the population simply does not have a respectable degree of purchasing power, whereas healthy profits can be had in better-off urban areas. And that segment's purchasing power is unlikely to improve when the regulatory environment promotes the privatization of ICTs, when the public sector is withdrawing from unprofitable investments that increase public borrowing or fiscal deficits, and when the income of broad sectors of the population is shrinking with the cyclical crisis in regional capitalism. We may expect that constraints on the growth of the consumer market for digital services will lead to greater concentration of companies, which will be controlled by megacorporations in the new digital environment. In this scenario, these companies may well reduce the cost of equipment and connection for mass markets, mostly urban, national or regional, because they can amortize their investments over a huge market of users and clients. Moreover, the historic inability of regional economies to provide dignified employment for available manpower has led the best and brightest people to emigrate, and their remittances serve to augment purchasing power back home.

The regional pattern of migration, which used to flow from rural areas to urban centres, is now assuming the proportions of an international diaspora (of which Mexico,[6] Ecuador, El Salvador and Guatemala are outstanding examples), with the result that some economies now live from remittances while marginal regions suffer a continued brain drain. In addition to Central American countries (with the exception of Costa Rica, which receives immigrants from Nicaragua), Ecuador has exported three million of its citizens over the past four years ,while broad regions of Colombia and Peru are sending people to the United States and Europe (Spain, in particular). There is a similar pattern of migration within the countries of MERCOSUR (Mercado Comun del Cono Sur - Southern Cone Common Market), where the major poles of industrial and urban development such as Sao Paulo and to a lesser extent Buenos Aires are reproducing the same pattern of migration and remittances. This trend has reshaped rural areas throughout Latin America, and few regions have escaped the process – it has an impact within rural villages and the "smaller provincial towns" (as city dwellers disdainfully refer to them). There are four striking aspects to this phenomenon:

1. Human capital in the form of enterprising individuals is increasingly scarce, which makes it difficult to strengthen the reduced social capital remaining in these communities.
2. Young women have taken advantage of the new educational possibilities that became available during the last generation and are

assuming positions of local responsibility, something that was previously unheard of and that to some extent reflects the fact that their brothers and male cousins have left, and this is transforming inter-gender power relationships in these traditional settings.

3. The flow of immigrant remittances involves very high transaction costs but also offers an opportunity to create a network of telecentres and microcredit institutions serving migrants.
4. There is a glaring lack of attention to this process, an indicator that the still-prevailing model of industrial development is being regionalized, but that national states are failing to take advantage of digital economies of scale through appropriate public policies. Proposals to this effect, however, are already emerging from civil society and universities.[7]

As we might expect, cultural changes are occurring within these traditional social environments, in rural communities isolated by rugged topography, in the shantytowns "behind the cathedral", in our city centres, and in the vast suburban peripheries of our regional megacities. In the first place, we find a better balance between men and women in the teaching body, after at least two generations of effort, within the stagnant bureaucracy of public primary education. These people are committed to their communities, but they are stymied by the lack of personal opportunity, the corruption and negligence prevalent in the working hierarchy, and the fear of taking initiatives that could jeopardize their retirement benefits. We also have a weak network of health centres run by nurses and doctors whose efforts to maintain a semblance of public health are truly heroic in settings where the budget for the basic care package is spent on administration and not on providing medicines and services to those who need them. It is common to find a new computer on the desk of the regional health officer, but without connection to the Internet or any information network designed to meet his or her needs. Nurses have no access to the information they need for dealing with new phenomena such as the AIDS that returning migrants spread among their spouses. Middle-level municipal managers have no access to legal information pertaining to their functions or to any digital maps that, with the proper training, could be used for managing natural resources and property registers in ways that might accelerate the collection of needed local tax revenues. And all of this is happening in a local setting where the age-old feeling of community, as found in voluntary work, threshing bees, ***mingas*** and ***tequios***,[8] is in daily retreat before the onslaught of secularization and the fragmentation of the primordial community space.

Another phenomenon, of even greater concern for the future social outlook, is a palpable reduction in philanthropic funding for the experimental projects that community telecentres still represent. As the big conglomerates see their earnings decline and even turn to losses, they cut back on their philanthropic contributions (e.g. Hewlett-Packard's World e-Inclusion

programme[9]). In short, profits are lower and so there is less money available for philanthropic projects, the portfolio value of international foundations is declining, and there is hesitancy in allocating the funds available in some developed countries' Social Trust Funds for development projects such as the G8's Digital Opportunity Task Force (DOT Force) project.[10] This discouraging picture, together with doubts about the future sustainability of telecentres, the only generic model for providing information services to digitally deprived towns and neighbourhoods, suggests a likely contraction in future support for community projects that have failed to demonstrate their capacity to prepare and prove a business model that is sustainable over the medium term. Moreover, these international bodies are not playing square – on one hand, they profess to share a commitment to sustainable development (which is still a theoretical postulate, but one that will surely involve intensive information consumption needed for controlling the many variables), but at the same time they show little stomach for putting pressure on national governments ("we cannot violate national sovereignty") whose policies, or at least their uses and customs, in practice contradict or stifle the success of projects "supported" with international public funding. These bodies have lost their credibility with the non-governmental organization (NGO) community, which is becoming increasingly numerous, active and, I wager, angry.

Nor is the role of multilateral financial institutions much cause for enthusiasm. The World Bank has a window (with limited resources, cumbersome procedures and discretionary decision-making) for financing innovative digital projects (InfoDev). However, despite intensive internal debate over the future of the institution with the arrival of the information society, and the launching of a few promising projects (Barrio Net and WorldLink, for example), the strategic weight seems to have shifted to the controversial Development Gateway,[11] a project that consists of a megaportal to the Internet to "solve development problems by sharing high-quality information from local and national sources, tailored to users' needs by topic and community"[12] for a set of countries and NGOs. One of the many criticisms levelled against this expensive endeavour focuses on the diversion of funding into a databank that simply duplicates the efforts of various other organizations, including commercial sites, in this way restricting the opportunities for community telecentre promoters, among others.[13] Many of us who have voiced criticism of the Gateway project consider it a betrayal of the cause of universal access to training. This issue of the World Bank's announced priority digital focus is far from trivial and would seem to be consistent with the profile of the new digital mode of production noted above. Aware of the rising opportunity cost to the Bank of letting NGOs share in the resources it can mobilize, its managers have decided to channel these funds to their own Gateway, rather than dealing with problems of connectivity and relevant content creation. This reduces opportunities and funding for NGOs themselves and shrinks the field on which they can play and negotiate with other players. It would seem that the Bank is paying little heed to the

criticisms that emerged during the public consultations. There is a special audacity behind the World Bank's Development Gateway, in using the Internet to concentrate information, with a supposed value added, and the result will probably be more useful to the public and private sectors than to the social sector, which has fewer analytical tools and skills at its disposal.

Then there is the Inter-American Development Bank (IDB), which has a larger presence in the region but to date no clear policy for the use of new digital technologies. The rest of the family of official international agencies have made no convincing effort to seize the opportunities offered by these new technologies, or they have limited themselves to managing small-scale pilot projects of little relevance to regional needs (UNESCO, FAO, ITU, etc.).[14] The upshot is that these relatively insignificant projects reduce the possibilities for different kinds of projects, by "occupying" the institutional space and because of the uncontested legitimacy that United Nations agencies enjoy. There is a kind of institutional territoriality that leaves no room for the good intentions of competing proposals for the use of ICTs in the regional context. The activities of these regional financial institutions have monopolized the menu of options for local government officials, blinkering their perspective and making them unwilling to consider alternative proposals based on unconventional alliances. Such a setting is unlikely to produce innovative projects – rather, what we have is a situation where institutional inability to yield hegemony is still the norm.

Public universities share this view of the new digital mode of production, where the reluctance of government and market forces coexists with a veritable Tower of Babel of papers and prophecies about "development for the information society", distance education, the urgent need for technological training, and reforms in teaching methods, while in fact there are very few workable and concrete initiatives on a national or regional scale. We have a paradoxical situation where public universities were responsible for establishing initial connections to the Internet in many countries, but they have not been able to maintain leadership in applying ICTs to the substantive tasks of higher education or to participate as partners in the development of sound, scalable public policies. The vacuum created by the absence of such projects has left a rich field of endeavour for private universities: the Technology Institute (TEC) of Monterrey, Mexico, for example, has established more than a dozen campuses with sister institutions throughout Latin America (in addition to its 27-campus system inside Mexico), and its Virtual University is the undoubted leader in this new market for online educational services. It is impossible to understand the paralysis of the public universities in this field, unless their leadership is under discreet instructions that it is not cost-effective to compete with TEC and similar private initiatives.[15] The confusion we see today in this area in Mexico, for example, is symptomatic of the duplication of efforts and investments and the lack of creative leadership. It is alarming that the key function of the university in terms of teaching and information should be increasingly a private preserve,

where earning a degree comes at a cost that most people cannot afford. This undoubtedly means that participation in the knowledge society of today and tomorrow will be a function of the capacity to pay, which will restrict the potential student body even further in the near future.

It is in the regulatory framework that we see most clearly how beholden the state is to its elites and how those elites have dominated policies for the development and supply of ICTs in each country. Yet we are of course in what is called the "neoliberal" age, where the play of market supply and demand is given almost divine attributes to decide the distribution of goods, of services and, I fear, of power. Today's politicians make no distinction between economic policy and "political" policies, which they take to be the same thing.[16] Many politicians have gone on to become public business figures, a subtle but key distinction. In downsizing the state, they fail to consider that changes in economic policy require adjustments to political purposes, goals and definitions of the "public good". National governments in Latin America today have gone from being promoters of development to being protectors or guardians of suppliers, their own and others, in established markets, while at the same time they regulate the rules of entry and serve as elegant doormen for new players, with the proper ties, introducing innovative products and technologies. The absence of useful, timely and reliable information and the lack of transparent procedures in regulatory bodies or within the administration where telecommunications policies are designed have become the rule today, rather than the exception, in all countries. We hear polished speeches and read written promises about "universal access" and connectivity,[17] but in the end the political priorities are to recycle the inherited debt, to arbitrate between the interests of influential elites and, as far as possible, to protect national financial and commercial preserves, to which we must now add the new telecommunications sector. In the incipient democracies of our region, politics as such is no longer a struggle between parties that had some claim to be representative, but has degenerated into electoral competitions that are played out with rhetorical and symbolic pyrotechnics on the omnipresent television screen. It is today's new, young voters, raised in front of the television and schooled in second-rate public education systems, who determine the outcome of presidential elections (look at the recent votes in Mexico, Peru and Venezuela).[18] Digital demagogy, with its promises of development through connectivity – e-government, in a word – dominates the political refrain in a region still submerged in a profound economic and cultural duality between rich and poor.

While national economies flounder and elites shore up their positions regionally, together with their financial and commercial partners,[19] and while the new class of politicians, apologists for the sacred market, fiddles with austerity plans, "redimensioning the state" while privatizing what remains, and cutting back social programmes, technology is advancing at an inexorable pace. Two-way satellite access to the Internet is a reality today, but it is still not available in wide parts of Latin America because of obstacles in the

national regulatory framework and the impoverished rural population's inability to pay.[20] It is clear that this new escalation of connectivity poses a threat to domestic suppliers who enjoy conditions of oligopoly in their respective markets. A microregion can now be "wired" from geographically centralized access points using high-speed fixed wireless modems or microwave units connected to a small-scale satellite antenna located in the middle of the region. In Mexico, these technological options have become available much faster than official authorization and the capacity to supervise the new services offered by distributors who, if not pirates, are operating in the legal grey area as far as these leading-edge technologies are concerned. We can realistically imagine a regional situation where the purchase and installation of these new connectivity instruments runs ahead of "market supervisors", thereby producing even more chaos in terms of frequency saturation and the flood of cheap, low-quality equipment, where every small-time drug trafficker can set up as an Internet service provider with satellite access and sell connectivity to his neighbours. With national policies failing to keep pace with technological change and with the growing demand for access, fortified by the new breed of television advertising that refers constantly to the Internet, we also see the proliferation of cyber cafés, licensed or not, taking advantage of various options for connectivity. This is a process that can be found all over the region today.

The "cybercafeinization" of Latin America is today in full swing.[21] This phenomenon has many ambiguous if not disturbing implications from the viewpoint of community telecentres. In the first place, it reflects a demand induced by television and fashion as well as the pragmatic risk-taking of small entrepreneurs.[22] At the same time, it reflects the lack of policies on the part of governments that have, irresponsibly, I feel, left it to the market to provide universal Internet access. As long as demand is growing, the digital products and services industry is very happy with this strategy, but the industry too may have some doubts about the vagueness of public policies. The current hands-off approach favours them to a certain extent because public demand for access to digital services can be readily satisfied with a finite number of cyber cafés (which are approaching the saturation point in many towns and cities). Next, we can expect to see (in perhaps two years) a saturation of the demand for equipment, peripherals and services, and yet they will not have reached the mass consuming public because of the still-high cost of computers and connectivity. What is worrying about this picture, already visible in the region, is the consumption model that it represents, slavishly duplicating the strategy of commercial television, which successfully developed a truly mass audience of passive consumers who sit at home watching television at whim, and then go out, if they can, and buy what they see in the ads. As I see it, the danger in the incipient but subversive strength of cyber cafés is that they will reproduce this "light" consumption model among users of the few available online instruments – chat rooms, e-mail, music, pornography sites, favourite performers and a bit of passive shopping[23] – and will ignore the enormous

potential of the available technology. What is subversive is the new ***habitus*** of the cyber cafés, whose patrons make little use of educational and learning opportunities because they have no culture of, and few incentives for, seeking information and transforming it into knowledge. We must not dismiss the notion, however Machiavellian, that national elites prefer this kind of access and consumption over the option, perhaps apocalyptic, of people who are connected and well informed and insist on their rights and on the public services now denied to them. I would venture to suggest that these elites do not have very solid or deep commitment to truly universal access, and so the second phase of the Internet in Latin America, which is beginning now, could hold some unpleasant surprises.

This is happening at a time when governments in all countries are hesitating, "waiting for the market", or proclaiming and launching pilot projects and announcing "telecentres for everybody".[24] Some countries have got into a kind of race towards "digitalization and connectivity", which promises to divert scarce government resources into megacontracts for hardware and software that are bound to be underused.[25] Do we really need "Internet 2"? Still, it is clear that users who are poor, disenfranchised and still anonymous[26] will not provide the driving force for a sharp expansion in the use of digital technology, nor will they be the targets of training in the use of information, which is essential for collective and individual projects within the rich mosaic of Latin America's cultural diversity. It is true that some youngsters approach the Internet with great enthusiasm, but they are a minority, self-recruiting group from which many are excluded. We must not use as a filter the human curiosity of those who have a few pesos in their pocket and can afford to try out the new cyber café at the corner. The situation requires a commitment and a strategy on the part of government and teachers, which will go well beyond any national development plan. It is government, in partnership with NGOs and digital service providers, that can provide the incentive for expanding the incipient network of community telecentres in line with new coalitions of commercial and institutional interests: in other words, what is lacking is a socially inclusive public policy perspective. But wait a minute! – expanding or extending connectivity may not only mean dampening the class struggle (remember that?) by fostering the illusion that the Internet represents a sure road to prosperity and development, but it can also overcome resistance in the informal economy and in popular culture against integration into the current capitalist model, which is eager to charge higher taxes and to suppress any pockets of resistance to state and corporate hegemony. In this scenario, it is not far-fetched to think that projects for electronic government, for example, may be disguised attempts to rationalize the collection of taxes from those, the majority, who now live beyond the banking system, surviving from day to day with their microbusiness or simply selling in the street.

Why should the creation of community telecentres be a public policy priority? Would it not be cheaper and more efficient to let private cyber cafés

meet the digital service demands of new Internet users? This is a legitimate issue and one that deserves broader debate than it has yet received in Latin America. Essentially, we are talking about our preferred model of development, a normative decision, taking into account the emerging digital mode of production, state and capital alliances, and the still-dominant role of national and regional elites that will continue to protect their interests. As I see it, we stand at a watershed: on one hand, the road sketched out above leads to a continuous widening of the current socioeconomic gulf and will reinforce or take us back to our former colonial condition; on the other hand, a broad network of generic telecentres offers us new possibilities for linking connectivity with social development. We may imagine the following scenario, at a time when the fantasies of science fiction writers of only a generation ago are being fulfilled out there in space: indigenous peoples and peasants, geographically marginalized but socially linked to the proletarian neighbourhoods of major cities and with broad circles of family and friends abroad, living with rudimentary technology, struggling for access to a defective public education that stands in contrast to that offered by private institutions (not to speak of health and nutrition), watching and experiencing from the periphery the algorithm of their growing distancing and isolation from the information and knowledge society. This is the portrait of the new digital marginalization and, as we may suppose, it goes along with the progress of the digital mode of production. In contrast, the other path, that of generic telecentres, addresses the current isolation of low-income groups from the digital resources that connectivity offers, but it implies perhaps some utopian assumptions about the possible demand of the theoretical users, who now frequent cyber cafés while attending public universities and technology institutes (which offer their students Internet access). Moreover, telecentres could help to generate appropriate cultural incentives for those same users (what use is online information to me?) and a transformation of public services that are not now available online (to save people time with minor procedures). Community telecentres offer a series of options and possibilities that have yet to be thoroughly examined. It may be that the initiative has already lost the chance to prove itself, under the onslaught of the strictly commercial cyber café model.

The idea of creating a broad regional network of community telecentres offering generic services and content faces a number of major challenges:

1. The current enthusiasm for the new digital mode of production that favours the few, while leaving out of the loop those who have no connection or those who cannot be trained in time or cannot offer a professional service online
2. The stiff competition from cyber cafés, which implies a kind of official subsidy by omission, given the intensive television and press campaigns to induce the consumption of digital services without the know-how of producing content as well

3. The lack of decisions and binding commitments between the telecommunications regulatory bodies of national governments to require telephone companies to offer discounts and/or local calling to the nearest server instead of charging long-distance rates as they do today, for non-profit initiatives or projects
4. The lack of philanthropic spirit among Latin American telecommunications companies, which are taking advantage of the current boom in urban connectivity but show no sign of recognizing that supporting telecentres would be in their own commercial interest and would improve their corporate image over the medium term, in addition to providing benefits for the people now excluded
5. The growing homogenization of youth culture as a result of advertising, television programming and music broadcasting, reflecting the ideological and commercial interests of the groups in power
6. A series of uses and habits that are holdovers from the colonial era, when paternalism and an individualistic and isolationist local perspective characterized the relationships of power between the lowest levels of public administration and the higher state authorities

This is a new context for national elites and their strategies in the various countries of the region, but they have in common the political influence and advisory clout to adapt readily to the new circumstances of the digital production mode now evolving.

## Current models: reality and risks

One of the striking shortcomings within the Latin American community telecentre movement is the lack of sustainable business models adapted to local needs. There are a great variety of forms and approaches among the institutions generically known as telecentres. The range of examples runs from the community technology centre left over from the final days of the Menem regime in Argentina to a computer with Internet access in a telegraph office in Mexico and a modest facility sponsored by an NGO with minimal equipment, such as can be found in many countries, often paying long-distance dial-up charges for its connections.[27] We may even include the cyber cafés or the offer of Internet services in telegraph offices as a kind of telecentre. To confuse things further, all of these manifestations of connectivity are often considered "telecentres" in the growing literature. This great potpourri of telecentres is maintained in different ways: with government subsidies, with help from international philanthropic organizations, or as small and underfunded businesses that are simply ignored in the national telecommunications plans and regulatory framework.[28]

It is important to distinguish real telecentres from what we may call fake telecentres. A true telecentre is a point of access to the Internet, generally

sponsored by an NGO or a local NGO-led alliance, that offers training, creates social awareness of how to use the various kinds of information available over the Internet for dealing with local problems, and has what we might call a "local heart". Looked at in this way, the telecentre is much more than a cyber café, although they both offer something in common, which is connectivity. A telecentre that forgets its social purpose and local roots can become a simple cyber café, but the reverse process is not so easy or frequent because it implies a radical change of vision for a cyber café owner to transform his or her establishment into a telecentre with its associated costs, training component and links to community groups. The telecentre can survive as such only if we consider that it adds real value in the current situation of limited, costly and discriminatory access. If information of a generic kind that relates to government and cultural activities is considered a "public good" that must be in the public domain for the public to use, with the costs of access shared by all social stakeholders, then we can be confident about the future of telecentres as described here, on the basis of pilot experiences in Latin America. In other words, the future of telecentres in Latin America depends to a great extent on the value attached to information and access to information by government agencies, the private sector and civil society. Unless real priority is given to access to information in the public domain, which must include educational resources and encouragement to the teaching profession, support for health workers and tools for modernizing local government administration, there will be no change in this very important area. We may note that pressures to privatize information and access to it are increasingly influential and the willingness of national governments to recognize the public's right to information is weak or non-existent. This is a problem in the realm of political culture.

Revaluing information in this way can occur in the context of local communities and their administrative and political microregions (municipalities, provinces, cantons), where local functions have been usurped by the model of the all-powerful state that has recently initiated (or has been forced by its creditors to undertake) a radical redimensioning: today the state is decentralizing its functions, selling off assets, but without offering any of the strategic information or human resource training that the process requires, and this has merely left lower levels of government dependent on the dictates of the "modern" dominant power, often foreign companies. With the growth of citizen demands for access to information about local government activities, the need for what we may call experimental civic education increases. This involves three processes that must be pursued at the same time: providing incentives to use digital information sources, equipping users to access the new and useful body of information now available online, and raising the capacity to understand data and information available as well as to contribute new data so as to generate a qualitative change in local governance. It should be evident at this point that we are talking about a local government model quite different from that of the centralized state, and about the participation

in this dynamic process of a new generation of youths trained in community telecentres. Experimental civic education refers to this process, which is complicated by the number of public bodies whose activities must be coordinated, the identification and provision of the incentives needed to enlist the support of key local groups (students, teachers, nurses and middle-level municipal managers), and continuous training in the related tools and content, mastery of which is a ***non plus ultra*** for all concerned.

From the viewpoint of this suggested approach, and given the currently limited willingness of officials, I fear that much of our effort to create and promote community telecentres today will be directed towards creating cyber cafés or cyber centres, and that any social commitment they may initially have will be co-opted or simply suspended once they realize that it is impossible to sell services and create a critical mass of trained and "aware" personnel to sustain and cover the cost of operation and of providing social functions for the public good. Telecentres designed in this way are complicated affairs, with multiple functions responding to different interests within the community.[29] This proposal, the way of looking at the generic telecentres summarized here, implies a number of changes in the outlook of public institutions, at the municipal, state and provincial government levels, as well as in federal bodies. It also implies confronting and reversing the current trend to privatize information that private enterprises (and some sectors of government as well) are in effect promoting. And it also requires a level of maturity, political courage and negotiating capacity within the NGO community to promote the organizational and technical approach indicated by attracting the required investment from different sources. In effect, while these changes are not utopian, they do require an innovative vision and represent political costs and risks if they are to be thoroughly implemented. As well, they constitute the main task and challenge in our efforts within the incipient community of telecentre proponents within the region.

## The components of a hybrid model

To survive as such, a telecentre requires a number of elements that exist today or are just appearing within the institutional panorama and the market of technological options. But we need to articulate these elements in a new way: to create a hybrid institutional and commercial model that goes hand-in-hand with the expanding right to information and the experimental civic education referred to earlier, a shared or cooperative ownership regime offering connectivity and relevant content with incentives that are culturally appropriate and consistent with contemporary standards of good governance. All of this with political and editorial independence. Is this just another left-wing utopia?

This hybrid model of a telecentre hinges on a series of commitments by the government to and with the citizens: the right to information, the willingness to budget for sharing the cost of access to the information offered,

both that to be found in the public domain and all other available information (which does not necessarily require greater funding, but rather a reorganization of current administrative functions), tax deductions for private contributions to each project, favourable conditions for the registration of non-profit organizations, including eligibility for tax deductions, greater flexibility and harmonization in the regulatory framework to equalize opportunities in all countries so as to create an atmosphere of trust between government bodies, multilateral institutions, private enterprises and NGOs in the collective sponsorship of the project. But the model will still not be viable if it cannot underscore the legitimacy of public goods and regional scaling while being made available in all countries. We must think in terms of a regional market and the potential demand of various groups of users. And if it is to achieve its full impact, the project will require a franchising system for reproducing the generic model, involving financial, technical and operational partners at the community level, where everyone in Latin America can benefit. The opportunity cost of not taking action today will be very high because the current market-driven model for delivering digital services could well become predominant within a short time, effectively closing off this more experimental route, which is also more costly in terms of human resource training and more difficult in terms of coordinating interests. This is the heart of my proposal.

Before spelling out the details of the franchises, we need to review some other elements of the regional context that were not mentioned earlier:

1. Given the regional importance of the remittances economy, it is important to introduce or strengthen microcredit institutions and to upgrade their administrative and technical capacities, which have so far been ignored or dismissed by commercial banks. They should have a proper legal framework and be empowered to meet demands for reducing the cost of migrants' remittance transfers, domestically and internationally.[30]
2. There is a discrepancy between the connectivity possibilities offered by leading-edge technologies, which are increasingly portable, modular, and easy and cheap to install in countries of the North, compared to the pace of authorization in the South for digital services by the respective regulatory entities and the strictly commercial proposals of national groups, who may indeed be protecting what have been to date captive markets saddled with obsolete technology.[31]
3. There is a lack of access, consultation and involvement of civil society on the part of regulatory bodies, many of which are infected with the simplistic euphoria of slogans such as "connectivity will bring us development and democracy" but have no concrete projects that are feasible for geographically isolated and poor rural communities.[32]

These three conditions will certainly affect the feasibility of our proposal in any country.

The franchising system for telecentres in the region is based on the premise that the government and the private sector, and for that matter all stakeholders, have an interest in raising information to the status of a public good, disseminating it in the digital public domain and training the public to make use of available information on public management and resources. It is a question of training citizens and stakeholders in the digital mode of production, of fostering digital literacy.[33] The second premise is that everyone has an interest in cooperating to bring connectivity to rural regions of their respective countries because the weak purchasing power of rural residents, plus the cost of connectivity and the scarcity of qualified technicians, discriminates against this proposal, and this translates into a growing gap between rural and urban areas that will be even more problematic in the future; we assume that this situation deserves an energetic response by the government. A third premise is that there is local demand for communication, information and microbanking services that the new technologies can meet, given the needs of new users who are joining the computer culture in various ways[34] in a setting where the emigration rate is high and constant. The fourth premise is based on the continuing technological evolution of digital services that are making the Internet ever faster, integrating more services into increasingly compact programming and manufacturing packages, all of which are today complemented by satellite access to the Internet.[35] And the fifth premise starts from the fact that NGOs have sufficient management capacity to sponsor and negotiate the alliances that this proposal entails. I recognize that this assertion is problematic because NGOs throughout the region are chaotic in their organization and fragmented among themselves, often exhibiting little clarity in their objectives – in this they are indeed a faithful reflection of the postmodern social condition. These are the premises and the necessary, but not sufficient, conditions for this community telecentre franchising project to succeed. It involves a level of alliances or relationships between partners that NGOs in the region have never as yet achieved, and it requires a consensus on the generic shape of the telecentres, their local services and integration with the objectives and preferences of groups active in the community. Where such groups do not exist, there will simply be cyber cafés.

How would the franchising system operate? The business model can be very rustic – it involves a series of hardware and software options, connectivity options and (the most difficult aspect) "orgware",[36] all financed through an alliance between the government and private initiative through registered non-profit NGOs, with authorization from the Ministry of Finance or the Treasury that will allow them to receive donations while providing a significant tax deduction to the donors. For example, a state agency could subsidize half of the cost of the components external to the community organization, and businesses would receive a tax deduction for contributing the balance. Connectivity costs would be covered with a "social tariff" (cost + 10 percent could be the standard) or, in the case of dial-up services, the call to the server would be a local call and would be charged on a per-call basis and not as a

function of time online. There is also the option of low-cost computer equipment without the conventional and underused computer add-ons (the Simputer project in India and another one developed by the University of Minas Gerais in Brazil offer some promising options). It is clear that the project will rely heavily on the management capacity of the community organization, a problem that is recognized as the Achilles' heel of each project. Every organization involved in this "franchising alliance" will share a contractual commitment to become self-financing after start-up, in terms of the costs of staffing, connectivity, amortizing equipment and training human resources. As to software, these telecentres will use local area network equipment running on Linux and the applications will be increasingly user-friendly. Staff will be given training in maintenance of the local network and the connection as well as the operation of all equipment. For connectivity, these franchises can use the emerging hemispheric coverage of two-way satellite services now in operation or about to be deployed (e.g. Hughes/Direct PC, Tachyon, New Skies, Gilat, etc.).[37] Alternatively, they can devise a hybrid system for achieving connectivity (dial-up, dedicated lines, two-way satellite access, etc.). Each telecentre becomes a potential provider of digital services within its microregion, using a fixed wireless network. The system must be open to commercial relationships whereby telecentres can offer, for example, not only connection services to microbanks but also digital services to individuals as well as video services to schools and health centres, such as those the emerging broadband technologies now allow. In other words, we are speaking of a package of multiple digital services that will fill gaps in the market and that, although they are of little or no interest to existing businesses, nevertheless constitute a public good.

The "orgware" item is a key feature of each franchise: this is the interface between computer-and-information culture and local cultures, and it also gives participating NGOs their negotiating capacity. It involves an awareness that "forming alliances does not mean auctioning or selling off our assets",[38] and those assets in the local context are the legitimacy and credibility of a local body that can mobilize the social capital of the citizenry. These social networks today include clubs or associations of migrants in various places abroad. As well, "orgware" relates to programmes of work, training, operation, administration and promotion within the community where each project or business is located. The key is to recognize that the vitality of each franchise will be a function of its ability to garner legitimacy and meet the needs of different local user groups. For example, these telecentres may offer a platform and training, in cooperation with universities, for creating geographic information systems available to the public and to municipal and provincial governments; it is important to recognize what this implies in terms of managing public information for the administration and planning of different public services, including scarce natural resources, the modernization of local tax systems, and the implementation of development programmes whether they are of the " top-down" or the "bottom-up" variety. Modernizing the entire property

tax system is perhaps the most valuable function (and the proceeds from increased revenue could pay the cost of the entire system).[39] Another component, also in the "orgware" category, is a system of salary incentives for teachers, nurses and doctors within the education and health systems where, in exchange for taking training in the use of telecentres' tools and content, they receive bonus pay and a certificate that will be of value in the labour market. This notion of skills certification through distance education courses implies a radical overhaul of current systems at the national level: the likely economies of scale here suggest that a regional Latin American certification system would be a good idea, although this has yet to be discussed even at the national level in many countries. Finally, "orgware", in my view, encompasses an understanding of the virtues of, and basic training in, open source software and available applications germane to telecentres.

It is likely that the people responsible for community telecentres will be women, as is the case today in the region. This is a key issue because experimental projects now underway show that young women in rural villages and urban ***barrios*** are more responsible, disciplined and trainable in technical subjects and content design. We are witnessing a reversal of social roles at the local level, where, on one hand, emigration has led the more enterprising males to leave for the city or abroad and, on the other hand, the women who are left behind are enrolling in secondary education institutions and are actively demanding greater opportunities for learning and employment. This is evident within the telecentres, among their managers, their instructors and their users. To a large extent, the computer and information culture is being spread by a new generation of young women who are competent, curious and increasingly well trained. This fact has significant implications for the future of many public and private institutions in these communities and in low-income urban neighbourhoods throughout the region.

## The Internet: why and for whom?

There is a document entitled "The Internet. . . why? and what for? Thoughts on information and communication technologies for development in Latin America and the Caribbean" that provides a social overview of "future challenges", "the Latin American perspective", "beyond connectivity" and "the road ahead".[40] In large part, this essay, and the proposal offered here, is a response to that document. The model described here for community telecentres allows for equitable access, meaningful use and social appropriation of ICT resources. It goes beyond connectivity by offering meaningful use of the many resources available and the mechanisms for their appropriation. The proposal is based on existing social practices, in public libraries, schools, health centres, municipalities and microbanks. They share the potential of a strategic vision of communication in the sense that community organizations can move beyond technological fetishism and can focus on content and on civic education; they support the process of democratization and they respect

cultural pluralism in that, through them, information becomes a public good available within the public domain, where its use acquires a cultural value; and this new shared value is consistent with the development of an attitude of social reciprocity and enthusiasm about the creative possibilities of human beings. The training offered in community telecentres turns them into a ***de facto*** extension of the current education system, where priority is given to teaching people to discriminate between data, information and knowledge; they are spaces that avoid the risk of trivializing information while attenuating the current hegemony of infotainment. The critique of the contemporary situation and the proposal outlined here also meet the central objectives of transforming social participation in public policies, incorporating a gender dimension by recognizing that management personnel and many key groups of users (female teachers and nurses) constitute the human backbone of local institutions, and at the same time the operation and use of digital resources allows their impact on community telecentre users to be evaluated.

## Conclusion

This proposal for creating a franchising network for community telecentres in Latin America is intended as an alternative business plan to that of the commercial megafranchises now being planned or launched in the region.[41] There is no prescribed path by which we can join the digital mode of production because that path is negotiable and will evolve favourably as long as there are projects attuned to local cultural realities and demands. The franchising project is a bold initiative, adapted to community realities, independent of the many services offered to various groups of users. The challenges in integrating the key institutional players are great, as discussed here, and no components should be overlooked because the integration of cultural, legal, technological and operational dimensions is vital. In fact, the process is political, in a word, and the proposal may be criticized as utopian, something that can be achieved in the short run only if Latin American social networks and their potential partners, nationally and internationally, undertake to recognize its value, scale and probable impact, while promoting and negotiating its implementation in that light. There are many vested interests that could block the way, distract efforts or confuse players who are unclear or timid in their objectives.

The cultural dimension of this project implies a challenge that deserves a final word: the current coverage of commercial television in Latin America and the continuous bombardment of broadcast messages targeted at young consumers of music and other paraphernalia have created for the first time a homogenized regional culture. Today, all audiences are consuming the same soap operas and pop musical fare, creating fantasies and fetishes in the midst of a minefield of high interest rates, unfair contracts and unscrupulous businesses. The cyber café syndrome merely reinforces this trend. Although it may seem contradictory, it is possible that intelligent appropriation of the

new digital technology could be a strategy for restraining the regional trend to homogeneity and, at the same time, for constructing local community spaces where players can participate with their own resources and ideas in the emerging digital mode of production. But this will not be easy, nor will it happen tomorrow.

## Notes

1. "We see now an ever more extreme separation of a small minority that controls enormous wealth from multitudes that live in poverty at the limit of powerlessness. The geographical and racial lines of oppression and exploitation that were established during the era of colonialism and imperialism have in many respects not declined but instead increased exponentially" (M. Hardt and A. Negri, Empire, Cambridge MA: Harvard University Press, 2000, p.43).
2. News stories suggestive of this profile in the current market include the following: <http://www.techweb.com/wire/finance/story/INV20010510S0004Gerstner>. Services are tech's new driving force. "Services, along with technological leadership, will be the driving factors in high tech, he said, as opposed to commodity businesses. Companies that do not adapt will be marginalized," he added: "You must innovate or integrate." <http://www.techweb.com/wire/story/reuters-finance/REU20010510S0004>: " A slump in the chip and components markets, sparked by a sudden slowdown in demand late last autumn for personal computers and cell phones, is increasingly expected to bottom out this year, but in the meantime profits will likely remain under pressure." <http://www.totaltele.comview.asp?ArticleID=39851&pub=tt&categoryid=0>, Siemens to overhaul telecoms businesses, by Total Telecom staff, May 10, 2001: "German electronics and engineering group Siemens said Thursday it would cut a further 2,000 jobs from its Information and Communications Network (ICN) business, Reuters reported, bringing the total number of jobs lost at the fixed network unit to 5,500. The company also said it would cut back start-up costs at its US broadband and optical networks units to ensure ICN meets profitability targets set last December. Total cost savings at the ICN unit are expected to reach 800 million euros. The latest job cuts follow 2,600 job losses at Siemens' ICM mobile unit, bringing the group total so far to 8,100." <http://www.totaltele.com/view.asp?ArticleID=39654&Pub=CWI&CategoryID=705>. Business in brief – Tough all over: downsizing across the board,
3. TheStandard.com, May 10, 2001, LatAm's net growth strong despite dot bombs, by Juan Carlos Pérez of IDG: " Jupiter Media Metrix has revised upwards its Internet usage forecast for Latin America. The New York-based market research firm now expects the region to have 77 million individual users by 2005, according to analyst Lucas Graves. Jupiter's forecast a year ago called for the region to have 66.6 million online users by 2005. . . What this means is that the woes that have affected the technology sector in the past year – such as

plummeting stock prices, myriad bankruptcies and massive layoffs – have had little or no impact over Internet adoption in Latin America. . . other barriers that could hamper this projected growth continue to exist, including slow connections, high cost of telecommunications services and access devices, and concern over privacy protection and security of online data. . . Graves highlighted that most of the Latin Americans who will be online in 2006 aren't online today, proof that this is still a nascent and very fast-growing market. His company estimates that 21 million people in the region used the Internet by the end of 2000, equivalent to 4 percent of the region's population, but that is expected to grow to 86 million people by 2006, or 15 percent of the population. By comparison, in the much more mature US market, 66 percent of the population will use the Internet by 2006. . . AOL Latin America announced Tuesday that its subscriber base increased to 647,000 in its first fiscal quarter of 2001, ended March 31. . . a company such as AOL Latin America doesn't have to steal customers from its competitors because the growth in new users is so phenomenal." (In terms of overall Internet usage, in Brazil about 60 percent of users are in Sao Paulo, Rio de Janeiro and Curitiba, while 78 percent of Argentine users are in Buenos Aires.

4. Mosco *Political economy of communication: Rethinking and renewal*, London: Sage. 1996, p. 130. "This revisionist argument maintains that business leads the modernization process and that, while nothing should be neglected, it is more important to establish an advanced telecommunication and computer infrastructure for business than it is to create mass communication systems. The new vision calls for the establishment of state-of-the-art digital communication systems that make it possible for businesses operating in the developing world to participate fully in the international division of labour"(Mosco 1996).
5. Consider this recent headline: Venture capital fund losses signal retrenchment. See <http://www.internetweek.com/story/INW20010411S0010> .
6. Mexican Migration Project, <http://lexis.pop.upenn.edu/mexmig/welcome.html>.
7. Rethinking telecentres: Knowledge demands, marginal markets, microbanks, and remittance flows, <http://www.isoc.org/oti/articles/0401/robinson.html>.
8. Communal work in traditional communities of Central America and the Andes.
9. <http://www.hp.com/e-Inclusion>.
10. Global bridges: Digital opportunities, Draft report of the DOTForce, v.2.0c, <http://www.markle.org/seconddraft.pdf>. Memorandum presented by the French NGO side to the Digital Opportunity Task Force, <http://www.vecam.org/dotforce.htm> .
11. See <http://www.brettonwoodsproject.org/update> and <http://www.voiceoftheturtle.org/gateway> for critical reviews of the evolution of the Development Gateway project <http://www.developmentgateway.org>.
12. Source: Development Gateway's draft business plan, February 13, 2001, <http://www.developmentgateway.org> and <http://www.brettonwoodsproject.org/topic/knowledgebank/k2301_babel.html#ref7>.
13. The <http://www.brettonwoodsproject.org> site contains sharp and cogent criticism of the Development Gateway project. The broad public consultation

on the initial design of the initiative can be seen at <http://www.globalknowledge.org>.

14. It is worth reviewing the programme for a strategic regional event of the IDB where it appears to take a position with respect to telecentres and similar projects. <http://www.tele-centros.org/comunidad/tallerBID.html>.
15. <http://www.ruv.itesm.mx/programas/maestria/mte>.
16. <http://www.emayzine.com/lectures/Lapols-1.htm>.
17. Transcript of the remarks of President Vicente Fox at the unveiling of the "digital government" plan for Puebla, during the Second Ibero-American Meeting of Digital Cities (Puebla, May 2, 2001): "Welcome, friends . . . I am convinced that these technologies are indispensable for us if we are successfully to join the global economy. Today one of the principal competitive advantages of any economy is connectivity. To be wired means knowledge and prosperity and taking the lead, and so our societies' access to communication and information systems will multiply the possibilities for human development and economic growth. . . . We must bring connectivity to our remote regions, to our disadvantaged families, to wherever there is poverty, as we have in Mexico, with 40 million poor people who can benefit greatly from this effort to improve government and connectivity."
18. Latin American democracies must assume that their outcomes will disappoint their citizens: Serrat, La Jornada, Mexico City, May 12, 2001.
19. Note the activity of the Grupo Cisneros in Venezuela, in forging local alliances while AOL expands its coverage.
20. On the battle to control Internet satellite access: "Murdoch Gets Rival in Bid for DirectTV – Satellite TV broadcaster EchoStar is making a play to acquire DirecTV from Hughes Electronics Corporation, a General Motors subsidiary. The move, which complicates the bid for DirecTV made recently by Rupert Murdoch's News Corp, offers a two-phase plan that would immediately give GM a substantial amount of cash for a minority stake in Hughes and later seek regulatory approval for a full merger. General Motors is pressed for cash because of keen competition it faces in its North American and European auto markets" (***Financial Times***, May 25, 2001, <http://news.ft.com/ftgx.cgiftc?pagename=View&c=Collection&cid=IXLC078IH7C>).
21. For an interesting discussion, see the article ***Enredo mexicano*** by Antulio Sánchez, <http://www.etcetera.com.mx/pag59ne6.asp>.
22. Consider this comment on junk recycling in the United States from David Brooks, The peculiar ruins of the new economy, ***New York Times Magazine***, May 13, 2001: "We used up the zeitgeist of the 1990's, and now we're trying to sell it off . . . but it's really the spirit of a decade that's being put on the remainder desk. For Sale: One Previously Owned Cultural Moment/Now Slightly Embarrassing. It's goodbye to the epoch – which must have lasted all of seven years – in which people chatted excitedly about free-agent nations, distance being dead, IPO's, the long boom and those dot-com ads during the Super Bowl that showed global children united by the wonders of instant communication."

23. Wired more than ever, <http://www.reforma.com/tecnologia/articulo/087737> (Reforma, Mexico City, April 16, 2001): The seventh cultural and media consumption survey shows that Mexican surfers average three and a half hours a day online and that the Internet is used in Mexico more for entertainment than for work or study.
24. See the announcement of 300 new telecentres in Venezuela at <http://www.el-nacional.com/eln08062001/f-pf1s2.htm>.
25. As one astute participant in online community chat groups has put it: "It strikes me that we are in a computer arms race with each nation vying to make it the greater equal amongst equals. And while each unit doesn't cost millions like missiles and tanks, the consumption of capital is large and the rationale the same. If we don't have it, we will be left in the dust or absorbed or we will become road kill on the information/economic superhighway. The electronic equivalent of 'arms merchants' are using the same tactics that sell F-16's, cruise missiles and kevlar vests" (Tom Abeles, May 25, 2001).
26. There was a glaring absence of reference to any strategy for digital services and tools in the campaign platforms of the three major parties for the 2000 presidential elections in Mexico.
27. Telecentres by country (from the registry at <http://www.tele-centros.org>):

| | |
|---|---|
| Argentina – 1,269 | Bolivia – 1 |
| Brazil – 6 | Chile – 16 |
| Colombia – 12 | Costa Rica – 4 |
| Cuba – 196 | Dominican Republic – 2 |
| Ecuador – 8 | El Salvador – 2 |
| Guatemala – 3 | Haiti – 1 |
| Honduras – 4 | Jamaica – 1 |
| Mexico – 13 | Nicaragua – 3 |
| Panama – 1 | Paraguay – 1 |
| Peru – 20 | Spain – 2 |
| Suriname – 1 | Venezuela – 5 |

    Note the contrast with the more than 500 telecentres in South Africa see <http://www.communitysa.org.za>. The report by Francisco Proenza et al. is also a useful reference: <http://www.iadb.org/regions/itdev/telecenters/index.htm>.
28. See the video produced in 2000, "Telecentres in Latin America", available online at <http://www.americascanada.org/politics/connectivity/connactivities/cangovt-e.asp#telecentres>.
29. "Everyone underestimates the complexity of these centres and overestimates the real need the locals have for the centres" (Steve Cisler, personal communication, May 9, 2001).
30. The People's Savings and Credit Act (2001) approved by the Mexican government while this essay was being drafted is an example that meets these requirements.

31. Note that Mexico City has no cable Internet services, although the urban area has an extensive cable television network. The fact that the dominant telephone company, Telmex, bought a significant interest in Cablevision suggests a plot to delay the offer of high-speed digital services, which has 70 percent of the country's Internet users.
32. It is significant that NGOs have been excluded from official "consultations" on telecommunications policy changes, while at the same time NGOs have failed to put forward any viable proposals. This brings us to the complex problem of the alliances between traditional elites, political parties and the bureaucracy in the still-weak democracies of Latin America, where NGOs, as relative newcomers, are excluded from the traditional formulas of negotiation and power-sharing.
33. For an intelligent and relevant discussion, see K. Tyner *Literacy in a digital world: Teaching and learning in the age of information*, Lawrence Erlbaum, 1998.
34. The following table summarizes the ways of introducing new users to the Internet. SMS = short message service, available in Europe and selected Latin American markets today.

**MUND AMERICAS Internet users advance**

| Cyber categories | (A) Brought to Internet by way of. . . | (B) Use mode preferred | (C) Communi-cation mode preferred | (D) Media mode preferred |
|---|---|---|---|---|
| **(1) Cyber active** | Video games consoles | Wireless | SMS | Music down-load (Napster) |
| **(2) Cyber literate** | School education | PC home | Peer-to-peer (PC/ICQ) | Online radio and television |
| **(3) Cyber attracted** | Self taught | PC cyber centre | Chat | Open radio and television |
| **(4) Modern professional** | Job training | PC business office | E-mail | WWW text |

Categories are flexible and society specific, e.g. a cyber active may be (1A)(1B)(1C)(1D) in the United States, while in Mexico a cyber active may be (1A)(2B)(2C)(1D).

Source: MUND, Mexico, May 2001.

35. "The Nokia Media Terminal device will function as a video game console, an MP3 digital music player, an Internet web browser, a digital TV recorder and a digital TV set-top box" (***Financial Times***, May 14, 2001).
36. This software is available free at <http://www.tele-centros.org>. Also promising is the Simputer ("simple computer") now being made in India, with licences available for assembly elsewhere.
37. <http://www.directpc.com>, <http://www.tachyon.net>, <http://www.newskies.com>, <http://www.intelsat.com>, <http://www.gilat.com>, <http://www.panamsat.com>.
38. L. Stolovich, ***Impactos sobre Antel de los cambios proyectados en el sector telecomunicaciones*** (The impact on Antel of planned changes in the telecoms sector), Montevideo: Telecommunications Workers' Union (SUTEL/PIT-CNT), 2001.
39. This is a point that is hard to translate into convincing arguments for local authorities who, like those in Mexico, share a political culture where anything of value comes from "above" – funding, initiatives, approvals, information. In a system of this kind, officials' field of vision is vertical and not horizontal. And Mexico may not be an exception.
40. <http://www.acceso.or.cr/PPPP/index_en.shtml>.
41. See Net cafés: An English flavor comes to the US, ***Fortune***, June 26, 2000, which profiles a proposed series of cyber cafés for New York City. The model is very exportable.

# The Internet and socially relevant public policies: Why, how and what to advocate?

Juliana Martínez and the Fundación Acceso[1] team

## Introduction

This paper presents some ideas, developed from the viewpoint of a non-profit organization devoted to research and to the institutional strengthening of organizations (CSOs)[2] in Central America, on how such organizations can work more effectively towards their goals of social change. These ideas were inspired by an ongoing work programme of Fundación Acceso designed to encourage a breakthrough in the use of new technologies for social purposes, especially by CSOs engaged in advocacy work, by expanding their use from the purely organizational level to the field of public policies. To do this, we need to identify to what extent, and how, the new information and communication technologies (ICTs), and in particular the Internet, can contribute to the design of policies for promoting social change that will respond more adequately to people's needs and to the agendas of CSOs. It should be noted that ICTs include a broad spectrum of new technologies, practices and means of communication. These technologies converge and rely on the Internet, the most swiftly expanding tool in Central American societies. Therefore, while this paper is focused on the Internet, it will occasionally refer more broadly to ICTs.

This paper reviews and explains the main assumptions guiding this new line of work, as a contribution to discussion both within our own organization and in other organizations in and beyond Central America. These are points for discussion, then, and not formal research results. The ideas discussed here reflect the research work of Fundación Acceso, as well as advocacy experiments relating to Internet policies in Central America, and the cooperation and exchange of ideas that Acceso has engaged in with Latin American and Caribbean organizations, with financial and intellectual support from the International Development Research Centre (IDRC) and in particular its PAN programme.

We shall describe first the challenge that these ideas are intended to address: if the Internet is to serve as a public policy tool that is sensitive to social needs and to greater citizen participation, it will have to be the object of advocacy work by organizations that could benefit from such a tool. We next discuss the current situation and possible sources of synergy between the use of new technologies and citizen participation for social change. Since

the importance of public policies for social change is not a given, this paper explains why and under what circumstances policies constitute a decisive factor in fostering or inhibiting social change. Incorporating the Internet as a public policy tool can be approached from many viewpoints. For this reason, we explain what Fundación Acceso means by a "social vision" of the Internet that can be used and appropriated by people and their organizations. Both aspects relate to the question of "why advocate" addressed in this paper.

The intersection between what CSOs see as socially relevant policies and the potential use of the Internet for strengthening them is the second aspect discussed in this paper. The question here is "what to advocate". We then go on to a brief discussion of government initiatives for incorporating the Internet, highlighting the difference between the kind of incorporation that CSOs would like to see and the things that governments are actually doing.

Given the distance that separates the current from the desired situation, we discuss some questions as to the kind of citizen participation in public policies that CSOs regard as strategic. Among these aspects, one is especially important: building alliances with organizations in the public and private sectors, identifying advocacy channels in light of national circumstances. These ideas serve as input for discerning "how" CSOs seek to influence the public policies they consider relevant.

Finally, we raise some key ideas for making the Internet an object of advocacy: identifying links between social needs and the potential role of the Internet for meeting those needs; strengthening collaboration between advocacy CSOs and CSOs working with the Internet for institutional strengthening, as in the case of Fundación Acceso; and reinforcing the capacity for influencing the use of the Internet, particularly through alliances with the private sector.

We believe that this paper will have served its objective if it sparks debate and helps to make the environment in which CSOs operate more sensitive to people's needs, so as to ensure that the benefits of these new technologies are not limited to a small group.

## Our starting point

Fundación Acceso has for many years been working for the institutional strengthening of CSOs in Central America. One of its areas of activity is strategic communication through the use of new technologies, and in particular the Internet, as a tool for helping organizations achieve their objectives of social change. In this line of work, Acceso is part of a relatively small group of Latin American organizations that have been thinking about and working with new ICTs. These include a network of organizations that have received support from the IDRC to conduct applied research on how to use the Internet for development purposes <http://www.idrc.ca/pan/partners>. This network is a valuable resource for organizations interested in using the Internet for development, as a reference group for collaborative work both in the

preparation of ideas and in the implementation of initiatives. An important manifestation of this community of interests and players exists in the MISTICA virtual community <http://www.funredes.org/mistica>, which embraces organizations, researchers and activists from around Latin America and the Caribbean.

At the same time, most of the CSOs in the region, social organizations and non-governmental organization (NGOs) alike, have become Internet users. One research study now underway at Acceso is examining the impact of the Internet on Central American CSOs and is finding a great variety in their uses of this technology.[3]

Yet, even among CSOs that make intensive and strategic use of the Internet, not all have adopted it as an object of advocacy for fulfilling their objectives. For example, there are women's, environmental and *campesino*[4] groups that use the Internet for communication and coordination. Generally speaking, however, the Internet is not yet part of their advocacy agendas, for example, in monitoring government commitments, tracking resources earmarked for various target populations, or co-managing policies.

If it is to become a real tool of public policy, sensitive to social needs and greater citizen participation, the Internet will have to become, first of all, an object of advocacy by organizations that could benefit from this tool. It is on this challenge that the ideas discussed below are focused. The general context in which this advocacy strategy will unfold poses some major questions about whether the Internet can help to create more just and equitable societies. For the moment, the use of these new technologies seems to be limited to a few sectors of the population, thereby aggravating existing social inequalities. Elements of this context are summarized below as a general framework for CSO action.

## Citizen participation, social change and new technologies

Latin American societies today face both new and long-standing social problems. High levels of poverty and insecurity, growing inequality in access to goods and services, and the lack of a voice for major segments of the population to express their needs are only a few of the acute problems that millions of people in the region face every day.

In terms of possible solutions, governments are promoting changes to the organization of the state, including decentralization and the devolution of decision-making and public services, and sectoral reforms that range from telecommunications and insurance to education and health.

What role can citizens play in linking problems and solutions? In contrast to the situation of a few decades ago, most of the peoples of Latin America today live under democratic regimes (at least in the formal sense). This offers new opportunities for citizen participation, which is essential for transforming formally democratic regimes into truly democratic ones. This is one of the

challenges facing social organizations and NGOs: to help channel people's needs and to provide voice and solutions.

In this sense, the arrival of ICTs, and the Internet in particular, is both part of the problem and a possible solution in Latin America. On one hand, the Internet can aggravate existing social, economic and political inequalities: the so-called digital divide, for example, has become yet one more factor of exclusion and differentiation among people. Yet, on the other hand, the Internet offers some possible responses: one example can be found in the regional alliances that this tool facilitates.

In all events, one item now on the agenda of CSOs in Latin America is this: to what extent and how can the Internet serve the people and help to build societies that are more just, democratic and caring?[5] Clearly, finding the answers to this question is not easy, but research and political action focused on the social impact of the Internet offer a way to arrive at them.

If it is to tip the balance in favour of socially desirable impacts, policy advocacy will have to address new challenges that are both technical and political. Specifically, this paper explores why, how and where to promote the Internet as a potential tool for improving the capacity of public policies to meet the needs of the people.

What is clear is that the Internet's incorporation into public policies will not be neutral – it will occur as a function of the objectives, outlooks and social visions of the various players involved. To ensure that the views and goals of CSOs are taken into account – something that is far from being the case today – is the real challenge.

The following section discusses the importance of public policies in helping CSOs pursue their respective agendas.

## Why public policies are important

In the first place, we may say that, from the viewpoint of , public policies are important to the extent that they are one of the available tools for meeting the needs of the people. In this respect, what we seek to encourage is that public policy should be seen as a means for solving social problems

There are in fact many possible tools for promoting the individual's welfare. These include the family, work, community, social organizations and, of course, public policies. The special feature of public policies is that they can either enhance or inhibit the capacity of other mechanisms for promoting individual and collective welfare. For example, policies on employment, housing or education can strengthen or weaken communities and families, and thereby facilitate or inhibit personal fulfilment through work or study.

As an instrument, public policies also have the potential not only to resolve concrete problems but also to promote social integration, i.e. to make sure that "everyone is in the same boat", with the same chances to be supplied with water, electricity, education and health services, for example. This sets

them apart from other available instruments for meeting public demands, which are of a private nature or are specific to certain groups. However positive solutions of this kind may be, they tend to divide society into circles of relationships and lifestyles that have virtually no mutual contact, and they exclude completely some major segments of the population, who are effectively "out of the loop". For this reason, public policies are a very important tool, not only in practical terms (e.g. providing health services to the entire population) but also for promoting ethical principles (e.g. ensuring that everyone has the same fundamental rights to work, education or health, regardless of income).

In Latin American countries today, policies are not always so public nor do they always respond to the needs of those at whom they are supposedly directed. The policy arena is one in which stakeholders with particular interests and agendas are continually contending. The more or less public nature of policies will depend, then, on their ability to "aggregate demands" from the groups in question so that they can provide satisfactory responses to the respective interests and agendas.

Finally, if policies are to meet the needs of individuals, they must be implemented in accordance with the criteria of availability, quality and transparency. This means that the provision of goods and services resulting from public policies must meet these conditions:

- Availability: People must have access to services where and when they need them (and not months later, as happens in the public health system, or at a distant location, as is the case with many rural schools, or in exchange for a vote, as with many social assistance programmes).
- Quality: Services must not only be effectively available, but they must be of a quality that meets people's needs in the technically and humanly most appropriate way.
- Transparency: Public policies must be the product of clear rules of the game, applied fairly and without preferences to the entire target population.

What does the Internet have to do with these objectives? What can it do for the quality, availability and transparency of public policies? To answer this question, we shall address, first, the vision that Fundación Acceso has of the Internet, as a means of putting technology to use for social purposes.

## Promoting the Internet: a social vision[6]

Just as policies are a potential tool and a means of resolving social problems, the Internet is a potential tool, among others, for strengthening the capacity of policies to ensure quality, availability and transparency in resolving those problems.

Governments, private businesses, donors and CSOs are all turning increasing attention to the Internet. The assumption behind this paper is that ICTs are here to stay and that they are driven in large part by commercial interests that care little whether they are beneficial to the vast majority of the population. This reality is one of the main reasons for seeking to prevent the Internet from benefiting only one or a few groups and for ensuring that its benefits extend to the bulk of the population.

In such a context, the primary concern is this: how can we ensure that the Internet will have a positive impact on human welfare and that its positive impacts will not be outweighed by the negative ones? Experience in Latin America points to several elements for identifying and encouraging positive impacts. Specifically, on the basis of CSO experience in the region, we may say that if the Internet is to contribute to social change we must go beyond connectivity and promote equitable access, meaningful use and social appropriation of the available resources. This general assertion extends to the search for quality, availability and transparency of public policies.

Before considering how to apply this vision of the Internet to public policies, however, we need to define what we mean by each of these three aspects.

## Equitable access

Equity access means making Internet connectivity available at reasonable prices and providing training in the use of the tools (e.g. connecting to the Internet or making use of navigation programs) so that more people can use them, regardless of their sex, social class, language, ethnic group or other factors.

In Latin America, where barely more than 2 percent of the population is connected to the Internet, strengthening public access will have to be considered a priority for some time to come. However, "being connected without knowing how to use the packages is to have no access. If all we have is a connection, those with the greatest ability to use the connected equipment will be those who, because of their social and economic situation, are already familiar with Internet techniques, or those who have accumulated enough knowledge to learn how to use it with a little instruction" (Camacho 2001: 10).

By itself, however, access to ICTs cannot generate or redress social inequalities. Moreover, much of the content of the Web at this time has nothing to do with the needs or interests of the great majority of the population. If the Internet is to enhance public welfare, then, we must go beyond access and foster its meaningful use and social appropriation.

## Meaningful use

This means making effective use of Internet resources and combining them with other communication tools, such as face-to-face interaction, radio or the

press. The effective or "strategic" use of the Internet requires that people know when to use what tools (e.g. e-mail, search engines, portals) according to their objectives, individual or collective (Gómez and Martínez 2001). "Strategic use implies familiarity with the different instruments that the Internet offers (discussion lists, e-mail, web sites, databases, search engines and so on) and determining, depending on needs and available resources, when to use one or the other either as a consumer or a producer or both" (Camacho 2001: 10).

Secondly, it means knowing how to combine the Internet with other appropriate forms of communication, which we may call "user strategies". "User strategies refer to the way the Internet is incorporated into an existing strategy (national, organizational or personal) of communication and information. In other words, how to combine the Internet with other, more traditional technologies, what resources to use, when, at whose expense, for whose benefit, and all the other considerations that imply a user strategy. Without a user strategy, the Internet will be utilized indiscriminately" (Camacho 2001: 10).

Taken together, user strategies and strategic use permit "meaningful use". Both require certain conditions, such as the ability to produce one's own content and to access useful content in one's own language (Gómez and Martínez 2001).

## Social appropriation

Beyond access and use, the real social contribution of the Internet comes when people appropriate it for their own use. Social appropriation means resolving concrete problems of everyday life with the help of ICTs (Camacho 2001). Evidence of appropriation must be sought not in the use of ICTs themselves, but rather in the changes that they have brought about in the real world (Gómez and Martínez 2001).

"The social appropriation of ICTs for development can be demonstrated in a number of ways, such as: by offering better medical information to patients; improving the quality of education through the use of innovative teaching resources; introducing varied, relevant programming into community radio broadcasting; increasing sales of local products in the marketplace; disseminating the results of local research; and coordinating action among diverse groups with common goals" (Gómez and Martínez 2001: 7).

"An individual (or for that matter an organization or country) will have appropriated the Internet when he or she can ask, first, 'what do I want to resolve?' and, having answered that question, has the resources and knowledge to answer the next question: how can the Internet help me to make effective use of this technology and to resolve the problem at hand?" (Camacho 2001: 9).

The challenge is to go beyond connectivity, which by itself is insufficient, to include the dimensions of equitable access, meaningful use and social appropriation of the Internet for social change. Public policies are a potential

tool for this, just as the Internet is a potential instrument for ensuring that policies meet social needs.

What social use and appropriation of the Internet may mean when it comes to transforming and improving public policies is something that will have to be worked out jointly with other organizations. It will not be possible to foster social appropriation of the Internet if the policy formulation process for incorporating the Internet takes place in isolation from the people and their organizations. Therefore, we need to identify points of intersection between the Internet and public policies, in the framework of a social vision of the Internet, but we must do so together with CSOs and in light of their current advocacy agendas. The ideas discussed below are intended as inputs for such a dialogue.

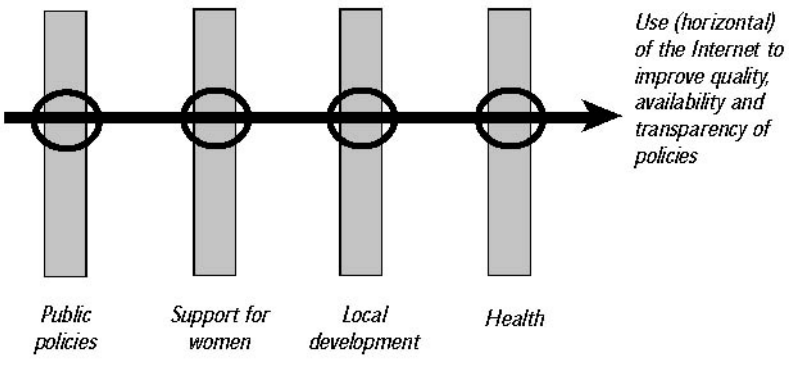
## The intersection between national policies and the Internet

The point here is to consider the role of the Internet as a "potential" tool, the social contribution of which is not necessarily a given. The challenge, then, is to consider how and when the Internet can have a positive social impact if it is incorporated into public policies in such a way that they can respond more effectively to the needs of the people at whom they are directed.

Such contributions may, for example, improve the coverage, equity and availability of social services such as education and health, through the application of distance education or telemedicine. As well, we may think in terms of strategies for improving citizen participation in the formulation, execution, monitoring and evaluation of public policies.

These examples all revolve around strengthening the possibilities of intersection between real needs and the potential role of the Internet in improving the capacity of policies to meet those needs, as depicted in Figure 1. The vertical

***Figure 1. Intersection between the Internet and socially relevant policies***



bars correspond to policies targeted at specific groups (, for example) or at resolving specific problems (health). The ovals represent the possible zones of intersection between public policies and the use of the Internet to enhance their quality, availability and transparency.

This possible intersection between public policies and the Internet, as a function of the social change objectives of CSOs, is what we mean in this paper by using the Internet for socially relevant public policies.

The significant intersections will vary depending on the agendas of the different organizations, and taking advantage of them will depend on the capacity to negotiate and influence the respective government agendas, which are not necessarily consistent with CSO objectives. For example:

- 's organizations may see the Internet as a potential tool for the creation, together with public institutions, of instruments for monitoring recently approved legislation against domestic violence or other programmes to promote access to resources.
- For local development organizations, the Internet may be seen as an instrument for coordination and pooling information from the various government institutions involved on the local scene.
- For NGOs, the Internet may be a useful tool for exerting citizen control over public social spending and over government spending in general.

The objective that these three examples have in common is to improve the quality, availability and transparency of public policies as they affect the population. In some cases, this may imply strengthening existing policies through mechanisms of citizen participation; in other cases, it may imply the creation of new policies. In both cases, incorporating the Internet as a public policy tool must be accompanied by action and pressure from the organizations in question: indeed, what we are talking about is not influencing the use of the technology per se, but the social use of that technology.

These efforts will take place within a context determined by the process of incorporating the Internet into public policies, and one that does not necessarily mean strengthening the quality, availability and transparency of those policies. Below we summarize what is now happening in the region and the extent to which it is helping to create policies that are more sensitive to social needs.

## Current government initiatives: a crucial juncture

In Latin America, and in Central America especially, we are at a crucial juncture in the effort to incorporate the Internet into public policies. What we have, in effect, are initiatives sponsored by groups of individuals within the overall government, or within specific institutions. Generally speaking, there has been no public debate about the priorities and actions to be pursued.

From the viewpoint of CSOs, therefore, these policies are unlikely to be appropriated for now. On the contrary, in fact, CSOs do not for the most part understand the purpose of these initiatives and see them as remote from the needs of the people.

According to the literature survey by Vega (2001), the questions that governments seem to be posing and hoping to answer through the incorporation of the Internet are the following:

- How can we keep abreast of technical innovations and use them for purposes of government (via electronic government) and the economy (via electronic commerce)?
- How can the Internet improve the efficiency, effectiveness and transparency of public policies?

These would seem to be the main considerations behind the growing interest of Latin American governments in the Internet as a tool. When we examine all the activities underway, we can identify some broad lines of action and certain government expectations with respect to forms of citizen participation in the new policies. It is in light of these actions and expectations that CSOs must consider their own agendas and expectations.

Based on a quick review of the Web and of Vegas's work (2001), we can distinguish three principal lines of government action.

### Online information about existing services

This includes informing and consulting, and even allowing transactions to be conducted online: for example, the posting of information on the structure of government, on services provided, on the requirements for obtaining services and, to a lesser degree, on online procedures. It should be noted that the thrust here is to strengthen the provision of goods and services, in contrast to the third line of action discussed below, which is aimed at citizen participation in public decision-making.

It is this kind of action that has advanced the furthest to date in Latin America. Most of these initiatives are still at the stage of posting information, with the expectation that interactive mechanisms will be gradually incorporated for handling transactions, consultations, complaints and suggestions.

Another important set of actions is focused on what, from the government viewpoint, is a necessary condition for public access to online services: connectivity. Several Latin American countries have launched massive programmes to increase the number of people with Internet access. The characteristics of these programmes vary from country to country, and they may be managed at the national or local level, or both.

### Creating new services and programmes

This includes building new technologies into old services, as in the case of primary and secondary education, and creating services that are possible only with the advent of these technologies, such as certain agricultural extension activities.

Activities of this kind are just beginning in the region. Progress is being made in at least two areas of social policy, namely education and health, through the creation of distance education and telemedicine programmes, and the introduction of electronic files, among other initiatives. Generally speaking, these are initiatives of individual institutions and do not represent overall government strategies.

### Citizen participation in managing state and government affairs

This includes consultations with the public by legislators and responding to citizen demands for accountability by government.

This is the least advanced of the three kinds of initiatives discussed here. For the time being, efforts tend to be limited to obtaining public feedback on existing services or on the performance of parliamentarians, for example. Specifically, the facilities currently in place or planned for the near future consist of using e-mail for submitting opinions on policies and policy decisions.

Each of these three approaches to incorporating the Internet into public policies can be conducted, as Vega (2001) indicates, at three levels:

- National: as part of comprehensive central government policy actions
- Provincial, municipal or local: similar to the national level but involving provincial, municipal or local governments
- Institutional: in the case of actions of one or more individual institutions or ministries, rather than the government as a whole

These three lines of action depend on non-virtual social and institutional practices for making use of the Internet to promote citizen participation. In other words, the Internet by itself will not guarantee the quality and availability of information online, nor the suitability of new programs that are created, and the availability of online tools is not in itself a guarantee of participation in the affairs of state and government.

Generally speaking, most of the progress in Latin America is taking place through the online posting of national-level information (as in Argentina, Brazil, Chile and Uruguay) or institutional information (Bolivia, Colombia, Ecuador and Peru) (Vega 2001). There is no sign that the provincial or local level of government has taken such initiatives.

What is not clear about these initiatives is the extent to which they can strengthen the quality, availability and transparency of public services. The Internet cannot by itself transform policies where there are serious problems

of quality, availability and transparency. If the Internet is to contribute to changes of this kind, it will have to be accompanied by real participation from organizations and individuals. It is precisely this component of citizen participation that is lacking in the current process of incorporating the Internet into public policies.

At the same time, CSOs have been absent from the debate. Thus, when we speak of electronic government today, the official version of what it means is the only version in play. Yet incorporating the Internet into public policies is in itself a political act, subject to points of view, interests and perspectives, like any other aspect of politics and government. For that reason, we will not offer here a definition of what electronic government means, for example, and will instead content ourselves with presenting some lines of action and some examples of what is currently understood by the term.

How can citizen participation in public policies best be encouraged? The following are some ideas for addressing this issue and the various strategies available.

## Public policies and citizen participation

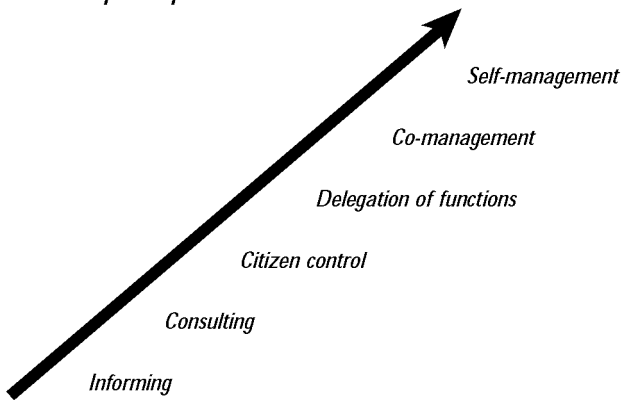
Not all CSOs are interested in influencing public policies, and yet many in fact do so. Farmers' organizations seek to shift agricultural policies and free trade treaties in their favour; labour unions try to change labour, employment and social security policies; environmental groups seek to transform laws and decrees that militate against the sound use of natural resources. There are many such examples. What is clear is that there is a broad set of public policies that at a given time will be the object of lobbying by organizations that see themselves as potential allies of those policies or that feel their own agendas threatened by them.

For those organizations that do seek to influence public policies, citizen participation at the various stages of formulation of such policies is one way of ensuring socially relevant policies.[7] Incorporation of the Internet into public policies is no exception. We need to identify, then, what components of public policies, and what points in their formulation, should be the object of citizen participation, what the expectations of CSOs are, and what actions governments are currently taking in this regard.

In theory, citizen participation can be appreciated with the image of a ladder, the rungs of which represent ascending degrees of citizen involvement, from merely being informed to actual policy management (Mora and Guerrero 2001).[8] Figure 2 on the next page shows a sketch of this ladder of citizen participation, showing potentially permanent forms of citizen participation.

The following is a definition of each of the rungs of the citizen participation ladder. They should not be taken to exclude the possibility, however, that certain forms of citizen participation can apply to more than one rung at the same time.

*Figure 2. The citizen participation ladder*




## Informing

This is the basic level of participation, where doubts are clarified, the scope, benefits and consequences of actions are explained, and fears are allayed. The purpose here is generally to avoid opposition, but not to incorporate the citizen perspective. Governments today are operating at this level when they seek to promote electronic government or electronic democracy.

## Consulting

This involves a limited degree of participation, but it can be strategic when it is binding on decision makers responsible for the policy in question. At this step, decision makers submit the implementation of a given policy decision for public consideration. Costa Rica has an example of binding consultation of this kind involving the new municipal code. In other cases, such as hospital health boards, the consultations were non-binding.

## Citizen control

At this point, power is transferred to for executing policies already established, but only within the scope of public policy (i.e. the privatization strategy is not part of this step). Through this mechanism, can effectively monitor government commitments and insist on the necessary corrections or changes to policy. Generally speaking, the level of citizen participation at this stage is still weak. One example in Costa Rica was the creation of Natural Resource Watchdog Committees.

### Co-management

Here we have decision-making powers shared between government representatives and . In Costa Rica, we may point to the co-management of protected areas as the only concrete example. There are mechanisms, however, that could allow for further progress in this direction, such as collective bargaining between workers and employers. As with citizen control, this is a strategic stage for many CSOs, but it is just beginning to make its appearance in Central America.

### Self-management

This is the highest rung on the citizen participation ladder, where the citizens design programmes, administer them and execute them. Examples in Costa Rica can be found in the indigenous territories and in community forest management.

Depending on the specific policy and the institutional and political setting, the "critical level" of citizen participation may be at any one of these rungs. While for some policies it may be critical to ensure effective public participation in the control of services (e.g. in the private contracting of public services), for other cases the critical level may be that of consultation (e.g. in formulating strategic policies such as signing of the free trade treaties now under discussion).

As well, the critical level for any one policy may change over time, and it is the CSOs that should define that level, since what is at issue is the mechanism of influence and not the end purpose itself. Yet we may say that CSOs are making significant efforts, at least in Costa Rica, to be involved at the levels of binding consultation, citizen control and co-management.

When it comes to incorporating the Internet into public policies, this is still tied up in the rhetoric of citizen participation, where governments are trying to establish a correspondence between democracy and electronic government as well as between electronic government and online information and consultation. To cite only a few aspects, current government efforts can be characterized as follows:

- The relationship is one way, from government to the people; and if a two-way relationship exists or is promised, the "second lane" will be limited to expressing opinions on specific aspects of services. This amounts to participation at the "informing" level, where each citizen, in principle, is to be informed.
- In general, initiatives are "gradualist", i.e. they involve progressive stages in using the Internet in public management. They are "gradualist", however, in the sense that use of the Internet will move

on from purely informative purposes to conducting online procedures, which will eventually replace over-the-counter transactions. In other words, the concept does not refer to moving up the ladder of citizen participation, but to deepening the role of ICTs in service delivery.

- Potentially, these uses of the Internet could strengthen the quality, availability and transparency of public policies. Yet this will not depend on the use of the Internet itself, as if it could somehow magically transform policies, rather but on the kind of input – not electronic but real – that citizens can have through electronic tools.

In short, if the Internet is incorporated into public policies in a context where the citizens have no say as to when, how and why it is done, the prospects for equitable access, meaningful use and social appropriation of the Internet will be severely compromised.

One way of increasing citizen participation at the higher rungs of the ladder is to identify allies within the public sector and to join forces with the private sector. Just as there are many kinds of CSOs within , the public and private sectors are also heterogeneous. It may be possible then to join forces with organizations in one or the other sector.

## Building alliances[9]

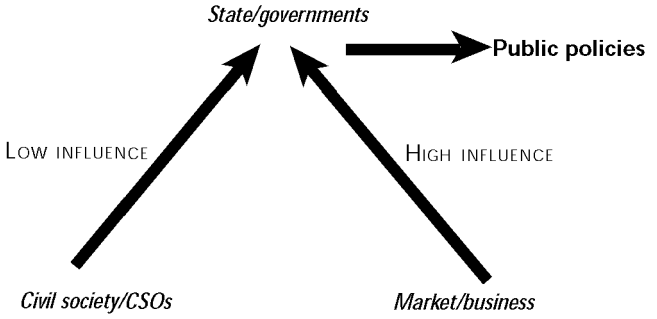
The current incorporation of the Internet is largely the result of lobbying by private businesses to expand their markets for infrastructure, equipment, programmes, etc. The private sector's capacity to influence the public agenda in terms of incorporating the Internet into policies is very important, although not yet very visible. This is not to say that those interests are necessarily negative, but they do reflect a specific agenda that is generally tied to commercial interests in the production of computer equipment and software for government use or in securing government procurement contracts so as to enjoy economies of scale in the domestic electronics business.

Figure 3 represents the current situation in terms of influence over governments: private firms have a great capacity to influence policies, while CSOs have a low capacity to do so. As a result, public policies resulting from government decisions tend not to represent the interests and viewpoints of the different sectors of society.

Strengthening the relationships in the current triangle of players influencing public policies is a requirement for strengthening the quality, availability and transparency of policies. Moreover, it is essential if policies are to be in effect "public", i.e. if they are actually to aggregate the demands and interests of the various sectors of society.

The building of alliances around the social promotion of the Internet is just beginning in Latin America, but it is making progress. For example, in March 2001 representatives of the public and private sectors and CSOs involved in strengthening telecentres held a meeting in Santiago, Chile. There

***Figure 3. Triangle of players current situation***



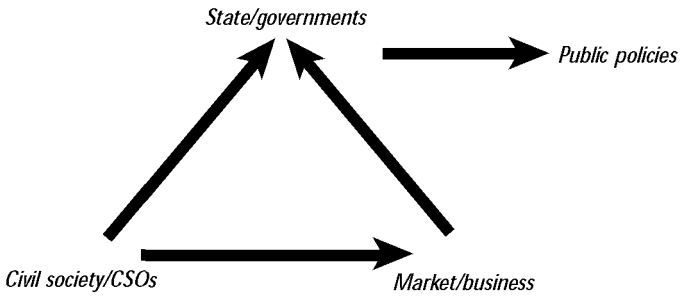

The arrows indicate the direction of influence;
the dotted line indicates weak influence.

they reached an agreement on an agenda for universal Internet access <http://www.elmostrador.cl>. Yet we cannot at this time state that CSOs have anywhere near the degree of influence that the private sector has in promoting the incorporation of ICTs into public policies.

We may say that the triangle of relationships that must underlie any public policy capable of meeting the interests and agendas of the different players is that represented in Figure 4.

In the figure, the arrows in the triangle show the direction of influence. The goal is to arrive at a situation where CSOs employ the opportunities and possibilities of influence that seem strategic in terms of the national context, the type of policy involved and the particular juncture. In short, the idea is to ensure that public policies effectively aggregate interests and agendas from the different sectors of society.

***Figure 4. Triangle of players: desired situation***



Clearly, the desirable relationship among players is subject to the contexts in which the activities are being conducted: a national setting in which governments and policies are relatively strong (as in Costa Rica) is not the same as one in which governments and policies are relatively weak (as in Nicaragua). Similarly, major reforms to public policy as part of modernization of the state may imply different frameworks of action: from complete privatization of telecommunications (as in El Salvador and Guatemala) to the maintenance of a public monopoly (as in Costa Rica).

Incorporation of the Internet takes place within a broader environment and it is that environment, together with the objectives of the CSOs involved, that will determine the most reasonable and desirable advocacy strategies.

As part of our evaluation of the Internet's impact on Central American CSOs, Fundación Acceso examined the national environments in which the Internet is being incorporated at the organizational level. That analysis identified three broad scenarios in terms of the apparent social impact of the Internet on the respective national environment. Each impact points to a different advocacy approach, in accordance with each scenario (Martínez 2001).

### Scenario 1: Rapidly rising social inequalities (examples: Guatemala and El Salvador)

Under this scenario, introducing the Internet deepens and widens the social divide. Most of the population (between 50 and 70 percent) is living in poverty (ECLAC 1998: 273) and private telecommunications services, and the Internet in particular, reach only a very small portion of the population. If this trend continues, mass connectivity programmes will be unable to contain the growing digital divide, which reflects profound social inequalities. The telecommunications sector has been totally privatized, and the state has done little to compensate for the effects of that move in rural and other areas that are of no interest to the private sector. The population with Internet access is less than 1 percent (between 0.6 and 0.7 percent), although rapid growth is expected among groups with adequate purchasing power, thanks to the accelerating development of telecommunications. In this context, with a public sector that has always been weak and insensitive to people's needs, initiatives to promote the non-commercial use of the Internet come primarily from the private sector. To promote the social vision of the Internet, the possibilities of collaboration between CSOs and those private initiatives should be explored, with a view to building a social vision into activities now underway. Such collaboration could include formulating advocacy objectives with respect to public policies in order to reinforce the government role where its presence is essential, as in the incorporation of ICTs into public education.

### Scenario 2: Slowly rising social inequalities (examples: Honduras and Nicaragua)

In this scenario, incorporation of the Internet is deepening and widening the existing social divide. A large segment of the population lives in poverty (between 70 and 74 percent) and does not benefit from telecommunications or Internet services, which are used by a very small sector of the population. The social divide is growing more slowly than in the first scenario because of the domestic impasse in telecommunications development, including the Internet. As in the first scenario, if things continue this way, mass connectivity programmes will be unable to halt the growing digital divide, which reflects enormous social gaps. In this scenario, telecommunications is developing slowly and attempts at partial privatization of public telephone operators have failed. There has been a stagnation of investment, which it is hoped that the telecommunications sector will overcome. The population with Internet access is less than 0.5 percent (between 0.3 and 0.4), and growth is expected to be slow.

The public sector is very slowly beginning to incorporate the Internet into its policies. International agencies such as the International Telecommunications Union have helped to promote the non-commercial use of the Internet through mass programmes. These organizations, in turn, have tried to build bridges with local and national governments. To promote the social vision of the Internet, it would be desirable to support these initiatives and to enlist the private sector and CSOs in them.

### Scenario 3: Reproduction of social inequalities (examples: Costa Rica and Panama)

The introduction of the Internet reproduces but does not necessarily exacerbate existing social differences. The portion of the population living in poverty is considerably lower than in the other two scenarios (between 20 and 30 percent), and telecommunications access is not limited to privileged groups. In this scenario, massive Internet programmes can prevent the arrival of the Internet from reproducing social gaps. In the telecommunications field, the approaches have differed: we find a gradual deregulation in Panama and a public monopoly in Costa Rica. In this scenario, access to the Internet is the highest in the region (1.6 percent for Panama and 3.9 percent for Costa Rica).

In this scenario, the public sector takes the lead in designing and implementing programmes for the non-commercial use of the Internet. Advocacy efforts must continue to focus on that sector for promoting a social vision of the Internet. On the other hand, public efforts have included private participation, for example in equipment purchases and technical assistance. Consequently, it would be wise to reinforce the bridges between both the

public and private sectors and CSOs, which still have a very limited role in the design, monitoring and execution of public policies.

Under any of these scenarios, as Fundación Acceso sees it, one of the great challenges for public policies is to improve their capacity to meet social needs. CSOs can contribute in this regard by offering their perspective as input to government decision makers.

## The intersections between the Internet and socially relevant policies

In the next section, we discuss three broad challenges that must be addressed when advocating the use of the Internet in socially relevant public policies. The key is to define how to work with the Internet as the "object" of advocacy:

(a) To link social needs to the potential role of the Internet in meeting those needs.
(b) To work jointly with CSOs dedicated to public policy advocacy.
(c) To strengthen organizational capacities for inserting a social view of the Internet into socially relevant policies, including in particular the building of alliances.

### Linking social needs to a social vision of the Internet

The objective should be to harness the Internet for improving the ability of policies to meet social needs in a way that respects the criteria of availability, quality and transparency. As a point of departure, we may take people's needs as reflected in the advocacy objectives of organizations working with or on behalf of those sectors. In light of these advocacy objectives, we can explore the role that the Internet might play, once it is incorporated into public policy, in responding to the interests and objectives of these organizations and the sectors they represent.

Identifying the intersection between the Internet and socially relevant public policies requires that those organizations have familiarity or contact with strategic uses of the Internet. Based on conversations with Costa Rican CSO representatives, we offer examples of the kinds of intersection between the Internet and public policies that can be identified through alliances with CSOs:

- 's organizations are seeking to bring greater accountability to programmes of assistance and social advancement for low-income . One tool to this end could be a one-stop online shopping window where people can find out about programme priorities as they exist on paper and the resources actually deployed; all of this accompanied

by non-digital monitoring by 's organizations. Such information is not generally available to the public in a reliable and timely manner.

- Campesino organizations that promote organic farming can insist that the country's foreign trade offices maintain up-to-date online information on markets for their products. Currently, the small-farming sector is "outside the loop" of external trade offices.

### Working together with CSOs devoted to policy advocacy

This strategy goes hand-in-hand with the previous one: it will be impossible to establish strong links between social needs and the potential of the Internet for meeting those needs unless organizations specialized in ICTs and CSOs devoted to policy advocacy pool their efforts to identify and defend social rights and needs.

This strategy consists of building bridges between organizations engaged in thinking and action on using the Internet for social change, such as Fundación Acceso, and organizations that, while they may be Internet users, have not until now considered the Internet as an object of advocacy but have experience in influencing public policies.

Generally, the second group comprises organizations that have varying familiarity with the Internet. The research that Fundación Acceso has been conducting among CSOs on the social impact of the Internet suggests that many of those organizations have Internet access, while a smaller group make "meaningful use" of it and still fewer show clear evidence of social appropriation of the Internet for purposes of social change.

The organizations with which it is most important to undertake collaborative work on the use of the Internet in socially relevant policies are those that already have significant capacity to influence their respective environments, including the relevant public policies. It is of strategic importance to build alliances with this group of organizations so as to bring influence to bear at this crucial time in the incorporation of the Internet into public policies and to demonstrate it to organizations that show less interest in using the Internet in this way.

What an organization like Fundación Acceso can bring to such an alliance is the progress it has made in developing a social vision of the Internet, as well as the results of research and experience in strategic use of the Internet among organizations. There are other Latin American organizations as well that are dedicated to using ICTs for development purposes, and they too can contribute inputs for building alliances of this kind.

When it comes to building alliances, then, the preestablished elements of a social vision of the Internet must be subjected to joint consideration, operationalization and construction with those organizations in order to build a shared vision.

Thus, there will be a need to discuss and define how concepts such as

"equitable access", "meaningful use" and "social appropriation" are to be reflected in pursuing specific social objectives. For example, campesino organizations promoting clean production may make different use of these concepts from that of 's organizations dedicated to implementing international agreements, or NGOs devoted to the protection of children's rights.

Inter-organizational collaboration should lead to an agreed advocacy agenda and strategies for promoting that agenda so as to forge a strong link between social needs and the Internet's potential for meeting those needs.

## Strengthening organizational capacities

In order to foster new forms of citizen participation, organizations must develop their own capacities, including those needed for establishing alliances. The challenge, when it comes to capacity building, goes beyond having a vision and establishing agreements among CSOs – it also implies building personal and organizational capacities for formulating agendas and executing and monitoring policies to incorporate the Internet as a public policy tool and as an object of advocacy towards that goal. This will frequently require not only technical and negotiating capacities but also the ability to exert pressure.

Efforts to strengthen these organizational capacities should be targeted at ensuring that the social vision of the Internet is effectively integrated into socially relevant policies. These capacities include the following aspects, among others:

***Choosing the right time.*** Unless influence is brought to bear at the critical moment of incorporating the Internet into public policies, it will be more difficult to change the situation once it has solidified. Some public policies will be more "topical" and at a more advanced stage of development than others. It is important to make an assessment of this kind when establishing priorities, formulating proposals and establishing alliances.

***"Preparing the ground"[10] with individuals and organizations in the public and private sectors.*** As a point of departure, it must be recognized that neither of these sectors is monolithic and that, indeed, they consist of individuals and various organizations, many of which may be very supportive of the CSO agenda. Building alliances requires that we distinguish between those that are necessary (that cannot be excluded if advocacy is to be successful), those that are desirable and those that are possible (whether necessary or desirable).

***Policy formulation capacity.*** The ability of CSOs to formulate solutions is not a substitute for the work of public institutions and officials. In seeking to influence policy formulation, we are thinking in terms of broad policy guidelines for linking social needs and the Internet's help in resolving them.

***Citizen monitoring and control.*** In many Latin American countries, governments are unreceptive to social demands, even in a formal way; or if they are receptive, we find that social demands are translated into legislation that must then be implemented. The task of the CSOs, then, does not end with the formulation of policies or with the understanding that they will be implemented: continuous monitoring is required during their execution. This capacity requires a combination of technical and political inputs, including technically valid assessments and indicators and political skills for appreciating when agreements are being fulfilled and for raising the alarm when they are not.

## Conclusion

The purpose of this paper was to identify a new challenge: to complement the use of new technologies in CSOs with their incorporation into the current policy advocacy agendas of these organizations in the region. We have therefore addressed a series of major issues for consideration and debate and, ultimately, for the preparation of strategies for meeting this challenge.

As our point of departure, we proposed that, if the Internet is to become a tool for making policies more sensitive to social needs, it must first become an "object" of advocacy by organizations that could benefit from such a tool.

Making the Internet an object of advocacy requires that we address the questions of what CSOs should focus their efforts on as well as how and where they should conduct them. In the first place, we described the current situation as one in which it is particularly important to define strategies for incorporating new technologies into a setting in which, in the absence of appropriate strategies, existing social inequalities are likely to deepen.

In the second place, we explained why we think that public policies should have an important role in improving living standards. We also noted, however, that public policies are an arena for contention among different segments of the population, which means that turning policies into tools that are sensitive to social needs is possible but not a sure thing.

In the third place, we asked what vision of the Internet could be considered a social vision capable of promoting social change and meeting people's needs. We next discussed the need to identify the relevant points of intersection between public policy and the Internet from the viewpoint of CSOs.

Fourth, we described the major government actions now being taken for incorporating the Internet, and we drew a distinction between national environments for purposes of analyzing the impact of the Internet on existing social inequalities, as well as the channels for bringing influence to bear in each case.

In the fifth place, we distinguished the ascending rungs of a "ladder" of citizen participation, which CSOs can identify and prioritize according to

their agendas and their respective environments, and which will be useful in defining their working strategies. The possibility of moving in this direction was shown to be a function of the alliances that can be built with other players in the private and public sectors, establishing priorities in accordance with the national contexts involved.

Finally, we outlined three broad challenges for influencing the incorporation of the Internet into public policies in ways that will meet social needs. Those challenges have to do with linking social needs to a social vision of the Internet; identifying those links together with social advocacy organizations; and strengthening the advocacy capacities of organizations, both in terms of the timing of their interventions and the definition of strategies for formulating, monitoring and evaluating policies.

As we indicated at the outset, this paper will have fulfilled its objective if it serves to spark debate on how to make national environments more sensitive to people's needs and if it has provided some elements for debate on how to complement the use of new technologies at the organizational level with their incorporation into the current policy advocacy agendas of CSOs in the region.

## Notes

1. With financial support from the PAN programme of the International Development Research Centre.
2. organizations are understood here to mean private organizations with a public purpose, including social and non-governmental organizations.
3. For the results that this research is producing, see <http://www.acceso.or.cr/publica>.
4. A ***campesino*** is a subsistence farmer.
5. While it is true that there is a great variety of ideological and political orientations among CSOs, we refer in this paper exclusively to those CSOs that are committed to social change and to the principles of equity, solidarity and social justice.
6. This section is based on Gómez and Martínez (2001) and on Camacho (2001).
7. It is possible that, in some cases, CSOs will feel that they have the backing of the government or of elected representatives and will therefore not feel a strategic need for citizen participation in public policies.
8. This ladder was first designed by Arnstein in 1969 and subsequently adapted by Mora and Guerrero (2001). Taking the Mora and Guerrero ladder, we eliminated the first rung, "manipulation" (since this can occur at any point on the ladder), and we changed the name of the "delegation of functions" rung to "citizen control" (since the delegation of functions is largely relative to this aspect). With a few minor modifications, we have taken the description of each rung from Mora and Guerrero, including several of the examples relating to the environment and to municipal government.
9. The ideas presented here were originally developed in Martínez (2000).
10. The importance of "preparing the ground" for working relations with

organizations is one of the aspects that Fundación Acceso has been pursuing, based on advocacy experience of the National Association of Public and Private Employees (ANEP) in Costa Rica, and specifically during the negotiations between ANEP and the Costa Rican Exporters' Association (CADEXCO) in preparing ideas for a new national development strategy. A systematic presentation of the first part of these negotiations between labour and business is available at <http://www.acceso.or.cr/publica>.

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# The social impacts of ICTs in Latin America and the Caribbean: The MISTICA[1] virtual community and the OLISTICA observation network

Daniel Pimienta[2] and Luis Barnola[3]

## Background

### Communities and virtual communities

Even before the new information and communication technologies (ICTs) imposed themselves as the common vehicle of social relations, there was much discussion about the impact that successive waves of modern technology might have on the organizational quality and capacity of various kinds of communities. After years of debate, and with the support of painstaking ethnographic analysis, it is now widely accepted that, in defining communities, we must first consider the social networks that constitute them, rather than focusing exclusively on interactions within the constraints of geographic space (Pimienta 1993a; Silvio 1999; Wellman and Gulia 1999).

Computer-mediated communications (CMCs) or as we may also call them, computer-supported social networks, have relied on a series of functionalities mediated by telecommunication networks, from Bitnet on through UUCP and arriving finally at the Internet.[4] The social role of these networks has sparked much debate. Since because they provide connections that go far beyond geographical frontiers, they can produce spaces for solid interaction that can eventually foster social change (Pimienta 1993a; Silvio 1999). Although the most enthusiastic (often the older) writers have described CMCs as social networks free of physical markers where there are no barriers of any kind to the flow of communication, other authors have recently argued that the (re)construction of identity in the complex fabric of online environments betrays social stratification in terms of class, gender, age, ethnicity and other determinants of social interaction (and domination) among the players that populate these environments.[5]

Although the implicit internal dynamics of CMCs are extremely complex, the role that civil society organizations (CSOs) can play in appropriating ICTs has been and will continue to be of vital importance in different interrelated political contexts at the local, national, regional and global levels. According

to Ribeiro (1998), the adversarial nature of CMCs had its roots in the California counterculture of the early 1980s that did much to create a political networking culture. What emerged was a utopian vision that would articulate alternative media over a profoundly democratic, even anarchic, platform.[6]

## Civil society and ICTs under the impact of globalization

The context in which CSOs and the new social movements are developing and evolving is one where the phenomena of globalization, together with the process of flexible accumulation and the model of "informationalist" development described by Castells,[7] are rendering large sectors of certain economies, and even whole societies, structurally irrelevant within the current logic of the system. Castells (1996) describes this accelerating process of social exclusion as the emergence of "black holes" in the new information age where, statistically speaking, there is no escape from absolute misery. At the same time, grassroots organizations and national and international non-governmental organizations or NGOs (also called "neo-" or "para-governmental" organizations since they tend to take the place of government agencies weakened by structural adjustment policies and the need to legitimize a representative political system that is collapsing) are faced with the choice of becoming independent bodies that can negotiate the people's agenda freely with the public and private sectors, or else simply surrendering to arguments alien to the neoliberal process, perhaps contributing mechanisms of self-control that the market will use to correct its own excesses (Yúdice 1998).

Yet, with the tactical support of ICTs, the democratization of political issues of global importance is today an authentic component of a common agenda that knows no borders. But common for whom? Where are the new forces or social players capable of truly transforming social injustice and overcoming the lack of balance with our environment that the patriarchal model of unlimited economic growth has plunged us into, at the peril of our very survival as a species? As Castells (1997) and Melucci (1996), among others, have explained, exploitation today is synonymous with "deprivation of control over the construction of meaning" (Melucci 1996: 182) and, since the processes of domination are embedded in information flows, the battle is being fought in cultural contexts where "the building of autonomy has to rely on reverse information flows" (Castells 1997: 66). In this way, language and the process of codification for giving names to reality and organizing its content will depend to a large extent on the production and appropriation of unmanipulated knowledge, resulting from the strengthening of the analytical skills and self-critical capacity of new social players (Melucci 1996, 1998). To paraphrase Castells (1996), the question of who are "the interacting and the interacted" now defines which are the systems of domination and liberation, respectively, of the information society.

## CMCs and CSOs in Latin America and the Caribbean

During the 1980s and until the early 1990s, various groups attempted to appropriate these new technologies and turn them into development tools for reducing the discrepancies between the so-called North and South (as well as the differences between the North that is in the South and the South that is in the North). Yet it was not until the early 1990s that the Internet came into common use among universities and NGOs in Latin America and the Caribbean. Organizations such as the Association for Progressive Communications (APC),[8] an international non-profit network that provides information technology support to CSOs, or Fundación Redes y Desarrollo (Networks and Development Foundation, FUNREDES) played a key role in the region by providing the first connectivity nodes in several countries, together with strategic or methodological models for building national and regional networks (Pimienta 1993b).

A study prepared by Ricardo Gómez (1998) identifying some of the advantages that ICTs have provided NGOs in the region (in particular the first-order effects of e-mail) found little evidence of second-order effects that might have a deeper impact on the organizational capacities of NGOs included in the survey (basically in terms of interrelationships and balanced participation). In the particular case of Colnodo[9] in Colombia, Gómez found that the "nostalgia of community" was the only thing sustaining it, a fact that according to the author did not suggest any common ideal of belonging to a solid global community of CSOs. Gómez concludes that by the mid-1990s the special niche that APC had carved out in the region had dissolved in the explosion of commercial Internet providers that offered services at lower costs and brought with them the mass marketing of these new technologies and subsequently trivialized their content.

Despite the highly optimistic working hypotheses about the positive impact of ICTs on development, it has turned out to be very difficult to estimate their impact on CSOs and users, and at the same time there has been very little systematic effort to analyze the situation comprehensively. We may point to the research now underway by Kemly Camacho at Fundación Acceso[10] (Costa Rica), the preliminary results of which have provided a framework of evaluation that incorporates methodological tools used to study the impact of ICTs in a sampling of Central American CSOs (Camacho 2000). With the help of initiatives of this kind, it should be possible to take steps both to strengthen the tertiary sector and to create mechanisms for a real appreciation of the impact of ICTs on society. On that basis, we can then build strategies to generate a positive social impact in support of the region's development.

Establishing cooperative frameworks and strategic alliances among individuals and CSOs is another key factor in achieving a positive impact of ICTs on social development. This is the rationale for experiments with innovative applications and methodologies in support of group action, which can provide valuable support for the social use that civil society in Latin

America can make of ICTs. Going down this road implies the difficult task of seeking funding from international donors, who are more interested in installing equipment and transferring technology than in promoting "meaningful use" and effective appropriation of these technologies by the players involved. Thus, the conviction that connectivity is an important but not sufficient element for promoting development is one that is common to the researchers and activists in the region who, under the PAN initiative of the International Development Research Centre (IDRC), contributed their experience to the paper entitled "Internet . . . why and what for?" prepared by Fundación Acceso and IDRC (Gomez and Martinez 2001).

## MISTICA: working collaboratively with the Internet

### Process and content

The Methodology and Social Impact of Information and Communication Technologies in America (MISTICA) has successfully established a human network of researchers and social activists in Latin America and the Caribbean interested in the social dimension of ICTs. The project was implemented by FUNREDES with support from the PAN initiative of IDRC and Fondation Charles Léopold Mayer pour le Progrès de l'Humanitè (FPH).[11] Launched in November 1998, the project was formally wrapped up at a meeting in Santo Domingo on March 3, 2001. Although it is now terminated, fruitful exchanges have continued between researchers and activists who constitute the MISTICA network, and this network will now serve as the basis for implementing the project OLISTICA, the Observatory in Action of Social Impacts of ICTs in Latin America and the Caribbean.

MISTICA has experimented with a methodology for coordinating virtual communities, one that combines information and communication resources so as to offer solutions to linguistic obstacles, reduce information overload and accommodate distance participation in face-to-face meetings.

Recognizing that "process" is at least as important as "content" in social movements, MISTICA has sought to strike a fair balance between the objectives of form (methodological approximation) and content (strengthening social groups), and indeed this balance is one of the critical parameters of the project. MISTICA has in this way positioned itself "at the frontier between social research and field action", with the clear goal of combining both aspects in order to achieve coherent results. Far from producing a mere think tank unconnected to reality, the project has sought to encourage high academic quality among activists in the field as an essential prerequisite for systematizing the experiment.

Although this paper will not attempt to analyze the content of the discussions (for further details see Pimienta 2001), we may note that the issue of the social impact of ICTs in the context of globalization is the central motivating theme of participants in MISTICA. Because there has been

controversy within the virtual community about the use of the term impact (because of its mechanistic and unidirectional connotations), a matrix has been devised that better expresses the causal and systemic relationship between ICTs and society. The following "principal axes" of analysis have therefore been taken into consideration:

- Education
- Democracy
- Governance and civic participation,
- Language and culture
- Health

The matrix also includes the following "horizontal axes" superimposed over the above issues:

- Gender
- Socially disadvantaged groups
- The environment

Some legitimate doubts have been raised to the effect that this scheme is still too rigid and that, because it embodies a non-neutral Cartesian approach, it seeks to classify rather than to debate and innovate. At the same time, it has repeatedly been observed that culture and language are concepts that require deeper analysis and that the matrix, in these terms, leaves indigenous cultures and languages subordinate to what are considered dominant languages (unfortunately the experiment's multilingual capacity did not allow translation into any indigenous language).

The debate did, however, achieve a degree of consensus. In the summary record of discussion, a common thread emerges from the multiplicity of views:

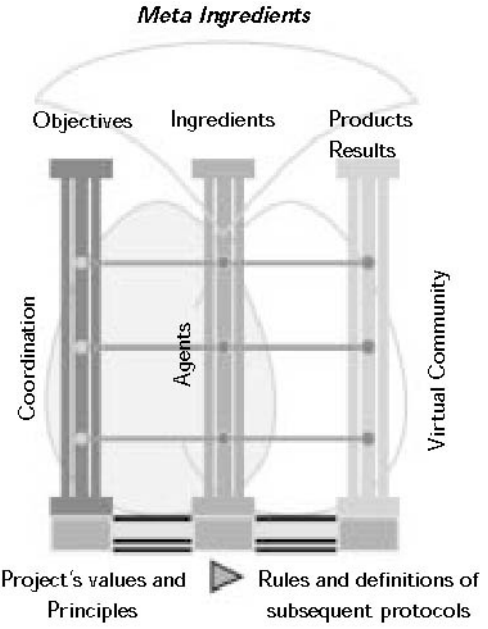
> There is, then, a permanent challenge for a civil society that is searching for an alternative model of development not only to develop its own experiments and instruments (for which the flexibility of ICT offers certain advantages), but also to lobby for its interests and to exert pressure on decision makers. . . . This means that we must work to ensure that ICTs serve to improve living conditions, by proposing alternative models of development that will respect diversity and promote equity, that are in harmony with nature and that will allow sustainable human development (Comunidad Virtual MISTICA 1999).

## The general scheme of the MISTICA project

Figure 1 offers a schematic presentation of the fundamental concepts of the MISTICA project. The three pillars represent the "objectives", "ingredients" and "expected products" from the project, while the oval shapes that intersect in the middle of the diagram represent spheres of responsibility, both for

"project coordination" and for the "virtual community" (VC). The pillars rest on two bases, one situated on the side of coordination and the other on the side of the VC. The first represents the "founding principles" of the project, while the second represents the "VC rules" together with the "definition of subsequent protocols". At the top, in an expandable open space, are the "meta-ingredients", the methodological component of the project.

***Figure 1. General scheme of the MISTICA project***




The following more detailed discussion of these components illustrates the wealth and complexity of this experiment.

## Project objectives

The project had three basic objectives:

1. To strengthen social players using ICTs in the region by working cooperatively and structuring information relevant to this group.
2. To constitute a human network for research and appropriation of ICTs in order to produce and interpret social changes, with the capacity and the information resources to undertake collaborative work.
3. To conduct regional analyses of the social impact of ICTs and establish an agenda of recommendations and proposals.

A series of secondary or methodological objectives accompanied these three principal objectives. They were as follows:

- To design, apply and validate a methodology for articulating VCs and facilitating distance participation in face-to-face meetings
- To create a decentralized information network on players, projects and activities relating to the social impact of ICTs in Latin America and the Caribbean.
- To produce a regional contribution to the "Society and ICTs" workshop of FPH.
- To reinforce management of the Communications and Information System of the Alliance for a Responsible, United and Plural World.
- To define an agenda of priorities for the challenges facing the region in developing ICTs with a view to their social impact, integrating the gender perspective and addressing other disadvantaged groups.
- To conduct preliminary studies and pilot projects for the analysis of ICT impact in the region from different viewpoints, as a basis for discussion during meetings.

## The virtual community

The VC consists of individuals who are willing to devote time to participating more or less actively in the collective adventure of sharing experiences and attempting "distance collaboration". By the end of August 2000, the VC consisted of 215 people.[12] At the outset, the number of subscribers was larger (311), but at the end of the Effective Management of Multilingual Electronic Conferences (EMEC) experiment (when translation and synthesis facilities were eliminated) several non-Spanish-speaking participants, many of them in the United States, withdrew from the list. In terms of gender composition, in August 2002, 65 percent of participants were male and 35 percent were female, a figure consistent with the aggregate gender data on the overall use of the Internet, indicating a slight increase in female participation.

All the messages that have circulated within MISTICA from its beginnings are kept in the VC's virtual memory, which is stored on the FUNREDES web server.[13] At the time this paper was prepared (April 2001), the VC had contributed more than 2,000 messages to the collective discussion. Table 1 shows the number of messages sent to the list up to August 2000, which amounted to an average contribution of nearly two messages a day, which is a creditable performance for a VC of this kind. (We feel that a figure lower than 0.25 might suggest a lack of interest on the part of participants; on the other hand, a rate above 4 could become an annoyance for some.) Table 1 also illustrates the significant growth in the percentage of subscribers contributing messages, compared to January of the same year, although the percentage remains below expectations for a participation-oriented experiment (the figure is, however, relatively high in comparison with similar discussion lists.)

**Table 1. Message contribution by the MISTICA virtual community**

| | *January 2000* | *August 2000* |
|---|---|---|
| Number of members of contributing messages | 70.0 (27%) | 117.0 (38%) |
| Average number of contributions per member | 2.5 | 3.3 |
| Total number of contributions | 545.0 | 1,029.0 |
| Maximum number of contributions per participant | 47.0 | 8.4 |
| **Average number of contributions per day** | **1.8** | **1.9** |

Table 2 shows the number of subscribers by country and region, of a total of 256 in January and 215 in August. The English-speaking Caribbean, Puerto Rico and Brazil are clearly underrepresented, despite special promotional efforts. There has also been a sharp drop in the number of subscribers in North America, as noted above.

**Table 2. Number of subscribers by country/region**

| *Country/region* | *01/2000* | *08/2000* | *Country/region* | *01/2000* | *08/2000* |
|---|---|---|---|---|---|
| Africa | 1 | 4 | Honduras | 4 | 2 |
| Argentina | 22 | 25 | Mexico | 27 | 29 |
| Bolivia | 4 | 3 | Nicaragua | 2 | 2 |
| Brazil | 8 | 9 | North America | 28 | 9 |
| Francophone Caribbean | 10 | 13 | Paraguay | 3 | 2 |
| Anglophone Caribbean | 1 | 2 | Peru | 9 | 10 |
| Chile | 11 | 14 | Uruguay | 2 | 1 |
| Colombia | 10 | 6 | Venezuela | 31 | 23 |
| Costa Rica | 5 | 6 | MISTICA[14] team | 17 | 10 |
| Cuba | 3 | 3 | International agencies | 6 | 6 |
| Dominican Republic | 17 | 13 | Unknown origin | 4 | – |
| Ecuador | 8 | 6 | Oceania | – | 1 |
| Europe | 14 | 16 | | | |
| El Salvador | 3 | 0 | | | |
| Guatemala | 3 | 2 | | | |

Table 3 shows the age distribution of participants. Considering that MISTICA is a community of ICT specialists, subscribers are for the most part young (more than 25 percent are under 30 years of age and more than 50 percent under 38). Yet the trend towards the end of the experiment (as shown in the column for August) showed an increase in the average age of subscribers.

**Table 3. Age distribution of MISTICA subscribers**

| | *January 2000* | | *August 2000* | |
|---|---|---|---|---|
| ***Age*** | *Number* | *Percentage* | *Number* | *Percentage* |
| < 25 | 25 | 9.8 | 17 | 7.9 |
| 26–30 | 44 | 17.2 | 27 | 12.6 |
| 31–35 | 33 | 12.9 | 29 | 13.5 |
| 36–40 | 54 | 21.1 | 46 | 21.4 |
| 41–45 | 39 | 15.2 | 28 | 13.0 |
| 46–50 | 30 | 11.7 | 23 | 10.7 |
| 51–55 | 17 | 6.6 | 23 | 10.7 |
| > 56 | 10 | 3.9 | 14 | 6.5 |
| Unspecified | 4 | 1.6 | 8 | 3.7 |

Finally, the VC model allowed registration in several languages simultaneously. The great majority registered in Spanish (244), followed by English (24), French (15) and only 2 in Portuguese. Considering the great effort that went into keeping MISTICA multilingual, it is disappointing that the proportion of non-Spanish-speaking participants was not higher.

## Project coordination

Coordination of the MISTICA project involved a range of collegial roles. Two central features of the approach to this experiment were to value the human individual as the centre of all activity and to involve VC participants actively in specific undertakings. The general coordination group was strategically important for designing the content while reflecting as faithfully as possible the messages from the VC, in order to keep the process permanently updated; the moderators group had to ensure compliance with established rules to keep the electronic conferencing system operating smoothly; the EMEC group was responsible for synthesis and translation; the facilitation and leadership team had to maintain the pace of the electronic conference, following predetermined agendas; the webmaster was responsible

for the project's web site; and finally, the Participation at a Distance (PAD) group looked after distance participation during face-to-face meetings.

## Project ingredients

MISTICA is much more than a VC. The project was constructed around a number of ingredients that can be classed under the categories of communication, information and action.

### *Communication*

MISTICA was characterized from the outset by a constant flow of communication, both within and beyond the VC. True to its goal of fostering a communication culture that is respectful, democratic and focused on topics of general interest, the project coordinators went to great lengths initially to explain the rules that communication would have to meet, and this resulted in an unprecedented level of discipline and cohesion within the VC. The moderators, for their part, used the EMEC tool (see below) effectively and patiently to ensure that contributions were consistent with the best standards of etiquette in the use of electronic lists.

Recognizing that VCs are not a substitute for physical communities, but rather a potential complement to them, the coordinators held two face-to-face meetings in the Dominican Republic. At the first meeting, held in the beautiful seaside area of Samaná in April 1999,[15] the objective was to finalize discussions already underway within the VC and to put the outcome into an instructional document called Doc-Sam,[16] which was a kind of "stream of consciousness" report of the meeting that took the form of a letter to a fictitious friend about the project. The second meeting, which was held in Santo Domingo in March 2001,[17] established a favourable climate for the gradual transition from the end of the MISTICA project to the establishment of the OLISTICA regional observatory.

Both meetings were experimental in nature, and their objective was to lay the ground for a cooperative working approach among the people participating in the project. As well, they could be called "new paradigm meetings" because they included the following innovative ingredients:

- There was no hidden agenda – there were no objectives other than those that were publicly stated.
- Virtual meetings were held before and after the face-to-face session to establish the basis for the meetings and provide input for the working agendas.
- Participants were selected against established criteria (essentially in light of their participation in the electronic discussion) with special sensitivity to achieving balance in terms of gender, region or topical specialization.

- All documentation on the meeting was delivered well in advance, despite the fact that the selection criteria meant that some elements were identified only shortly before the meeting itself.
- Proceedings were conducted without any hierarchy among participants and in accordance with clearly defined democratic rules (without giving precedence to people in positions of power who might have used this to overstep their authority).
- People not invited to the meeting were able to participate through PAD.
- A summary of discussions was posted on the Internet on the same day as the meeting: in this way, information from the meeting was not only stored electronically but was available immediately on the public web server.

While these were far from a "perfect" meeting, MISTICA succeeded in creating and disseminating an alternative model for synchronizing communication in order to foster a spirit of collaboration in the region, linked to the catalytic role of ICTs.[18]

### *Information*

The way in which the MISTICA information flow was structured was of vital importance to the success of the project. The web site could be accessed in four different languages (Spanish, French, English and Portuguese) and offered more than 70 Mb of information on more than 700 pages stored on the FUNREDES public server.[19] Up to August 2000, the site was visited more than a million times, achieving an average of 5,000 hits per day (this figure is rising: in May 2001, the average number of daily visits was about 8,000).[20] Thus, far from being merely a static depository of information, MISTICA offers a highly organized "cyber library" of contributions from the VC (about 15 percent of the total volume of information) plus access to a great variety of documents representing the results of the project's research and dissemination components, all of which are available on the Web.[21]

The MISTICA clearinghouse (or ***metasitio*** in Spanish)[22] is organized as a database and offers a user-friendly interface for online information about the social impact of ICTs in the region. The database currently consists of a pilot sample with some 100 entries, including a list of researchers, activists, projects, events and institutions. If further funding becomes available, it is hoped that this clearinghouse can become an essential international source of reference (the database was designed so that every contribution is first previewed by a moderator team that selects and organizes the information into different fields according to its particular subject matter).

In addition, a listing of more than 1,000 bibliographic references on ICTs and sustainable development in the region has been published, thanks to the generosity of one of the community's members.

### *Action*

The action component was from the outset one of the greatest ambitions of the MISTICA project. The process of building up a human network and establishing permanent dialogue is something that many people have contributed to very actively. In addition, certain indicators and personal communications show that MISTICA has made an unseen but very significant contribution to social capital formation by promoting "bonding" in small groups within and beyond the VC. This process has been going on behind the scenes, as it were, and even the project's coordinators have not been fully aware of its impact and scope.

MISTICA has sparked another form of action known as Yanapanako.[23] The pilot applications, as they were called, constituted an innovative form of financing for small action-research projects. The selection process involved a competition and a jury consisting of the programme coordinator plus three volunteer members from the same VC, who evaluated the proposals. Initially conceived as analytical studies or applications of methodology designed to evaluate the social impact of ICTs, the selection criteria were later expanded to include the following areas:

- Fostering the empowerment of citizens
- Generating interaction and synergy among players in the field
- Creating spaces of interdependence between sectors of society
- Encouraging the preservation of identities
- Fostering the growth of local autonomy
- Maintaining a high social content directly relevant to existing social processes
- Encouraging diversity and a holistic view of the three horizontal axes (gender, environment and disadvantaged social groups), languages and cultures, opportunities for action, activities and lines of work
- Being proactive, i.e. to produce concrete results in terms of the social appropriation of ICT
- A process of continual evaluation

Nine proposals were evaluated, of which six were selected for financing with approximately US$10,000 each. These projects were located in Argentina, Bolivia, Brazil, Mexico, Nicaragua and Venezuela; and they explored a broad variety of issues, taking a social vision of the use of ICTs: children's rights, indigenous communities, public health, civic participation and electronic governance, the constitution of a VC of postgraduate students working on development issues, and a proposal for participatory action research for establishing a telecentre. Detailed information on each of these pilot applications, including an update on each experiment, technical reports and contact information, can be found at the Yanapanako project-monitoring site.[24]

From the outset, an effort was made to encourage cross-fertilization among these pilot applications, as well as between them and the rest of the community, but it was not very successful in terms of sparking collaboration. The particular nature of these projects, which required a high degree of technical sophistication, taken together with the shifting environment, economic constraints and the internal organizational structure of the NGOs participating in the experiment, meant that many of the results and processes were not socialized in time (as was stated by one of the pilot application managers, who apologized for the fact that his results were late and explained that he did not feel comfortable sharing his particular problems with others). On the basis of this concrete experience, there is a need for further exploration of the conditions needed to create a climate of trust or confidence of the kind that will produce better communication during the execution of proposals on the use of ICTs and in this way, contribute to the success of the OLISTICA observatory, as will be discussed below.

## The meta-ingredients of the project

The methodological component of the project involves essentially the implementation and evaluation of the EMEC and PAD methodologies, which are described below:

### *EMEC: Effective Management of Multilingual Electronic Conferences*[25]

The EMEC methodology,[26] originally designed by FUNREDES and Enda-Caribe in 1997, allows electronic conferences to be better focused and to avoid information overload. It also improves the flow of communication within VC by allowing the use of multiple languages. It produces a synthesis of each contribution, and this is translated manually into the four languages used in MISTICA.[27] At the same time, the original contribution is machine-translated and the full set is placed on the web page. Finally, the user receives by e-mail a brief descriptive synthesis of every contribution in the language he or she selected at the time of registration, together with links for accessing original contributions in the preferred language.

The human component is a key factor in EMEC, both for summarizing the ideas in the original messages and for translating those summaries from one language to another. Although the methodology represents a great challenge, its potential is enormous if we consider that it can enhance communication across language barriers and thereby encourage diversity in virtual environments, which tend to be weakened by the homogeneity of their internal structure. The costs associated with this critical human factor are quite high: it is estimated that initially about US$20 was spent processing every message that was circulated to the list. However, with automation of some tasks, these costs were eventually reduced by about 50 percent. On the basis of this experience, a new version of EMEC is now being developed,

one that will be not only more efficient but more effective because it can be tailored to each user according to his or her personal needs and preferences.

### *PAD: Participation at a Distance*

PAD[28] is the methodology for coordinating a conventional face-to-face meeting with an electronic conference so that members of the VC who are unable to attend in person can follow the proceedings and make contributions in real time. The main components of this methodology are the PAD-out (the human interface that gathers the information in the physical meeting and directs it to the electronic-conference) and the PAD-in (the human interface that receives the responses from those in remote locations and passes them to the group in the meeting). The two pilot tests performed by MISTICA did not achieve the desired level of interaction.

## Results of self-evaluation

Self-evaluation continues to be an important factor for the success of MISTICA. A series of questionnaires were distributed by e-mail as well as stored on the public server,[29] on the basis of which the project coordinators were able to gather participants' opinions, which were then fed into the process during the course of the project.

### *Interim evaluation*

The questionnaire that was distributed midway through the project included a list of positive, neutral and negative terms and asked participants to rate MISTICA against those terms on a scale of 1 to 10. The response rate to the questionnaire was 14.1 percent of subscribers. MISTICA was seen as "original", "creative" and "ethical" (positive ratings), but it was also viewed as "too theoretical", "messy" or "disorganized", and "difficult to understand" (negative ratings). In neutral terms, MISTICA was considered "transparent", "democratic" and "methodical". From this evaluation, it emerged that participants gave the greatest priority to constituting a human network, establishing conditions for collaboration among players in the field, and creating a decentralized information network with data on players, projects and activities relating to the social impact of ICTs in the region.

According to this first evaluation, the greatest successes were achieved in terms of facilitating regional thinking about the social impact of ICTs in Latin America and the Caribbean, creating a decentralized information network, and establishing conditions for collaboration. At the same time, several areas for improvement were noted. Some comments suggested that the project management style was too vertical and too centralized. There were also widespread regrets about the low level of participation. It was suggested that the project's coordinators should try to decentralize its management and that they should adopt a strategy to generate more active participation. Some

participants also complained of the coordinators' failure to provide sufficient and clear explanations about the content of the project, and in particular its methodological components, which were seen as an essential part of the project's philosophy. There was also some disappointment about the conduct of debates: this did not surprise the project coordinators, who were well aware that there were other factors impeding discussion during this time.

### *Final evaluation*

In an effort to increase the response rate to the final questionnaire on the project, it was designed with four levels, the first three of which could be answered by e-mail. To complete the fourth level (which required further elaboration in order to establish comparisons with the interim questionnaire), the respondent had to visit the web page. The effort did not, however, translate into a higher response rate, which remained at 14 percent. This suggests that a more direct evaluation system should be used in the future. As well, the coordinators are hoping to obtain funding to undertake ethnographic research involving in-depth interviews so as to discover the subtleties of the impact that a project of this nature can have at both the organizational and individual levels, not only among those participating actively in the VC but also among the great "silent majority".

Among those responding to the questionnaire, there was a strong consensus that MISTICA was successful and that, with the addition of the components described above, it has fulfilled the needs already identified in the field. It was also clear that the impact of this project extends well beyond the workings of its VC. At the same time, the survey demonstrated clearly that the continuous flow and systematization of information about the social impact of ICTs in the region is important to users. With further funding, this clearinghouse or data repository function would remain accessible to interested users.

This final survey revealed widespread disappointment over the failure to achieve concrete results in some aspects of the project, in particular with respect to the action ingredient and its subsequent impact on concrete social processes. Subscribers also complained about the low level of active participation, and they seemed to feel, as well, that the discussion topics were sometimes not properly wrapped up, suggesting that there was a degree of improvisation in the conduct of discussions. Although there was clear recognition of the coordinators' efforts to improve the presentation of the project (in particular the web interface), there were still those who felt that the project was conceptually and pedagogically weak. Finally, some suggested that the project could benefit from methodological innovation with simultaneous communication tools such as chat lines.

### *Evaluation of the methodological components*

As essential components of the project, the EMEC and PAD methodologies were subjected to specific evaluation by the VC.[30] The EMEC questionnaire yielded some interesting data: a significant proportion of passive participants

(i.e. the 80 percent of subscribers who took no part in discussions) who answered the questionnaire said that they were very satisfied with the methodology because it allowed them to follow VC activities with a minimum investment of time. In contrast, the active participants (less than 20 percent) reported that EMEC became an obstacle to participation because it made proceedings less spontaneous (because of the slight delay in producing the synthesis) and messages were occasionally misinterpreted (as a result of faulty synthesis). This evaluation has been very useful in adjusting the methodology to accommodate different styles of participation and, as noted above, a new and more automated version of EMEC is to be introduced shortly, one that can be tailored to the needs of each subscriber.

The results of the PAD methodology evaluation highlighted the inadequate efforts of the project's coordinators to explain this methodology and their failure to articulate it properly during the first meeting. The comments from that evaluation, plus the lessons learned, led to the introduction of a simplified PAD during the second meeting. Although the methodology was received more kindly than at the first meeting, it did not have the desired effect because it did not achieve fruitful interaction between the remote VC and the participants in the face-to-face meeting.

## The gender component

Recognizing that gender definition is intimately linked to particular cultural constructions, the MISTICA project took account of the need to make changes and transformations in individuals' value systems, which still reflect society's patriarchal patterns of thinking and control. Since the exchange of information and the generation of knowledge are a source of wealth and power, the appropriation of ICTs with a gender vision is indispensable for integrating women into the development process on an equal footing.

Although the gender component was not successfully integrated into the continuing evaluation of the project, the following basic principles were stressed from the outset as a means of advancing women's position within the project:

- Encouraging women to participate actively in its different stages
- Differentiating project results, especially those of the human network and the clearinghouse, by gender
- Giving priority to gender issues in the agenda on ICT challenges in the region and establishing forms of participation for women to maximize gender equity
- Explicitly evaluating gender relationships and the way they were addressed during project implementation

The scope and relevance of these priorities during and after project completion are still open to discussion, and there is a clear intention to continue learning from experience.

## South–South cooperation

The creative potential of MISTICA gave rise to ISTICAF (***Impact social des TIC en Afrique*** - Social Impact of ICT in Africa) as a process of action research. This represented an ambitious programme of field research in seven African countries: more than 200 African activists running ICT projects were interviewed, with the intention of using the results to bridge similar experiments on both continents. ISTICAF represented the first step in opening the door to South–South exchanges. In fact, Rabia Abdelkrim of Enda-Senegal[31] has already had the chance to explain to the MISTICA VC some of the progress that the organization has made in Africa, where grassroots Internet networks have appropriated ICTs in accordance with their own standards of use and have even managed to become self-sustaining in the absence of external donors. In this way they have laid the foundation for a project that could reproduce the MISTICA experiment, suitably adapted for African conditions and for achieving real articulation between Africa and our region on the issue of the social impact of ICTs.

## The MISTICA style

One important contribution of this experiment was its management style. More than just a series of criteria for coordinating a VC, it also involves principles for living and working collectively, based on collaboration, solidarity, respect for diversity and gender equity. Ethics, responsibility and commitment are the basic principles underlying the following criteria of conduct for the MISTICA human network.

The first is active participation and transparency. In the collective process of constructing a network, all institutions and individuals interested in participating must commit themselves with enthusiasm, transparency, and a clear and open mind so as to ensure that everyone contributes and benefits fairly.

The secnd criterion is leadership and proactiveness. If a VC is to develop, there must be someone to breathe life into it – to stimulate, lead, sustain and coordinate it. In Spanish we use the word ***animar***, which comes from the Latin ***animus*** (soul or spirit), and that is what the coordination team must give to the human network at all times. In other words, team members must be more than active and independent – they must be ***pro***active!

The third concerns a common platform. There must be a common platform, a working horizon, some basic principles so that every member of the team will know where the magnetic pole lies. Belonging to the team means subscribing to these principles or this platform, and leaving the team, of course, does not imply abandoning those principles.

Another criterion is the networking culture, which can be characterized by the following elements: prompt and ready use of e-mail; respect for intellectual property and the confidentiality of information and its sources;

openness to criticism and to the collegial decision-making process; the importance of solidarity and independence and self-management, as expressed in genuinely enthusiastic participation.

Finally, for selecting meeting participants, the following basic principles were established: adequate representation of pluralism and diversity; keeping the group to a manageable size so as to foster empathy and collaboration; giving preference to individuals who have participated actively in previous work; maintaining an appropriate balance at all times between individuals and institutions and in terms of gender, diversity of approaches, etc.; and maintaining a clear vision of the compromise between strategy and tactics and between the important and the urgent.

## OLISTICA: the Observatory in Action of Social Impacts of ICTs in Latin America and the Caribbean

> The dreams that we share, the practices that unite us, the persistently overwhelming reality and the beating hearts that surround us have made this much more than an evaluation, much more than the end of a phase pushing and converting this fabric, where from our limitations and our shortcomings we are willing to lay bare our souls and fight to make this TAZ into a Permanent Autonomous Zone (PAZ)[32](contribution from Sebastián Lara during the Santo Domingo meeting, March 3, 2001).

MISTICA is embarked upon the road to concrete action in the field. The move from observation to an active role in support of CSOs striving for responsible use of ICTs for social development is a difficult but necessary step. At the Santo Domingo meeting in March 2001, much time was devoted to debating the process of transition between these two initiatives.[33] In fact, the failure of the MISTICA VC in terms of participation rates, according to the project coordinators (based on the evaluation results), could be taken as "an indication of a relational crisis of the parent–teenager kind".[34] This sparked some very legitimate questions from the VC about the community's very structure and about the role that it has played in the decision-making process.[35]

The soul-searching needed to answer these questions is also an ingredient for making the transition from MISTICA to OLISTICA a symbolic point of departure that, as a process, rests on the social fabric that MISTICA continues to generate, not only through the methodologies that it has tested and the individuals who have access to them, but more importantly through the style underlying the human network that constitutes it, as well as the ethics, principles and values guiding the common commitment to make ICTs a useful tool for sustainable human development.

The general objective of OLISTICA[36] is the following: starting from an alternative vision of ICTs, to demonstrate a collaborative approach to building and systematizing field-tested tools for creating a required institutional capacity

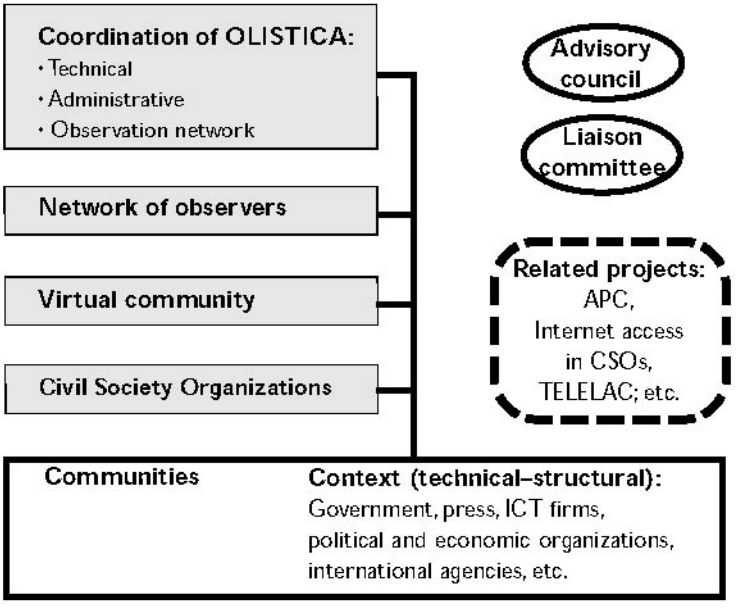
within CSOs to promote the responsible application of ICTs in various aspects of society.

To achieve this objective, OLISTICA is designed as an action-research process constituting a network of observers who, using the appropriate tools, can compile and analyze in a systematic and permanent manner information obtained from the field on the social impact of ICTs. The MISTICA VC will play a critical role in the creation and continual reformulation of the working tools and, by providing a broad-based platform for discussing the results of observation, will lead to a higher level of advocacy and influence as well as stronger organizational capacities in the CSOs benefiting from this initiative.

Figure 2 shows the components of the universe in which OLISTICA will operate:

- The coordination team will supervise and manage the various project components and the established budget. The team will have three functional groups: administrative coordination, technical coordination, and coordination of the observation network.
- The advisory council will be made up of academics, NGO members, community activists and decision makers in the field of ICT policies. They will constitute a group of experts, appointed by the coordination

***Figure 2. Components of the OLISTICA project***



team, who may or may not be part of the MISTICA VC and who will provide advisory assistance throughout the course of the experiment.

- The liaison committee will represent a permanent channel of communication to ensure active cooperation among various mutually reinforcing initiatives in the region.
- The network of observers will consist of individuals or organizations contracted by the project, or organizations with which the project can establish cooperative arrangements. Its function will be to conduct field observations, test and provide feedback on informational tools and resources designed for this purpose (see ISTICOMETROS below), and contribute to collaborative development of a social vision of the Internet.
- The MISTICA virtual community, which already exists as a human network that is in permanent communication via the Internet, will continue to monitor and support all the other processes for strengthening project components.
- Civil society organizations will provide dynamic social input and will therefore be the main target group of the project in terms of strengthening institutional and advocacy capacities.
- The public outside the MISTICA VC will be able to consult the information contained on the public web server, but people will not participate actively in the VC unless they subscribe to the community. They therefore represent a potential reservoir of project participants and collaborators.
- Communities and context represented in the diagram (government, press, ICT firms, etc.) are not within the direct sphere of influence of OLISTICA, which as explained earlier will work directly with CSOs. Its impact among these communities will depend on actions taken by individuals, groups and organizations that identify with the social vision of the Internet supported by this project.

OLISTICA will adhere to the same methodological principles as MISTICA, which encourage process-based project management so as to maximize participation by members of the VC. Moreover, by combining methodological and content objectives, OLISTICA will take maximum advantage of the potential synergy that can arise within the action-research network.

OLISTICA's budget will allow the coordinators to produce methodological tools (ISTICOMETRIA and ISTICOMETROS), to establish the observers network, the advisory council and the liaison committee; and to prepare a distance participation methodology. Unfortunately, this budget does not provide for continuity of all the programming components of the MISTICA project or for maintenance of its clearinghouse. Nor does the current budget contain an adequate component for advocacy and training. Given the strategic importance of this component, however, we are actively seeking funding for it.

If funding is secured, this training component will allow OLISTICA's products (social vision of ICTs, tools designed and lessons learned) to be converted into instruction manuals and formal and informal learning methods using both printed and electronic resources (online and offline). As it is designed, this training component will produce a profile of trainers that, consistent with the organizational needs of CSOs, will combine face-to-face activities with distance education tools that will take into account:

- sensitizing the sector
- training in the use of distance education tools
- studies of the social vision of ICTs
- methods of analysis and advocacy
- players and programs in the ICT sector
- organizing events of various kinds for awareness and informal education, etc.
- decentralized application
- summarizing experiences
- reviewing teaching materials
- monitoring the subsequent activities of trainers

The following is a more detailed description of how the project will be implemented, focusing on the methodological components that will be developed and the observation network that will use and assess those tools.

## ISTICOMETRIA and ISTICOMETROS

ISTICOMETRIA is understood as "the collective effort of OLISTICA project members to develop methodologies and instruments for assessing the social value of ICTs" (Menou 2001) and, as a grassroots process, is an essential part of the project. In methodological terms, ISTICOMETRIA is a series of principles, ethical values and procedures for constructing and using ISTICOMETROS in ways that will place in perspective, from the viewpoint of a decentralized network, the social needs for ICTs and their applications. Validation of these principles and the tools based on them will depend on participation by various players in reformulating them and adapting them to the particular needs and contexts of each user or group of users.

The purpose of ISTICOMETRIA is to analyze the manner and extent to which ICT policies, programmes and activities respond to the values and needs of sustainable human development. ISTICOMETRIA will therefore have to include a systematic and open-ended list of social needs for ICTs and their applications. These principles, in contrast to conventional tools that are limited to measuring social impacts that take many years to manifest themselves (what we call ***ticometros***), can be characterized as follows:

- They start from an alternative ideological vision of ICTs, by regarding them as a social instrument and not simply a technical or commercial device.
- The process of construction is collaborative and dynamic, resulting from an interlinking series of action-research activities.
- The testing process allows the instrument to be fully or partially modified. For this reason, they are referred to in the plural, since there can be different types of ISTICOMETROS that offer flexible options depending on the particular case.

Development of these tools will start from a social vision of the Internet, as the cornerstone for future work. In light of this alternative vision, some of these conventional ***ticometros*** will be analyzed in greater depth so that, on the basis of this information, we can prepare prototypes for ISTICOMETROS that can then be applied in the field. The results from the observation process will be used to reformulate the instruments once again, as the alternative vision is modified in light of experience.

### The observation network

Because of its complexity, the observation network is the most sensitive component of the OLISTICA project. That network will have the following responsibilities:

- To maintain an "information watch", which means observing events and collecting raw data in an organized and ongoing manner.
- To analyze, field-test and critique observations using the tools of ISTICOMETRIA.
- To spread the social vision of the Internet, the instruments used, the reformulation process and the results of its application.
- To contribute to the resource centre and to ISTICOMETRIA.

Although no final decision has been made on how the observation network will be organized, the following dimensions will be taken into account: country, issue, specific cases, stage of the project, type of observer, and type of observation (work, product). The observation approach will follow the scheme of principal and horizontal axes discussed in the earlier section on the MISTICA VC.

In terms of organizing the observation network by specific cases, we consider the following cases to be of interest for a social vision of the Internet:

- Telecentres (emphasizing their particular social characteristics, e.g. the conditions under which a telecentre can be useful for social development

- Municipal governments (e.g. the conditions under which a "smart cities" programme can be useful for social development)
- Virtual universities
- ICTs in primary and secondary schools
- Civil society networks
- Telemedicine (e.g. expansion or restriction of access to health services)

### Facilitation at a Distance (FAD)

The lessons learned from the MISTICA experiment made it very clear to project coordinators that promoting exchanges in virtual space requires an agenda. FAD is intended to move in this direction by considering various characteristics of the face-to-face facilitation process that are suited to asynchronous online interaction (e-mail). We shall begin with a review of the literature to create an open-ended base of knowledge and strategies used by other groups in specific circumstances (to be available shortly on the public web server). At the same time, we shall draw upon experience with the pilot applications (the action components of the MISTICA project) to revisit the shortcomings and the particular circumstances that limited communication in that experiment. With these contributions, and with the advice of experts in critical pedagogy, grassroots education and transformational learning, we shall prepare a series of recommendations on how to construct a virtual space based on mutual trust. This will offer the possibility of exchanges under conditions of equity and balance of power, and above all it will appeal to the human element in computer-mediated communication.

On the basis of these recommendations, we shall design an FAD strategy for OLISTICA that will reflect the particular features of this project and, in particular, the communication flow chart, the players involved, objectives and expectations, etc. The strategy will be implemented together with a continual and participatory evaluation mechanism that will allow for the facilitation mechanism to be monitored over a predetermined period of time so as to derive maximum methodological benefit from this experiment.

### Expected products

In terms of the expected products from OLISTICA, the overriding outcome should be to facilitate joint construction of a social vision of ICTs in Latin America and the Caribbean. Collaboration will be a further product of the experiment to the extent that it enables lessons to be drawn about the methodologies and procedures that have facilitated collaboration among the various organizations participating in the project. The observation network's activities will also provide some lessons showing that collaboration is possible, identifying clearly the obstacles and the appropriate mechanisms for integrating distance activities into a VC with a shared vision. The set of tools

described above (in particular ISTICOMETRIA, ISTICOMETROS and FAD) will represent a further valuable contribution of OLISTICA to the current state of knowledge.

Finally, there will be two kinds of evaluation and monitoring. The first will be based on the self-evaluation methodology being developed in MISTICA, which allows continual monitoring by the entire VC. The second strategy will define indicators of success and failure so that every component of the project can be evaluated continually during the life of the experiment.

## Conclusion

The conscious and deliberate kind of transparency that we have called "active transparency" has made MISTICA a catalyst that has sparked the enthusiasm of active members, who were able to be co-participants in a style of communication that points to the utopia (as yet virtual) of a better world. It is precisely this shared feeling of solidarity that inspires our confidence and gives us the assurance that this social fabric will set both the map and the course for the road that OLISTICA has yet to take.

At a time of growing complexity – when the collective identity is being constructed as a system of vectors under tension or a "movement of individuals" for whom the universality of interests is a factor of short-term aggregation – research, or rather the ethics and politics of working for knowledge, is becoming a process of metacommunication that, as described by Melucci (1996), can contribute to the practice of freedom. In this space, where sincerity and transparency prevail, the social actor and the researcher meet face-to-face, revealing in the practice of multiple positionings the very reason and the instruments required to articulate collective action. An analytical and critical capacity, communication skills and – why not? – access to ICTs are powerful weapons for resisting and opposing manipulated and manipulative knowledge.

This profound thought underlies the daily experience feeding the hope of collective action in a VC such as MISTICA. Who is doing the research? What or who is the object of social change? Part of the answer to these questions lies in knowledge and in the implementation of new epistemological paradigms. Donna Haraway (1998), for example, speaks of the subjectivity produced by multiple experiences, where what is regarded as absolute scientific truth yields to respect for situated knowledge, which, in permanent tension with these standard-setting networks of knowledge and power, allows the emergence of horizontal alliances, which in turn support collective action.

MISTICA has constructed open-ended, multiple and creative discourse. Yet the co-presence and the feeling of collectivity that emerge in the MISTICA VC are not a sufficient condition for involving more voices in this process of democratic understanding. As Raisa Urribarrí (2001), an active member of the VC, put it:

> We conceive participation as a human right, but also as a duty. It is a responsibility and a commitment that moves us to involve ourselves actively in projects that we feel are our own. Is this our own project? To feel that something is one's own is very different from signing onto something designed by others. In our opinion, achieving a climate that fosters participation requires an educational process that facilitates the incorporation of people into the project we are promoting. For that, information is vital.[37]

This comment is food for thought. The fact that most of the subscribers to MISTICA do not make themselves heard (they are passive participants) could indicate a space where insufficient attention has been given to creating an atmosphere of trust, one that will encourage members to exchange their thoughts with each other, a condition that Mezirow (2000) calls a fundamental element of transformational learning. Belenky and Stanton (2000) warn that, by doing away with asymmetry in relationships of exchange (which generally do not manifest themselves openly in learning groups – in their case, adult female students), we risk excluding those who learn by means other than lineally articulated language and thinking. They suggest that returning to a space built on mutual trust, where everyone's arguments are appreciated for their strengths instead of their shortcomings, is a good way to make the learning process more inclusive. As opposed to the belief that a relational environment of this kind is not conducive to sound intellectual work, the authors maintain that the great creativity resulting from "connected learning" does much to strengthen intellectual construction (which they describe, moreover, in terms of patient listening instead of the usual competitive attitude). This idea, although originated in face-to-face situations, seems highly relevant to our concerns about VCs, and will be taken seriously into consideration in formulating the FAD strategy for the OLISTICA project.

Another lesson that we may draw from the collective experience with VCs comes from the humorous expression that sparked so many comments at the final meeting in Santo Domingo: "There's no free lunch!" Who will willingly contribute time and energy to creating a collective space? Who will simply take from it and give nothing in return? In seeking answers to these questions, we may go back to the notion of social capital and how, in virtual spaces, relationships of exchange are established that can turn out to be mutually satisfactory.

The most widely accepted definition of social capital refers to the capacity of individuals to command scarce resources by virtue of their membership in networks or broader social structures (Portes and Landolt 2000). In virtual environments, the transactions that take place are exchanges of information via a constituted network. Once it is distributed and stored, information becomes a public good and, as Kollock (1999) puts it, "consumption" of this information by a user does not diminish the capacity of another user to access it as well. Yet we must still pay close attention to the size of the network, the relative proportion of those who do not collaborate, and the frequency with

which these events occur. If there is increasing apathy in a medium-sized VC like MISTICA, the interest of active participants in contributing to discussion may diminish proportionately. It is clear, then, that many questions remain unanswered. What is it that motivates people to participate actively? How are the rules of reciprocity constructed in virtual environments where interaction is casual and there are no physical markers? And, more importantly, what are the limits to online cooperation and what are the conditions under which a collectivity comes together to build social capital instead of parasitically squandering the efforts of a few members, something that will undermine the effectiveness of exchange?

We have yet to find answers to these and many other questions. We may daydream about utopia – but are there limits to our desires? The unknown virtual landscape into which MISTICA and OLISTICA are venturing in Latin America and the Caribbean will make the journey even more interesting. Robert Putnam (2000) notes that, although telecommunications and the incredible growth of network connections are the foundation for the community utopia, there are a number of unresolved trends that are not necessarily consistent with achieving that dream (e.g. the technological divide and the passive entertainment that undermine social structures). Noting that the lack of non-verbal information can diminish the sense of trust in virtual spaces, he suggests that computer-mediated communication may increasingly complement but will not replace our characteristically human face-to-face interaction.

We close with the question posed by Sebastián Lara (2001), another active member of the MISTICA VC: How can we move on from connectivity to affectivity?

## Acknowledgement

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## Notes

1. <http://funredes.org/mistica>.
2. <pimienta@funredes.org>. Fundación Redes y Desarrollo, Dominican Republic, <http://funredes.org>.
3. <lbarnola@idrc.ca>. International Development Research Centre, Canada, <http://www.idrc.ca/pan>.
4. E-mail, discussion lists, bulletin board systems (BBS), multiple-user dungeons (MUD), newsgroups, Internet relay chat (IRC), etc.

5. Among other essays that deal with the complexity surrounding identity negotiation in CMCs, we may cite some specific studies on gender (O'Brien 1999), racial indicators in online communities (Burkhalter 1999), fictitious identities (Donath 1999), and social power and hierarchy (Reid 1999).
6. Although it is too soon to venture any generalizations, we are now witnessing the proliferation of non-profit groups, operating in a completely decentralized way, that are providing independent multimedia coverage at both the global and local levels for growing numbers of social movements opposed to the intrinsic contradictions and asymmetries of the multinationally supported neoliberal economic model. We refer here in particular to the "indymedia" (independent media centres) <http://indymedia.org> that originated in North America but are now proliferating in cities throughout the world.
7. "Informationalism" is the development mode, characteristic of our time, that is based on optimizing the combination of knowledge generation, information processing and symbolic communication (Castells 1996).
8. <http://www.apc.org>.
9. <http://www.colnodo.apc.org>.
10. <http://www.acceso.org>.
11. <http://sentenext1.epfl.ch/fph>.
12. Since the MISTICA VC is open to the general public, many more people have signed up in recent months.
13. <http://funredes.org/mistica/castellano/emec/produccion>.
14. Records on present or past participants in project execution are not kept by country of origin.
15. For more information on the Samaná meeting, visit <http://funredes.org/mistica/castellano/eventos/samana>.
16. Doc-Sam on the Samaná meeting: <http://funredes.org/mistica/castellano/cieroteca/tematica/esp_doc_sam2_1.html>.
17. For information on the meeting in Santo Domingo, visit <http://funredes.org/mistica/castellano/eventos/reunionmist>.
18. We know of a similar experiment conducted in Nicaragua where a distance participation system was used during a meeting between the rural press and community groups, sponsored by the Nicaraguan Sustainable Development Network <http://www.sdnnic.org.ni>.
19. The FUNREDES server is an IBM Netfinity 3000 operating on a Linux platform that supports a Postgre SQL and PHP database management tool.
20. For up-to-date statistics on access to the FUNREDES server, visit <http://funredes.org/internet/stats/es/statistics.html>.
21. The list of documents on the MISTICA project, which can serve as a framework for thinking about the social impact of ICTs in the region, is found at <http://www.funredes.org/mistica/castellano/ciberoteca>.
22. The clearinghouse is available at <http://funredes.org/mistica/metasitio>.
23. Yanapanako means "helping each other" in the Quechua language, and represents the idea of mutual support between the MISTICA pilot applications <http://funredes.org/mistica/castellano/aplicaciones_pilotos>.

24. <http://funredes.org/mistica/castellano/aplicaciones_pilotos/seguimiento.html>.
25. ***Gestión eficiente de las conferencias multilingües*** in Spanish.
26. <http://funredes.org/funredes/emec.htm>.
27. The following link explains the EMEC methodology as it was implemented in the MISTICA VC: <http://funredes.org/mistica/castellano/emec/documentacion>.
28. A full description of PAD, given during the MISTICA meetings, as well as other documentation that provides more schematic and pedagogical information on this methodology, can be found at <http://funredes.org/mistica/castellano/ciberoteca/metodologia>.
29. The questionnaires and evaluation results are listed on <http://funredes.org/mistica/castellano/evaluaciones>.
30. The EMEC evaluation can be consulted at <http://funredes.org/mistica/castellano/evaluaciones/evalemec.html>, while the PAD evaluation is found at <http://funredes.org/mistica/castellano/evaluaciones/eval02.html>.
31. <http://www.enda.sn>.
32. TAZ is "Temporary Autonomous Zone"; PAZ, standing for "Permanent Autonomous Zone", is also the Spanish word for peace.
33. <http://funredes.org/mistica/castellano/eventos/reunionmist/resumen.html>.
34. <http://funredes.org/mistica/castellano/evaluaciones/reunionfinal03.html>.
35. On this point see the comments of Raisa Urribarrí (2001) in "The MISTICA VC: Between eating and cooking"
36. The OLISTICA project, also financed by the PAN initiative of IDRC, began in June 2001 <http://funredes.org/olistica>.
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# Introductory notes for the analysis of ICT policies in Latin America and the Caribbean

Roberto Roggiero

## Introduction

Since it was founded in 1990, the Association for Progressive Communications (APC) <http://www.apc.org> has been working with civil society organizations around the world in making use of information and communication technologies (ICTs).[1] As part of these activities, APC has paid particular attention to the conditions necessary for the various segments of civil society to make effective use of ICTs. As a result of our work, we have identified what we call "Internet rights" as a special dimension or subset of human rights as they apply to the specific field of ICTs. APC recognizes that the effective exercise of Internet rights requires policies that will promote those rights or at least will not interfere with their full enjoyment.[2]

## Some definitions

### Civil society

In Latin American sociology usage, "civil society" has taken on multiple meanings, and the term is used in different contexts to refer to various social groups. For purposes of this paper, we understand civil society as consisting of the following social groups: non-governmental organizations (NGOs, including foundations and other non-profit organizations), grassroots organizations (such as neighbourhood organizations, ***campesino*** organizations, women's organizations), second-tier or umbrella organizations (federations of several grassroots organizations), social movements (groupings of popular organizations with political objectives, with a greater or lesser degree of institutionalization), and labour organizations (unions, craft guilds, etc.).[3] To these we may add the many social networks, not necessarily institutionalized, that promote networking and social activism in the region, with or without the use of ICTs. In this last case, we are speaking of virtual communities.[4]

### Information and communication technologies

This refers to a set of technologies that permit the exchange and transmission of information (data) by different means. The most common is the Internet protocol (IP). We also understand ICTs to include relatively conventional technologies, such as radio, and more modern ones such as cellular telephony, provided they have some kind of link to the Internet.

### Internet

This is a global data network under the IP, transmitting over a set of wired (copper wire, fibre-optic cable, etc.) and wireless (satellite, microwave, spread spectrum, etc.) solutions.[5]

### Internet rights

APC is actively engaged in supporting and defending human rights, taking as its starting point the rights enshrined in the United Nations Universal Declaration of Human Rights, and in particular those in Articles 12 and 19.[6] APC recognizes, however, that the declaration was drafted when the Internet did not yet exist and we need now to expand the scope of those rights to include ICTs. Internet rights, in other words, are nothing more than human rights applied to the Internet. For a more extensive discussion of this aspect, see APC Internet Rights Charter, attached as an annex to this paper.

### Internet policies

Similarly, we understand Internet policies (or ICT policies) to be public policies that affect various aspects of the access, use and exploitation of ICTs (such as telecommunications, intellectual property, education, technological development). Internet policies, therefore, are heterogeneous and multisectoral.

These policies are implemented for the most part in the public sphere, although not exclusively, given that with privatization, essentially in the telecommunications sector, some of these policies now apply to the private sector (e.g. extending telephone service to rural areas through private telecommunications companies).

We are also speaking of policies that are not necessarily "national", since the process of globalization and the media used by these technologies are such that actions relating to ICTs will nearly always have impact beyond national borders (e.g. security issues, or the privacy of communication), or the actions may be taken by institutions that are not necessarily controlled by national governments (e.g. the worldwide system for allocation and registration of domain names[7]).

Internet policies, as APC understands them, are not limited to policies relating to technological development of the Internet (building infrastructure or broadband capacity, among others), but include as well policies relating to their use and exploitation, such as policies for training in the use of computers and ICTs in general (digital literacy) or those relating to freedom of expression.

## The social relevance of the Internet

We wish to highlight some aspects that allow the Internet to be considered a social development tool and something that is therefore strategic for the interests of civil society. The following are some basic characteristics of the Internet:

- It overcomes geographical barriers: people who are far removed from each other can communicate among themselves. As well, thanks to the Internet, a person can access digitized information that may be physically far away (e.g. stored on a server located in another country).[8]
- It overcomes time barriers: people can communicate with each other asynchronously, i.e. without necessarily doing so at the same time.[9]
- It facilitates the massive and instantaneous spread of information: through e-mail, a single message can be sent simultaneously to a great number of people (e.g. via a distribution list).
- It allows information to be kept and manipulated in digital format. This means that lengthy documents can be easily modified, saved or reproduced, thereby facilitating the accumulation and development of knowledge.[10]
- Costs are low compared to other media; and, bearing the foregoing features in mind, communication and access to information via the Internet generally carries a very advantageous cost/benefit ratio.

These characteristics, among others,[11] make the Internet of particular interest and usefulness, especially for purposes of intercommunication, exchanging information, accessing knowledge, education, etc. In particular, ICTs offer opportunities for civil society to pursue values and strategic objectives such as these:

- Participation and expression: ICTs enable sectors that have traditionally been prevented from expressing their viewpoints and influencing public policy (such as ethnic minorities, women, young people) to do so on an equal footing with other individuals and social groups.
- Cooperation and collaboration: Internet tools allow groups and individuals to collaborate and pursue joint projects and activities at a national, regional or global scale.

- Access: ICTs facilitate access to information and content of various kinds, as well as the possibilities for contributing to global knowledge by drawing upon local knowledge and content.
- Solidarity: ICTs facilitate the building of solidarity among activist networks in different social fields, such as human rights, the environment, and gender.

Because of these potential benefits that it offers, the Internet has been (or should be) included among the "basic needs" of humanity, and particularly of civil society. For this reason, it is essential for governments and civil society organizations alike to promote mechanisms for access, use and exploitation of the Internet. Access to the Internet is not by itself a sufficient goal[12] – what is important is to make use of it to improve standards of living and to promote the development of human capacities.[13]

It is these aspects, among others, that highlight the need for civil society to defend its Internet rights actively: on one hand, the right of access, use and exploitation so that the so-called digital divide[14] is not widened but is reduced; on the other hand, the right to enjoy the opportunities that the new technologies offer, as part of the exercise of fundamental human rights.[15]

Yet ICTs also bring with them consequences that are not always desirable from the social viewpoint or for the interest of civil society. Among these consequences, we may note the following (Martínez and Gómez 2001):

- Homogenization and imposition of world views, culture and ideas from regions that dominate the Internet
- Saturation and paralysis as a result of too much information of uneven quality. Information overload can lead paradoxically to disinformation
- Isolation and fragmentation by fostering microsocieties dedicated to ever more specialized subjects, producing a scattering of small communities that are unconnected to other social processes

Of course, these are not arguments for rejecting ICTs, but they do represent threats that must be taken into account when designing policies.

## The Latin America and Caribbean ICT Policy Monitor

Having identified Internet rights as an area ripe for institutional action, APC is sponsoring a series of projects to analyze the status of those rights and to examine public policies as they relate to the Internet in different regions of the world. It is well advanced on a project on Internet rights in Europe, and projects for Latin America and Africa are underway.[16]

The project for Latin America and the Caribbean, as its name suggests, seeks to establish a system for monitoring and systematizing Internet policies in the region in order to track their development and analyze their trends, but above all to alert civil society, public opinion leaders and policymakers

to the social requirements for the full exploitation of ICTs. The project is therefore designed to identify mechanisms to enhance the awareness of civil society about issues relating to Internet rights and ICT policies.

The Latin America and Caribbean ICT Policy Monitor[17] is intended to create an information centre on the Web about ICT policies, based on research, organization, analysis and monitoring of policies at the regional and national levels as they affect Latin American countries and the capacity of civil society and its disadvantaged communities to benefit from the computer revolution.[18]

The objective of the project is to develop tools that civil society can use to promote favourable policies and to develop basic tools on the rights of civil society with respect to ICTs. As part of this initiative, the project will sponsor and support a network of organizations and individuals interested in monitoring and influencing Internet policies.

For these purposes, the project has defined three principal components:

(a) Research on ICT policies: The objective of this component is to propose general ideas for ICT policies in the region and to monitor closely those new developments that can have a significant impact (positive or negative) on the efforts of civil society.
(b) Monitoring ICT policies for civil society: The objective here is to develop, through collaboration, a central, readily usable web site for the region containing up-to-date information on significant regional and national ICT policies and legislation, and in this way to help civil society understand the Internet rights issues involved.
(c) Awareness and mobilization activities on ICT policies: The objective of this component is to use the resources of the other project components to support action campaigns to foster and strengthen a network of organizations that will work actively in the advocacy and defence of Internet rights for civil society.

# ANNEX

## APC Internet Rights Charter – April 2001[19]

### Preamble

"With the development of new information and communication technology (ICT), not only has the realm of communication expanded but its importance has multiplied, due to new implications it has for different areas of social coexistence. Never before in history has humanity been able to count on so great a potential to communicate, and yet this is mitigated by the increasing tendency towards the monopolisation of such technologies, under the protection of the norms imposed by the dictatorship of the market." (From a statement by ALAI, Agencia Latinoamericana de Informacion, in preparation for the World Social Forum, January 2001, Porto Alegre, Brazil.)

The Internet has become a powerful and widespread communication platform, particularly with the convergence of existing communication media with new communication technologies. Access to the Internet has increased, in spite of the continued exclusion of marginalised communities and many people in the developing world. At the same time it has become subject to increasing commercialisation and corporate ownership and control.

New communication technologies are a vehicle of a process of globalisation that takes place on unequal terms and that often increases social and economic inequality, between and within countries; at the same time these technologies can be an empowering tool for resistance, social mobilisation and development in the hands of people and organisations working for freedom and justice.

In order to realise the empowering role of ICTs, the APC aims to ensure that rights of expression, communication, association and protest on the Internet are protected in practice, enshrined in national, regional and international policies and implemented through awareness raising and action.

## About this document

The Association for Progressive Communications focuses on Internet rights as one of its three priority action areas for 2000 to 2002. This Charter was developed by APC members and partners at the APC Europe Internet Rights Workshop, held in Prague, from 18 to 21 February 2001. It draws on and is associated with the "People's Communications Charter" <http://www.pccwaag.org/pcc> and the statement of "A Global Movement for People's Voices in Media and Communication in the 21st Century" <http://www.comunica.org/v21/statement.htm>. The themes and principles outlined below express the APC's views and goals concerning the right of people and organisations to use the Internet freely, particularly in their work for social, economic and environmental justice. While specific reference is made to the Internet, these principles are relevant to all other information and communication technologies.

This document is not comprehensive. It attempts to highlight some of the specific issues that individuals, civil society organisations, community media, and policy makers and regulators need to consider in their efforts to protect the right to communicate freely via the Internet and realise its potential to create a better informed and just world.

## Theme 1: The right to communicate

Right to access: The right to communicate is a fundamental human right. Rights related to access and use of the Internet and electronic communication infrastructure are equally fundamental if ordinary people are to have their voices heard. ICTs must be made available to all. Access targets will vary by country, region, and technical platform, and need to be revised in response to people's changing needs and the emergence of new communication technologies.

Inclusiveness: The development of information infrastructure and user interfaces should ensure access for marginalised groups, for example, migrant workers, disabled people, those who are not fully literate, minorities, and people living in rural areas or poor urban settlements without basic infrastructure.

Gender equity: Access targets and efforts should be informed in particular by the need to protect and advance gender equality.

Affordability: The development of Internet infrastructure and the setting of rates and tariffs must remove economic status as a barrier to usage. Liberalisation of the broadcasting and telecommunications sectors may have the potential to reduce costs and limit governmental control over communications and media, but it does not absolve the public sector from its responsibility to ensure that all citizens have affordable access to the means to communicate, via the Internet and community-controlled electronic media.

Developmental impact: Internet infrastructure should be developed with a view to creating more egalitarian societies and providing support for education, health, local business development, good governance and poverty eradication.

Integration with media rights: Legal and regulatory frameworks that govern the Internet should be integrated with frameworks governing other media to ensure compatibility and to secure the rights of citizens and organisations to have access to all forms of information and communication technologies (e.g. through community media).

Accessibility of public information: Governments, local, national and global, need to ensure that public information is disseminated through the Internet in a way that is accessible to users of low-end technologies and people without access to fast connections.

Rights in the workplace: Access to the Internet in the workplace must be permitted for the purposes of organising, protecting workers' rights, and education.

### Theme 2: Freedom of expression and information exchange

Article 19 of the Universal Declaration of Human Rights states that: "Everyone has the right to freedom of opinion and expression; this right includes freedom to hold opinions without interference and to seek, receive and impart information and ideas through any media and regardless of frontiers."

Freedom of expression: The Internet is a medium for both public and private exchange of views and information. People must be able to express opinions and ideas and share information freely when using the Internet. The potential of the Internet to allow public participation in governance processes, at international, national and local levels, should be utilised to its full. At the same time, there should be mechanisms in the public domain to challenge the publication of content that is harmful to women, children and other vulnerable groups, or content that can incite violence and hatred.

Freedom from censorship: The APC opposes all attempts to censor social and political debate, whether they come from governments seeking to stifle opposition from their own citizens or from powerful vested interests threatening to use their superior political or economic power to silence unpopular views. We oppose the use of copyright and intellectual property rights to stop criticism of corporations and their policies. The right to parody should be strongly protected.

Freedom to engage in public protest: Organisations, communities and individuals should be free to use the Internet to organise and engage in public or political protest.

### Theme 3: Diversity of content, ownership and control, and the protection of user rights

Diversity of content: Increasingly, the potential of the Internet to record and promote culturally and politically diverse content is offset by the commercialisation of Internet-based content management services. Regulation of the ownership and operational and technical control of the Internet should strengthen content diversity and limit the existence and power of monopolies, either by national governments or private sector corporations.

Linguistic accessibility: The development of standards, user interfaces and new technical platforms should seek to preserve and enhance local and regional linguistic diversity, in both the audio-visual and printed media. Currently the dominance of Internet-based tools and interfaces that accommodate only Latin scripts limits content diversity, the development of local content, and intercultural exchange and collaboration.

User rights: The rights of individuals as users of the Internet should be protected, and they should have recourse when their rights are being violated either by service providers or governments.

Evaluation of social impact: The general assumption is that all technological innovation is beneficial. Civil society organisations, governments and regulatory agencies should evaluate advances to Internet technologies within a framework that permits potential positive and negative impacts to be assessed.

### Theme 4: The licensing and control of intellectual property

Proprietary solutions and intellectual property: Policy and regulation that govern public access and dissemination of public information need to discourage the use of proprietary software and systems. Governments that make use of proprietary systems to disseminate information or for educational purposes encourage others to purchase legal licences or violate intellectual property regulations. This discourages local innovation and learning and enriches privately owned corporations, usually based in the North. APC calls

for the use of open source and free software solutions. Working with open source options is empowering, builds skills, is more sustainable, and encourages innovation at the local level.

Technological standards: The development of standards within the Internet should not prejudice or exclude sections of society from accessing the Internet, for example communities who do not use Latin scripts, or who cannot afford to constantly upgrade their computer and communications hardware and software.

### Theme 5: Privacy

Data protection: Personal information held by private or public bodies should be protected from any unauthorised disclosure. Policies need to define how, and under what circumstances, authorisation can be obtained.

Freedom from surveillance: Individuals and institutions should be able to communicate via the Internet without the threat of surveillance and interception.

Right to use encryption: People communicating via the Internet should have the right to use tools, such as encryption, that ensure secure communication.

Accessible recourse to public protest: Groups that feel their security and privacy is threatened by Internet-based content, for example content related to trafficking in women and children or neo-Nazi activities, should be able to have access to mechanisms for taking action against the producers and publishers of such content.

### Theme 6: Global, regional and national governance of the Internet

Setting and implementing technical standards: The development and implementation of standards related to the control and operation of the Internet increasingly give undue weight to market influences. Standards that permit or enable the limitation of personal freedoms must be evaluated in a transparent manner.

Transparency and accessibility: All decision-making processes related to the governance and development of the Internet, for example assigning of domain names and numbers, should be open and accessible, at global, regional and national levels.

Participation: Internet governance and standard-setting bodies must be open to participation and scrutiny by all stakeholders, particularly non-commercial stakeholders.

### Theme 7: Rights awareness and realisation of rights

Rights awareness and education: Internet policies need to be developed taking into account their "implementability". This involves public education to inform people of their rights when using ICTs and of mechanisms to address

rights violations. National, regional and global governing bodies must make information available regarding rights and procedures related to information and communication technologies and infrastructures.

Recourse when rights are violated: Individuals and organisations need free, public access to effective and accountable mechanisms for addressing violations of rights.

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<http://www.apc.org/english/rights/charter.htm>.

## Notes

1. In this paper we use information and communication technologies (ICTs) and Internet as synonyms, although we recognize that ICTs cover a broader universe of technologies, such as cellular telephony.
2. This paper is part of the APC Initiative on Internet Rights for Civil Society, one component of which is the Latin American and Caribbean ICT Policy Monitor project sponsored by the International Development Research Centre (IDRC) of Canada.
3. Ours is clearly an operational definition and does not necessarily coincide with the concept of civil society developed by Antonio Gramsci (an Italian Marxist sociologist and political scientist), one of the first to popularize this term, which for analytical purposes may be more appropriate.
4. The concept of virtual community requires an explanation and definition that we shall not go into here.
5. The Internet may also be understood (beyond its exclusively technological dimension) as a new form of social relationship and organization.
6. Article 12: "No one shall be subjected to arbitrary interference with his privacy, family, home or correspondence, nor to attacks upon his honour and reputation. Everyone has the right to the protection of the law against such interference or attacks." Article 19: "Everyone has the right to freedom of opinion and expression; this right includes freedom to hold opinions without interference and to seek, receive and impart information and ideas through any media . . ."
7. This specific aspect falls to the Internet Corporation for Assigned Names and Numbers (ICANN) <http://www.icann.org>, an NGO incorporated in California.
8. Other technologies, such as radio and television, can also overcome geographical barriers, but they do not have the interactive possibilities of the Internet.
9. Contrast it with the telephone, for example, which requires that the two parties communicating do so at the same time.
10. A document sent by fax, for example, does not lend itself readily to such manipulation.

11. We could cite many others, depending in general on the available degree of broadband access (real-time teleconferencing, multimedia services, etc.). We have attempted here to indicate only some of the more basic ones.
12. Juliana Martínez and Ricardo Gómez developed this idea in their excellent paper "Internet . . . why, and what for?" See the online English version at <http://www.acceso.or.cr/PPPP/index_en.shtml>.
13. On this point, we may say that the use and exploitation of ICTs is part of the "social opportunities" for developing "human capacities" (concepts developed by Amartya Sen that are now the basis of United Nations Development Programme's approach to human development).
14. We understand the digital divide to be the result of social, economic and political disparities.
15. Access to educational content, electronic commerce to strengthen the grassroots economy, etc.
16. For an update on these projects, see <http://www.apc.org/english/rights>.
17. For more information, and to participate in this project, visit <http://www.apc.org/english/rights>.
18. The Latin America and Caribbean ICT Policy Monitor does not seek to be a static depository of government regulations and official statements, but rather an active centre for the exchange of information (in simple language) and for mobilizing civil society around policy issues relating to ICTs.
19. This text is essentially a draft since the Charter is continually receiving contributions and comments that will be progressively incorporated. <http://www.apc.org/english/rights/charter.htm>.

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# Conclusion

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# Creating synergy between research on the social impact of ICTs and political action for equitable development

Marcelo Bonilla and Gilles Cliche

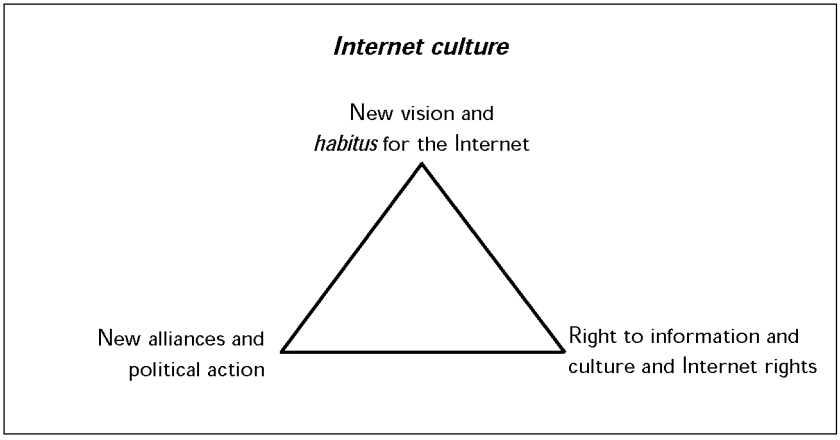
The Internet is a tool and a language, and as such it constitutes a new system and form of producing, distributing and circulating knowledge and information. Studying its social impact in diverse settings of Latin American and Caribbean culture and society is useful to the extent that it can provide guidance for designing and implementing public policies in support of equitable development in the various aspects of the region's social life, including programmes and initiatives for promoting information and communication technologies (ICTs).

As we have seen, using this tool and its associated language cannot by itself bring about the changes needed to improve living conditions. On the contrary, the Internet is part of a broader social and political context in which, for the most part, it tends to reproduce and exacerbate inequality and exclusion. For the time being, studies suggest that the Internet is leading to a greater concentration of material and cultural (symbolic) wealth, something that we examined in detail in the introductory study, where we described how a utilitarian approach to the use of ICTs has merely reproduced the dominant order, based on social exclusion and on racial, ethnic, gender or generational inequality.

Nevertheless, it remains strategically important for vulnerable or excluded social groups to appropriate this instrument together with its symbolic system, inasmuch as it can induce and empower citizen participation and channel public demands for political and social equity to local or regional governments. In this respect, ICTs are a vitally important tool for groups and organizations of civil society seeking to promote social policies in the fields of human rights, public health and education, by opening debate on the rights of the public to communicate and participate politically.

In this respect, research into the social impact of the Internet in schools, in local governments and in law involves rethinking political institutions on the part of researchers and civil society organizations (CSOs) and the public in general. It leads us to think about principles and rights that find no practical application in Latin America and the Caribbean and that, at least for now, are merely gathering dust on the pages of constitutions and legislation: political participation, freedom of expression, and the right to communication and access to knowledge (education).

As a final conclusion of the research project sponsored by FLACSO-Ecuador and the International Development Research Centre (IDRC, Canada), and other initiatives in Latin American such as the MISTICA virtual community and Fundación Acceso (both supported by IDRC), we may say that the building of an Internet culture that will guarantee access, appropriation and meaningful use of ICTs will depend on the pursuit and convergence of three processes and lines of action: (1) building a new vision and practice (***habitus***) for the Internet; (2) establishing new strategic alliances between institutions and individuals in civil society, the private sector and the government sector (local, regional or national) with a view to achieving social development of ICTs (both through collective access and through the social use or appropriation of this tool); and (3) action and advocacy by CSOs and the public to secure the right to communication and culture and Internet rights, both in daily life and in the texts of national and international legal instruments.




We offer below some thoughts on each of these three processes, which are essential for building an equitable Internet culture for Latin America and Caribbean.

## A new vision and habitus for the Internet

Studies on the Internet's social impact in Latin America have highlighted the need to link cultural concepts and practices and citizen participation as the key to designing development projects that use the Internet. In other words, the current problem with ICTs goes beyond the issue of connectivity (physical access) and implies the use and appropriation of a new language and a new tool by groups of citizens and CSOs.

In this respect, studies and research covering school culture (in Bogota, south-central Chile, and the communities of Zapala and Tanti in Argentina)

and local governments (introduction of ICTs in Buenos Aires, Montevideo and the Chilean municipalities of El Bosque, Puente Alto, Los Andes and Rancagua) point to the need to approach Internet projects with a vision and practice that goes beyond the prevailing and purely utilitarian viewpoint in initiatives for incorporating ICTs into schools and public life.

For the moment, most of the initiatives examined are divorced from local culture and have been implemented and adapted to suit conventional power structures: this situation reflects the gulf that separates school life from real life, and prevailing education philosophies from community needs. These studies have revealed the logic underlying school systems and the dynamics of local governments, which tends to perpetuate local power and management structures that do not involve any real citizen participation and that impede the emergence of an Internet culture based on the right to communication and culture.

A new vision and ***habitus*** of the Internet must be based primarily on the development of new approaches to civic education.[1] These new approaches require a grassroots-led approach within the school system and local organizations (***barrio***, community, etc.).

Social use of the Internet should be based on this educational nexus where the three dimensions – local, regional and global – intersect. From this perspective, new teaching approaches offer ways of learning, perceiving and acting through new forms of communicating and exchanging knowledge, involving strategic use of the Internet. Such an educational reform must also be included as part of the agendas for projects at various social levels and scales, ranging from educational projects in schools and proposals for electronic government to experiments in building virtual communities.[2]

## The right to information and culture and Internet rights

Undertaking projects to promote social use of the Internet requires formal recognition, in constitutions, national legislation and international legal instruments, of the right to information and culture and Internet rights; and at the national and local government levels, these must be reflected in a horizontal policy cross-cutting all other social policies.

This recognition will only be possible if CSOs and citizens' movements dedicated to developing public policies (health, human rights, political participation, education, etc.) expand their political agenda to include consolidation of these rights, which must be regarded as prerequisites in this globalized world for exercising the rights of citizenship that form part of the national and international legal framework, as well as the rights of free expression and political assembly that are enshrined in the Universal Declaration of Human Rights.

Internet rights must consider both physical access to ICTs and their social appropriation and meaningful use (which allow them to be incorporated into school culture, the community and local government), consistent with the

circumstances of each country, region and locality. These rights should serve as the basis for building a political culture based on citizen participation, involving in particular those social groups that have traditionally been excluded on racial, ethnic, gender or generational grounds.

The legal models applied to the Internet issue in Latin America and the Caribbean should not be mere copies of foreign legislation: they must respond primarily to local and national needs and should seek to harmonize the free flow of information and knowledge with the rights to privacy and intimacy and "fair use" of intellectual property. If these countries are to successfully join the globalized information world, there must be harmony between these two currents: the one that promotes free access to knowledge and information, and the other that protects individual rights and intellectual property.[3]

Securing these new collective rights will only be possible through the strengthening of citizens' movements and CSOs and the forging of alliances between them and the private sector and government in each locality, region and country. Building these alliances will depend on the specific political and economic scenario and on the negotiating skills and initiatives of these groups. There is no one model for this kind of alliance.

## New alliances and political action

Development of a new vision and ***habitus*** for the Internet and the inclusion of Internet rights in national and international legal instruments, as part of the right to communication and culture of peoples and citizens, will only be possible with the initiative and collaboration of CSOs, citizens' movements and organizations devoted to research into the social development of ICTs. These groups, besides including ICT development on their internal agendas, will have to promote alliances, still in short supply, with private sector entities (including but not limited to the major telecommunications companies) and with local, regional and national government bodies.[4]

These accords must reflect a new political culture (vision and ***habitus***) in terms of the social commitment that the private and government sectors must assume for promoting the social development of Internet rights. Securing such a commitment will depend on the negotiating capacity that CSOs and citizens' movements can mobilize in order to enlist the support of those sectors and link it to the needs of different local cultures.

Fostering this process will also depend on strengthening CSOs and citizens' movements and their capacity to exert influence in local and national contexts. The shaping of alliances, solutions and formulas for social development of the Internet will depend on the particular scenario in each country and region.[5] In other words, there are no fixed formulas or models of Internet development: the approach must depend on the context in which it is to be applied.

On the other hand, we must also take account of historic global tendencies and those that affect Latin America and the Caribbean. Especially pertinent in this respect is the work that Scott Robinson has conducted (see "Background" in his paper) on the regional historic context of public policies for ICTs, in which he highlights the convergence of several important phenomena: the weakness of the state's regulatory role over public policies, the concentration of wealth (material and cultural) in the elites, the widening of the digital divide (characterized by the growth of a market for Internet services targeted at urban elites and ignoring underprivileged sectors), the leading role of large international consortia and enterprises (especially in the telecommunications field), and mass migrations.

This context provides a regional scenario in which CSOs and citizens' movements in Latin America and the Caribbean will need to forge innovative alliances in the pursuit of imaginative proposals (such as the community telecentre network proposed by Scott Robinson) that are adapted to local and national realities.

## Notes

1. We use this term ***civic education*** in the sense given to it by Scott Robinson, as a learning process and methodology aimed at fostering participatory processes for linking electronic government initiatives and the incorporation of ICTs into schools more closely to local cultural needs.
2. The experiment with the MISTICA virtual community, described in this book by Daniel Pimienta and Luis Barnola, offers a good example.
3. The research coordinated by Carlos Gregorio on the Internet's social impact on the rights to privacy and intimacy as well as the paper by Agustín Grijalva on copyright and the Internet address squarely the issue of this legal and cultural balance.
4. The need for such alliances is detailed in the conclusions from the research coordinated by Susana Finquelievich and in the papers by Juliana Martínez and Scott Robinson.
5. Juliana Martínez distinguishes between political contexts or scenarios where the state has the predominant say in Internet policies and others where private enterprises play the leading role.